PT J
AU van Schoor, NM
Smit, JH
Twisk, JWR
Lips, P
AF van Schoor, NM
Smit, JH
Twisk, JWR
Lips, P
TI Impact of vertebral deformities, osteoarthritis, and other chronic diseases on quality of life: a population-based study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE chronic diseases; elderly; quality of life; spinal osteoarthritis; vertebral deformities
ID osteoporotic fractures; postmenopausal women; european foundation; older men; consequences; prevalent; risk; questionnaire; osteophytosis; mortality
AB Vertebral deformities and spinal osteoarthritis are common disorders in elderly persons and are associated with back pain, impaired physical functioning, and loss of quality of life. The objectives of this study were to assess the impact of vertebral deformities and osteoarthritis on quality of life in a population-based sample, and to compare this with the impact of six other important chronic diseases on quality of life. The study was performed as a substudy of the Longitudinal Aging Study Amsterdam. Vertebral deformities and osteoarthritis were assessed by spinal radiographs; chronic diseases were assessed by self-report; quality of life was estimated by the SF-12, EQ-5D (EuroQol) and Qualeffo-41 (n=336). In univariate analyses, severe osteoporosis of the vertebrae significantly worsened the physical component summary scale of the SF-12 and the total score of Qualeffo-41, while osteoarthritis of the spine did not significantly reduce quality of life. The other chronic diseases reduced quality of life, although not all changes reached statistical significance. In multivariate analyses, severe osteoporosis of the vertebrae, cardiac disease, peripheral arterial disease, and diabetes mellitus significantly reduced quality of life. In conclusion, most persons in an elderly population suffer from one or more chronic diseases, and therefore experience loss of quality of life. After adjustment for age, sex, and other chronic diseases, severe osteoporosis of the vertebrae, cardiac disease, peripheral arterial disease, and diabetes mellitus significantly reduced quality of life in the general population.
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NR 35
TC 55
Z9 63
U1 0
U2 6
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD JUL 15
PY 2005
VL 16
IS 7
BP 749
EP 756
DI 10.1007/s00198-004-1744-9
PG 8
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 940WE
UT WOS:000230175800006
PM 15480572
DA 2026-02-10
ER

PT J
AU Brukner, PD

Brown, WJ
AF Brukner, PD
Brown, WJ
TI 3. Is exercise good for you?
SO MEDICAL JOURNAL OF AUSTRALIA
LA English
DT Article
ID osteoarthritis; death; guidelines; sports; knee
AB Physical activity can significantly reduce the risk of cardiovascular disease, diabetes, some forms of cancer, osteoporosis, obesity, falls and fractures, and some mental health problems. While the benefits of physical activity are clear, there is a slightly increased risk of sudden death while exercising (compared with while sedentary), especially in untrained people undertaking unaccustomed vigorous activity. Routine exercise testing yields a significant number of false-positive results, and has not been shown to prevent exercise-related acute cardiac events. There is no convincing evidence that exercise is itself associated with osteoarthritis, but significant joint injury which occurs during sport is associated with an increased risk of subsequent development of osteoarthritis.
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NR 33
TC 18
Z9 23
U1 1
U2 6
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0025-729X
EI 1326-5377
J9 MED J AUSTRALIA
JI Med. J. Aust.
PD NOV 21
PY 2005
VL 183
IS 10
BP 538
EP 541
DI 10.5694/j.1326-5377.2005.tb07159.x
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WC Medicine, General & Internal
SC General & Internal Medicine
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PT J
AU Moreno, M
Muñoz, R
Aroca, F
Labarca, M
Brandan, E
Larraín, J
AF Moreno, M
Muñoz, R
Aroca, F
Labarca, M
Brandan, E
Larraín, J
TI Biglycan is a new extracellular component of the Chordin-BMP4 signaling pathway
SO EMBO JOURNAL
LA English
DT Article
DE Biglycan; BMP signaling; Chordin; embryonic patterning; extracellular matrix
ID heparan-sulfate proteoglycans; twisted gastrulation; xenopus-embryos; bmp-binding; deficient mice; organizer; inhibition; differentiation; osteoarthritis; osteoporosis
AB The BMP4 signaling pathway plays key roles during early embryonic development and for maintenance of adult homeostasis. In the extracellular space, BMP4 activity is regulated by a group of interacting molecules including the BMP antagonist Chordin, the metalloproteinase Tolloid and Twisted gastrulation (Tsg). In this study, we identified Biglycan (Bgn), a member of the small leucine-rich proteoglycan family, as a new extracellular modulator of BMP4 signaling. Xenopus Bgn (xBgn) is expressed uniformly in the ectoderm and mesoderm and their derivatives during development. Microinjection of Bgn mRNA induced secondary axes, dorsalized the mesoderm and inhibited BMP4 activity in Xenopus embryos. Biochemical experiments showed that Bgn binds BMP4 and Chordin, interaction that increased binding of BMP4 to Chordin. Bgn was also able to improve the efficiency of Chordin - Tsg complexes to block BMP4 activity. Using antisense morpholinos, we demonstrated that Bgn required Chordin to induce double axes in Xenopus. This work unveiled a new function for Bgn, its ability to regulate BMP4 signaling through modulation of Chordin anti-BMP4 activity.
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NR 33
TC 92

Z9 108
U1 0
U2 5
PU SPRINGERNATURE
PI LONDON
PA CAMPUS, 4 CRINAN ST, LONDON, N1 9XW, ENGLAND
SN 0261-4189
EI 1460-2075
J9 EMBO J
JI Embo J.
PD APR 6
PY 2005
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BP 1397
EP 1405
DI 10.1038/sj.emboj.7600615
PG 9
WC Biochemistry & Molecular Biology; Cell Biology
SC Biochemistry & Molecular Biology; Cell Biology
GA 915SQ
UT WOS:000228327100010
PM 15775969
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ER

PT J
AU Mkukuma, LD
Imrie, CT
Skakle, JMS
Hukins, DWL
Aspden, RM
AF Mkukuma, LD
Imrie, CT
Skakle, JMS
Hukins, DWL
Aspden, RM
TI Thermal stability and structure of cancellous bone mineral from the femoral head of patients with osteoarthritis or osteoporosis
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID cortical iliac crest; subchondral bone; osteo-arthritis; hydroxyapatite; density; apatites; phase; plate; neck

AB Background: Cancellous bone from patients with osteoarthritis (OA) has been reported to be undermineralised and that from patients with osteoporosis (OP) is more liable to fracture. Changes in the mineral component might be implicated in these processes. Objectives: To investigate the thermal stability and the mineral structure of cancellous bone from femoral heads of patients with either OA or OP. Methods: Powdered bone was prepared from femoral heads of patients with either OA or OP and a control group. Composition and thermal stability were determined using a thermogravimetric analyser coupled to a mass spectrometer. Unit cell dimensions and the crystallite size of the mineral were measured using x ray diffraction. Results: Thermal stability of the bone matrix, or of the mineral phase alone, was little altered by disease, though OA bone contained less mineral than OP or control bone. In all three groups, x ray diffraction showed that the mineral unit cell dimensions and crystallite sizes were the same. The mean carbonate content in the mineral from all three groups was between 7.2 and 7.6% and is suggested to be located in both the A site (that is, substituting for hydroxyl groups), and the B site (that is, substituting for phosphate groups). Conclusions: These results confirm that there is a lower mass fraction of mineral in OA bone, and indicate that the nature of the mineral is not a factor in either disease process.
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ZIOUPOS P, 2000, P 12 C EUR SOC BIOM, V0, P327
NR 38
TC 33
Z9 35
U1 0
U2 5
PU ELSEVIER
PI AMSTERDAM
PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
SN 0003-4967
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J9 ANN RHEUM DIS
JI Ann. Rheum. Dis.
PD FEB 15

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BP 222
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DI 10.1136/ard.2004.021329
PG 4
WC Rheumatology
SC Rheumatology
GA 887CE
UT WOS:000226279200012
PM 15647430
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ER

PT J
AU Cankurtaran, M
Halil, M
Yavuz, BB
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Cankurtaran, ES
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AF Cankurtaran, M
Halil, M
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Cankurtaran, ES
Ariogul, S
TI Depression and concomitant diseases in a Turkish geriatric outpatient setting
SO ARCHIVES OF GERONTOLOGY AND GERIATRICS
LA English
DT Article
DE depression; elderly; concomitant diseases
ID bone-mineral density; primary-care patients; late-life depression; patients aged 65; blood-pressure; vascular depression; health-services; hypertension; symptoms; dementia
AB Depression is an important but inadequately diagnosed mood disorder ill elderly. Depressed elderly patients often have chronic concomitant diseases. This paper intended to determine the prevalence of depression and its relation with concomitant disorders and social status among the patients admitted to our geriatric unit. Seven hundred and eighty-nine females and 466 males admitted to our unit were examined for the presence of depression by using the geriatric depression scale (GDS) test. The presence of concomitant diseases was assessed. Depression was diagnosed in 273 patients (21.8%), 193 (70.7%) females and 80

(29.3%) males. Depressed patients suffered from a wide range of other diseases the number and prevalence of which were as follows: Alzheimer's disease (AD) (34; 12.5%), vascular dementia (27; 9.9%), hypertension (HT) (211; 77.3%), diabetes mellitus (DM) (64; 23.4%). osteoporosis (182; 66.7%), atherosclerotic coronary artery disease (CAD) (89; 32.6%), cardiac failure (23; 8.5%), bronchial asthma (8; 2.9%), chronic obstructive pulmonary disease (COPD) (25; 9.2%) and osteoarthritis (133; 48.8%). The correlation between depression and concomitant diseases was statistically significant in hypertensive, demented and osteoporotic patients, as determined in a large elderly population. Previous studies examined the correlation of depression with only one concomitant disease, while we performed the analysis on multiple correlations. (c) 2004 Elsevier Ireland Ltd. All rights reserved.
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TI Circulating cortisone levels are associated with biochemical markers of bone formation and lumbar spine BMD: the Hertfordshire Cohort Study
SO CLINICAL ENDOCRINOLOGY
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DT Article
ID 11-beta-hydroxysteroid dehydrogenase type-1; healthy elderly-men; mineral density; glucocorticoid action; women; corticosteroids; parameters
AB Objective Cortisone is an endogenous corticosteroid that has negligible intrinsic glucocorticoid activity but can be converted to the active corticosteroid cortisol by the enzyme 11 beta-hydroxysteroid dehydrogenase type 1 (11 beta-HSD1). 11 beta-HSD1 is expressed in osteoblasts and may play a role in determining susceptibility to glucocorticoid-induced osteoporosis. In intact osteoblasts enzyme activity, and thus cortisol generation, is dependent on substrate concentration with an almost linear increase in activity across the physiological range. We have therefore attempted to measure the impact of 11 beta-HSD1 activity on bone in vivo by examining the association of circulating cortisone with bone markers, bone mineral density (BMD) and bone loss in a cohort of women and men. Design and subjects Baseline cross-sectional association study involving 135 women and 171 men aged 61-73 years from the Hertfordshire Cohort Study and a 4 year follow-up study examining changes in BMD. Measurements Serum cortisone, cortisol and osteocalcin, and urinary type I collagen cross-linked N-telopeptide (NTX) were measured at baseline. BMD at spine and hip was measured at baseline and 4 years later. Results In men serum cortisone levels were negatively correlated with serum osteocalcin (r = -0.20, P = 0.01); a similar relationship was seen in women (r = -0.16, P = 0.06). No correlation was seen between serum cortisone and urinary NTX (r = 0.03, P = 0.74 for women; r = -0.03, P = 0.72 for men). A negative correlation was observed between serum cortisone and spine BMD in women (r = -0.18, P = 0.04); a similar relationship was also seen in men (r =-0.14, P = 0.07). However, cortisone did not correlate with BMD at the femoral neck or total hip or changes in BMD at any site over time. In analyses adjusted for adiposity, osteoarthritis grade and a range of life-style variables, these relationships did not change substantially. All these relationships were independent of cortisol concentrations. Conclusions The most plausible explanation for the association of circulating cortisone levels with osteocalcin is the presence of 11 beta-HSD1 activity within osteoblasts. The measurement of serum cortisone may independently give insights into the action of glucocorticoids on bone.
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TI Aging bone and cartilage: cross-cutting issues
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DE aging; cartilage; bone; osteoarthritis; osteoporosis; osteopenia; apoptosis; stem cells
ID glycation end-products; age-related-changes; human articular-cartilage; growth-factor-i; chondrocyte apoptosis; life-span; oxidative stress; extracellular-matrix; caloric restriction; cellular senescence
AB Aging is a major risk factor for osteoarthritis and osteoporosis. Yet, these are not necessary outcomes of aging, and the relationship between age-related changes in bone and cartilage and development of disease is not clear. There are some well-described cellular changes associated with aging in multiple tissues that appear to be fundamental to the decline in function of cartilage and bone. A better understanding of age-related changes in cells and tissues is necessary to mitigate or, hopefully, avoid loss of bone and cartilage with aging. In addition, a better understanding of the dynamics of tissue maintenance in vivo is critical to developing tissue replacement and repair therapies. The role of stem cells in this process, and why tissues are not well maintained with advancing age, are frontiers for future aging research. Published by Elsevier Inc.

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DE bone marrow edema; avascular necrosis; osteoarthritis; bone bruise; vasoactive drug
ID femoral-head; transient osteoporosis; idiopathic osteonecrosis; avascular necrosis; follow-up; knee; hip; hypofibrinolysis; impairment; diagnosis
AB Background: Bone marrow edema (BME) is a common cause of pain of the musculoskeletal system. The aim of the study was to assess the efficacy of iloprost in the treatment of BME of different localizations and etiologies. Patients and methods: We reviewed 104 patients (54 male, 50 female) with BME, Their mean age was 52.8 +/- 14.7 years. BME was located 50 times in the knee, 19 times in the talus, 18 times in the femoral head and 17 times in other bones, Patients were allocated to three distinct etiological groups: 27 cases were estimated to have idiopathic BME, 16 post-traumatic BME and the other 61 BME secondary to activated osteoarthritis or mechanical stress. Therapy consisted of a series of five iloprost infusions with either 20, 25 or 50 mu g of iloprost given over 6 hours on 5 consecutive days each. Results: At the clinical follow-up four months after therapy, the pain level of the 104 patients at rest had diminished by a mean of 73% ($p < 0.0001$): 64% of patients reported a reduction, 34% no change and 2% an increase in pain at rest. Pain under stress decreased by a mean of 59%, ($p < 0.0001$): 76% of patients had less pain during activity, 22% no change from baseline and 2% an increased pain level. On MRI, 65% had significant reduction of BME size or complete normalization and 20% showed no change. Worsening of the MRI pattern was found in 2%. 13% were lost to MRI follow-up. Side effects were significantly reduced by lowering the daily dose from 50 to 20 mu g, without impairment of therapeutic effect. Conclusion: The authors conclude that the use of parenteral iloprost might be a viable method in the treatment of BME of different etiologies.
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TC 97
Z9 105
U1 0
U2 3
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J9 WIEN KLIN WOCHENSCHR
JI Wien. Klin. Wochen.
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WC Medicine, General & Internal
SC General & Internal Medicine
GA 928FP
UT WOS:000229257000007
PM 15926619
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PT J

AU Hansen, KE
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AF Hansen, KE
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TI Interobserver reproducibility of criteria for vertebral body exclusion
SO JOURNAL OF BONE AND MINERAL RESEARCH
LA English
DT Article
DE aging; epidemiology; evidence/guidelines; osteoporosis; quantitation; bone densitometry
ID bone-mineral density; predict hip fracture; x-ray absorptiometry; quantitative ultrasound; elderly-women; population; risk; osteopenia; deformity
AB We studied reproducibility of the ISCD vertebral exclusion criteria among four interpreters. Surprisingly, agreement among interpreters was only moderate, because of differences in threshold for diagnosing focal structural defects and choice of which vertebra among a pair discordant for T-score, area, or BMC to exclude. Our results suggest that reproducibility may be improved by specifically addressing the sources of interobserver disagreement. Introduction: Although DXA is widely used to measure vertebral BNID, its interpretation is subject to multiple confounders including osteoarthritis, aortic calcification, and scoliosis. In an attempt to standardize interpretation and minimize the impact of artifacts, the International Society for Clinical Densitometry (ISCD) established criteria for vertebral exclusion, including the presence of a focal structural defect (FSD), discrepancy of >1 SD in T-score between adjacent vertebrae, and a lack of increase in BMC or area from L, to L, Whereas the efforts of the ISCD represent an important advance in BMD interpretation, the interobserver reproducibility with application of these criteria is unknown. We hypothesized that there would be substantial agreement among four interpreters regarding application of the exclusion criteria and the final lumbar spine T-score. Materials and Methods: Each interpreter read a set of 200 lumbar DXA scans obtained on male veterans, applying the ISCD vertebral body exclusion criteria. Results: Surprisingly, agreement among interpreters was only moderate. Differences in interpretation resulted from differing thresholds for recognition of FSD and the choice of excluding the upper or lower vertebral body for the criteria requiring comparison between adjacent

vertebrae. Conclusions: Despite their apparent simplicity, the ISCD vertebral exclusion criteria are difficult to apply consistently. In principle, appropriate refinement of the exclusion criteria may significantly improve interobserver agreement.
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TC 50
Z9 50
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PU OXFORD UNIV PRESS
PI OXFORD
PA GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND
SN 0884-0431
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J9 J BONE MINER RES
JI J. Bone Miner. Res.
PD MAR 15
PY 2005
VL 20
IS 3
BP 501
EP 508
DI 10.1359/JBMR.041134
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 898TB
UT WOS:000227098000016
PM 15746996
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AU Kalichman, L
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AF Kalichman, L

Malkin, I
Kobyliansky, E
TI Association between physique characteristics and hand skeletal aging status
SO AMERICAN JOURNAL OF PHYSICAL ANTHROPOLOGY
LA English
DT Article
DE somatotype; osteoarthritis; osteoporosis; aging
ID bone-mineral density; body-mass index; population biology; osteoarthritis; age; somatotype; obesity; weight; knee; hip
AB The aim of the present study was to evaluate the association between skeletal aging traits (obtained from evaluation of hand radiographs) and physique characteristics, including indices of obesity, skeletal size, muscular development, and the somatotypes of Heath and Carter (1967) and of Deriabin (1985). To achieve our aims, we used multiple regression analysis, and Pearson's and canonical correlation analyses. The studied population comprised 629 males and 561 females aged 18-90 years, all members of the Chuvasha (Russian Federation). The present study provides evidence for a connection between hand bone aging traits and physique characteristics. The cortical index showed a small but significant correlation with adiposity and the index of overall physique, but bone mineral density (BMD) traits were not correlated with the index of overall physique. Deriabin's set of somatotypes was significantly correlated with BMD, but could explain only 2% of its variation. Significant correlations of the hand osteoarthritis trait were observed with indices of adiposity. Also observed were statistically significant canonical correlations with both sets of somatotypes, which enabled us to predict 2-3% of hand osteoarthritis variation by a combination of somatotype components. Osseometric score evinced statistically significant correlations with most indices of physique as well as with a combination of somatotype components. These findings may prove helpful in epidemiological studies, because they show that body composition is the factor that is statistically significantly associated with skeletal aging.
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SN 0002-9483
EI 1096-8644
J9 AM J PHYS ANTHROPOL
JI Am. J. Phys. Anthropol.
PD DEC 15
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IS 4
BP 889
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WC Anthropology; Evolutionary Biology
SC Anthropology; Evolutionary Biology
GA 989BE
UT WOS:000233647100018
PM 16118785
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TI Association of radiological hand osteoarthritis with bone mineral mass: a population study
SO RHEUMATOLOGY
LA English
DT Article
DE epidemiology; bone mineral mass; calcaneal ultrasound; osteoarthritis; osteoporosis
ID finns aged 30; knee osteoarthritis; quantitative ultrasound; articular-cartilage; risk-factors; elderly-men; density; women; hip; osteoporosis
AB Objectives. A number of previous studies have reported an inverse relationship between osteoarthritis and osteoporosis. However, the association has remained controversial because osteoarthritis in hand joints seems to associate differently from osteoarthritis in weight-bearing joints with bone mineral mass. We studied osteoarthritis in distal interphalangeal (DIP) joints and osteoarthritis in the base of the thumb (CMC-1) for their cross-sectional associations with metacarpal cortical bone mineral mass, and for their prediction of calcaneal broadband ultrasound attenuation. Methods. A population sample of 8000 Finns aged 30 yr and over was invited to a comprehensive health examination in 1978-1980; 90% complied. Hand radiographs were taken from 3568 participants to diagnose osteoarthritis in various hand joints, and to determine two indicators of cortical bone mineral mass, the combined cortical thickness (CCT) and the metacarpal index (MCI). Calcaneal broadband ultrasound attenuation was measured 20 yr later in 340 of these participants with the Sahara sonometer. Results. In the cross-sectional setting, osteoarthritis in the DIP joints and osteoarthritis in the base of the thumb (CMC-1) were significantly associated with low CCT and low MCI. These associations were proportional to the radiological severity of osteoarthritis. In the follow-up setting, symmetrical DIP osteoarthritis adjusted for age, sex, body mass index, smoking, education, workload and MCI significantly predicted low values of broadband ultrasound attenuation. Conclusions. Our results indicate a direct relation of both radiological DIP osteoarthritis and CMC-1 osteoarthritis with low cortical bone mineral mass, in proportion to the severity of osteoarthritis. The presence of symmetrical DIP osteoarthritis, a possible indicator of generalized osteoarthritis, suggests an increased risk of osteoporosis over time.
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NR 42
TC 36
Z9 41
U1 0
U2 16
PU OXFORD UNIV PRESS
PI OXFORD
PA GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND
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J9 RHEUMATOLOGY
JI RHEUMATOLOGY
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IS 12
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DI 10.1093/rheumatology/kei084
PG 6
WC Rheumatology
SC Rheumatology
GA 997BM

UT WOS:000234220000015
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ER

PT J
AU Goerres, GW
Häuselmann, HJ
Seifert, B
Michel, BA
Uebelhart, D
AF Goerres, GW
Häuselmann, HJ
Seifert, B
Michel, BA
Uebelhart, D
TI Patients with knee osteoarthritis have lower total hip bone mineral density in the symptomatic leg than in the contralateral hip
SO JOURNAL OF CLINICAL DENSITOMETRY
LA English
DT Article
DE knee osteoarthritis; bone mineral density (BMD); asymmetry
ID chingford; incident; risk
AB Osteoarthritis (OA) of the knee is common in the aging population. In patients with OA, bone mineral density (BMD) is usually increased, but the fracture rate does not appear to be systematically lower than in age-matched healthy controls. The aim of our study was to describe hip BNID in patients presenting with unilateral symptomatic knee OA. Patients with painful knee OA were prospectively included in a single-center, randomized, double-blind, placebo-controlled clinical trial to evaluate the structure-modifying efficacy of an oral chondroitin sulfate treatment oil the knee joint. The majority of these patients underwent additional measurements of BMD of their lumbar spine and both hips using dual-energy X-ray absorptiometry (DXA). The hip BMD values of the leg with symptomatic knee OA were compared with the contralateral hip. One-hundred and sixty-one patients (81 men and 80 women; aged 62.6 +/- 9.2 yr, range 40-82 yr) underwent DXA. The median total hip BMD was higher than in age-matched controls, but patients had a relatively lower hip BMD in the knee OA-affected leg (p = 0.001). Our knee OA patients rarely presented with concomitant osteoporosis, but usually had a relatively lower hip BMD on the affected leg. Therefore, we suggest that the hip of the leg with symptomatic knee OA should be measured if DXA is acquired only at one hip. Future studies have to assess whether the relative decrease of BMD at the hip of the leg with knee OA might influence fracture incidence.
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NR 10
TC 13
Z9 21
U1 0
U2 4
PU HUMANA PRESS INC
PI TOTOWA
PA 999 RIVERVIEW DRIVE SUITE 208, TOTOWA, NJ 07512 USA
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J9 J CLIN DENSITOM
JI J. Clin. Densitom.
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WC Endocrinology & Metabolism

SC Endocrinology & Metabolism
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PT J
AU Rittweger, J
Maffulli, N
Maganaris, CN
Narici, MV
AF Rittweger, J
Maffulli, N
Maganaris, CN
Narici, MV
TI Reconstruction of the anterior cruciate ligament with a Patella-Tendon-Bone graft may lead to a permanent loss of bone mineral content due to decreased patellar tendon stiffness
SO MEDICAL HYPOTHESES
LA English
DT Article
ID skeletal structural adaptations; mechanical usage satmu; redefining wolff law; muscle strength; bed rest; density; knee; removal; osteoporosis; injury
AB Immobilisation induces bone loss. Evidence from studies in animals and healthy humans that were immobitised for a limited time indicates that, in general, bone mass may be restored even in adults. Following conservative management of partial tears of the anterior cruciate ligament (ACL), bone loss is often negligible (2-3%). After surgical reconstruction, however, there is greater bone loss (15-20%), with little or no recovery. Bones adapt to the stresses they experience. Also, the largest forces in the musculosketetal system arise from muscle pull. Tendons transmit these forces. Many surgical techniques for ACL reconstruction use autologous tendon grafts. We hypothesise that tissue harvesting causes weakening of the formerly intact tendon, which, in turn, leads to reduced muscle pull and subsequent bone loss in those parts of the bone that are loaded by the tendon. If our hypothesis holds true, it may change patients' and surgeons' choice of management. Clinical follow-up should assess the functional result with greater scrutiny, possibly including the assessment of bone mineral content. This may be particularly important since there is accumulating evidence that a decrease in bone mineral density (BMD) preceedes, and hence may be a cause of, osteoarthritis. (c) 2004 Elsevier Ltd. All rights reserved.
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NR 29
TC 38
Z9 45

U1 1
U2 10
PU CHURCHILL LIVINGSTONE
PI EDINBURGH
PA JOURNAL PRODUCTION DEPT, ROBERT STEVENSON HOUSE, 1-3 BAXTERS PLACE, LEITH WALK, EDINBURGH EH1 3AF, MIDLOTHIAN, SCOTLAND
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JI Med. Hypotheses
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WC Medicine, Research & Experimental
SC Research & Experimental Medicine
GA 921VG
UT WOS:000228792800023
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ER

PT J
AU Kuliwaba, JS
Fazzalari, NL
Findlay, DM
AF Kuliwaba, JS
Fazzalari, NL
Findlay, DM
TI Stability of RNA isolated from human trabecular bone at post-mortem and surgery
SO BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR BASIS OF DISEASE
LA English
DT Article
DE bone; mRNA; post-mortem; RNA stability; surgery
ID kappa-b ligand; messenger-rna; gene-expression; osteoclast differentiation; receptor activator; cancellous bone; cell biology; osteoblast; autopsy; osteoprotegerin
AB To determine the reliability of gene expression studies in human post-mortem bone, it is important to evaluate the stability of RNA isolated from such tissues as a

function of the post-mortem interval. The stability of total RNA and bone-specific mRNA species was examined in bone samples obtained from routine autopsies and at surgery. The optimal temperature for any storage and transport of the bone before RNA isolation was shown to be 4 degrees C, and RT-PCR analysis is the preferred technique for the analysis of gene expression in post-mortem bone as it tolerates partial RNA degradation. For gene expression studies in bone, post-mortem cases, with a post-mortem interval of less than 48 h, should be selected, and the time that bone is stored after retrieval at autopsy or surgery should be kept to a minimum. Overall, our findings indicate that with appropriate storage and handling, RNA can be reliably isolated from human bone obtained at post-mortem and surgery to study ex vivo the pattern of gene expression in healthy individuals and in patients with musculoskeletal diseases such as osteoporosis and osteoarthritis. (c) 2005 Elsevier B.V. All rights reserved.
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NR 27
TC 34
Z9 54
U1 0
U2 5
PU ELSEVIER SCIENCE BV
PI AMSTERDAM
PA PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
SN 0925-4439
EI
J9 BBA-MOL BASIS DIS
JI Biochim. Biophys. Acta-Mol. Basis Dis.
PD APR 15
PY 2005
VL 1740
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WC Biochemistry & Molecular Biology; Biophysics; Cell Biology
SC Biochemistry & Molecular Biology; Biophysics; Cell Biology
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PT J
AU Disch, AC
Matziolis, G
Perka, C
AF Disch, AC
Matziolis, G
Perka, C
TI The management of necrosis-associated and idiopathic bone-marrow oedema of the proximal femur by intravenous iloprost
SO JOURNAL OF BONE AND JOINT SURGERY-BRITISH VOLUME
LA English
DT Article
ID femoral-head; transient osteoporosis; core decompression; avascular necrosis; osteonecrosis; hip; mri; pain; pressure; osteoarthritis
AB Bone-marrow oedema can occur both in isolation and in association with necrosis of bone, but it has not been shown whether each respond to the same methods of treatment. We treated 16 patients with isolated oedema and 17, in which it was associated with necrosis of the proximal femur, with the prostacyclin derivative iloprost, which has been shown to be effective in the idiopathic form. The Harris hip score, the range of movement, the extent of the oedema as measured by MRI, pain on a visual analogue scale and patient satisfaction were recorded before and subsequent to treatment. In both groups, we were able to show a significant improvement ($p < 0.001$) in these observations during the period of follow-up indicating that iloprost will produce clinical improvement in both circumstances.
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TC 101
Z9 109
U1 0
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PU BRITISH EDITORIAL SOC BONE & JOINT SURGERY
PI LONDON
PA 22 BUCKINGHAM STREET, LONDON WC2N 6ET, ENGLAND
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JI J. Bone Joint Surg.-Br. Vol.
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WC Orthopedics; Surgery
SC Orthopedics; Surgery
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ER

PT J
AU McKiernan, FE

AF McKiernan, FE
TI Musculoskeletal manifestations of mild osteogenesis imperfecta in the adult
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE fracture; impairment; musculoskeletal; osteogenesis imperfecta; tendon
ID sympathetic dystrophy syndrome; percutaneous vertebroplasty; transient osteoporosis; tendon-rupture; fractures; hip
AB The musculoskeletal manifestations of mild forms of osteogenesis imperfecta are not well defined in the adult. The aim of this study was to characterize the musculoskeletal manifestations and resulting impairments reported by adults with mild osteogenesis imperfecta. For this task a survey of musculoskeletal symptoms and impairments was hosted on the Osteogenesis Imperfecta Foundation web site for 6 weeks. Survey responses are reported herein. There were 111 unduplicated, adult respondents (78 female). Mean age was 40.8 years. More than one-quarter of 3,410 lifetime fractures occurred in adulthood. Nearly half of respondents reported an established diagnosis of "arthritis" (usually osteoarthritis), and the majority of these reported some degree of impairment attributable to arthritis. Articular pain, stiffness and instability were dominant in the large, weight-bearing joints of the lower extremities. Back pain and scoliosis were common. Of the respondents, 15% required assistance with light physical tasks and personal care. Two-thirds reported joint hyper-mobility, and one-third reported a previous tendon rupture. Complex regional pain syndrome was rare. Respondents reported frequent use of medications known to have potential adverse skeletal effects. In spite of these concerns the majority rated their overall physical health as good or excellent. Adults with mild osteogenesis imperfecta continue to sustain fractures into adulthood, and the majority reports some functional impairment due to musculoskeletal issues. Significant impairment is not rare.
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NR 28
TC 47
Z9 57
U1 0
U2 7
PU SPRINGER LONDON LTD
PI GODALMING
PA SWEETAPPLE HOUSE CATTESHALL ROAD, GODALMING GU7 3DJ, SURREY, ENGLAND
SN 0937-941X
EI
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD DEC 15
PY 2005
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IS 12
BP 1698
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DI 10.1007/s00198-005-1905-5
PG 5
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 993YZ
UT WOS:000233997600031
PM 15902417
DA 2026-02-10
ER

PT J
AU Stucki, G
Ewert, T
AF Stucki, G
Ewert, T
TI How to assess the impact of arthritis on the individual patient: the WHOICF
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID international classification; outcome measures; health icf; disability; osteoarthritis
AB The ICF is not only a comprehensive and adequate framework for assessing the impact of arthritis on individual patients but also its impact on populations. The ICF framework and applications such as the ICF Core Sets for rheumatoid arthritis, osteoarthritis, osteoporosis, and low back pain are therefore likely to be used extensively not only in clinical practice but also in outcomes and rehabilitation research, education, health statistics, and regulation.
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NR 28
TC 30
Z9 31
U1 0
U2 3
PU ELSEVIER
PI AMSTERDAM
PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
SN 0003-4967
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J9 ANN RHEUM DIS
JI Ann. Rheum. Dis.
PD MAY 15
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WC Rheumatology
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PT J
AU Wei, HW
Sun, SS
Jao, SHE
Yeh, CR
Cheng, CK
AF Wei, HW
Sun, SS
Jao, SHE
Yeh, CR
Cheng, CK
TI The influence of mechanical properties of subchondral plate, femoral head and neck on dynamic stress distribution of the articular cartilage
SO MEDICAL ENGINEERING & PHYSICS
LA English
DT Article
DE osteoarthritis; articular cartilage; subchondral plate; subchondral bone; femoral head; femoral neck; finite element analysis
ID coxarthrosis hip osteoarthritis; finite-element analysis; bone-mineral density; cancellous bone; shaft angle; osteoporosis; thickness; fracture; failure; joint
AB A few finite element models have addressed the dynamic juxtaarticular stress transmission but none focused the investigation on the combined influence of the individual moduli of the underlying bones, including the subchondral plate, the femoral head and the femoral neck of the proximal femur. A finite element model including the acetabulum and the proximal femur was analyzed with dynamic loadings to study the effects of mechanical property changes in the underlying bones of the proximal femur on the stress distribution in the cartilage at the hip joint. We found the stress distribution was most sensitive to the subchondral plate stiffening, while the overall stiffening of the underlying bones had mild effect on the shear stress on the cartilage surface (or at the subchondral bone/cartilage interface) and on the strain energy density in the cartilage. Our results indicate that the subchondral plate plays a predominant mechanical role in the initial degeneration of the cartilage. The results may offer a mechanical explanation as to why the cartilage failure is common in patients with osteoarthritis but rare in patients with osteoporosis. (c) 2004 IPEM. Published by Elsevier Ltd. All rights reserved.
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NR 26
TC 46
Z9 66
U1 1
U2 10
PU ELSEVIER SCI LTD
PI London
PA 125 London Wall, London, ENGLAND
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WC Engineering, Biomedical
SC Engineering
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PT J
AU Boyd, CM
Darer, J
Boult, C
Fried, LP
Boult, L
Wu, AW
AF Boyd, CM
Darer, J
Boult, C
Fried, LP
Boult, L
Wu, AW
TI Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases - Implications for pay for performance
SO JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
LA English
DT Article
ID adverse drug events; elderly-patients; atrial-fibrillation; medical-management; american-college; osteoarthritis; polypharmacy; preferences; adherence; pitfalls
AB Context Clinical practice guidelines (CPGs) have been developed to improve the quality of health care for many chronic conditions. Pay-for-performance initiatives assess physician adherence to interventions that may reflect CPG recommendations. Objective To evaluate the applicability of CPGs to the care of older individuals with several comorbid diseases. Data Sources The National Health Interview Survey and a nationally representative sample of Medicare beneficiaries (to identify the most prevalent chronic diseases in this population); the National

Guideline Clearinghouse (for locating evidence-based CPGs for each chronic disease). Study Selection Of the 15 most common chronic diseases, we selected hypertension, chronic heart failure, stable angina, atrial fibrillation, hypercholesterolemia, diabetes mellitus, osteoarthritis, chronic obstructive pulmonary disease, and osteoporosis, which are usually managed in primary care, choosing CPGs promulgated by national and international medical organizations for each. Data Extraction Two investigators independently assessed whether each CPG addressed older patients with multiple comorbid diseases, goals of treatment, interactions between recommendations, burden to patients and caregivers, patient preferences, life expectancy, and quality of life. Differences were resolved by consensus. For a hypothetical 79-year-old woman with chronic obstructive pulmonary disease, type 2 diabetes, osteoporosis, hypertension, and osteoarthritis, we aggregated the recommendations from the relevant CPGs. Data Synthesis Most CPGs did not modify or discuss the applicability of their recommendations for older patients with multiple comorbidities. Most also did not comment on burden, short- and long-term goals, and the quality of the underlying scientific evidence, nor give guidance for incorporating patient preferences into treatment plans. if the relevant CPGs were followed, the hypothetical patient would be prescribed 12 medications (costing her $406 per month) and a complicated nonpharmacological regimen. Adverse interactions between drugs and diseases could result. Conclusions This review suggests that adhering to current CPGs in caring for an older person with several comorbiclities may have undesirable effects. Basing standards for quality of care and pay for performance on existing CPGs could lead to inappropriate judgment of the care provided to older individuals with complex comorbiclities and could create perverse incentives that emphasize the wrong aspects of care for this population and diminish the quality of their care. Developing measures of the quality of the care needed by older patients with complex comorbidities is critical to improving their care.

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1995, 1900, V10, V0, P1
NR 74
TC 1791
Z9 2021
U1 1
U2 208
PU AMER MEDICAL ASSOC
PI CHICAGO
PA 330 N WABASH AVE, STE 39300, CHICAGO, IL 60611-5885 USA
SN 0098-7484
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JI JAMA-J. Am. Med. Assoc.
PD AUG 10
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IS 6
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EP 724
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WC Medicine, General & Internal
SC General & Internal Medicine
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PT J
AU Corrado, A
Cantatore, FP
Grano, M
Colucci, S
AF Corrado, A

Cantatore, FP
Grano, M
Colucci, S
TI Neridronate and human osteoblasts in normal, osteoporotic and osteoarthritic subjects
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE neridronate; osteoarthritis; osteoblasts; osteocalcin; osteoporosis; vitamin D
ID rat bone-cells; in-vitro; bisphosphonates; alendronate; etidronate; calvaria; culture; osteoprotegerin; proliferation; osteogenesis
AB The objective of this study was to evaluate the metabolic in vitro effect of the bisphosphonate neridronate on normal and pathological human osteoblasts. Primary human osteoblast cultures were obtained from cancellous bone of osteoarthritic (OA) and osteoporotic (OP) patients and a corresponding healthy control group. Osteocalcin production was evaluated by cultured cells in neridronate 10(-4) M and 10(-6) M, both under basal conditions and after vitamin D-3 stimulation. In the absence of neridronate, vitamin D-3 increased osteocalcin production in all cell cultures; under the same conditions, and in the absence of vitamin D-3, OA osteoblasts showed a significantly higher osteocalcin production whereas OP osteoblasts showed a significantly lower osteocalcin production compared to the normal osteoblasts, respectively. In all cellular populations neridronate at a higher concentration (10(-4) M) induced a reduction in osteocalcin synthesis, but in normal and osteoarthritic osteoblasts did not reduce the stimulatory effect of vitamin D-3, whereas it inhibited the vitamin D-3-induced increase of osteocalcin synthesis in the osteoporotic cells. In normal and osteoporotic osteoblasts stimulation with the lower neridronate concentration (10(-6) M) significantly increased osteocalcin production, which was further enhanced by vitamin D-3 as an additional effect of the combined treatment. In OA osteoblasts, neridronate 10(-6) M did not induce an increase in osteocalcin synthesis and the additional effect of combined treatment with vitamin D-3 was not observed. Neridronate can modify the metabolic activity of human osteoblasts by enhancing or decreasing their biosynthetic activity, both in normal and in pathological conditions, depending on compound concentration and on different cell types. These results confirm the validity of using neridronate at doses usually administered in treating osteoporosis, and they suggest using it to treat other diseases which show an altered osteoblast metabolism, such as osteoarthritis.
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NR 26
TC 28
Z9 30
U1 0
U2 3
PU SPRINGER LONDON LTD
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0770-3198
EI 1434-9949
J9 CLIN RHEUMATOL

JI Clin. Rheumatol.
PD SEP 15
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BP 527
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DI 10.1007/s10067-005-1100-2
PG 8
WC Rheumatology
SC Rheumatology
GA 979CS
UT WOS:000232920600017
PM 16091841
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PT J
AU Loucks, J
   Pope, JE
AF Loucks, J
   Pope, JE
TI Osteoporosis in scleroderma
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE osteoporosis; systemic sclerosis; risk factors; bone mineral density
ID systemic-sclerosis; osteoarthritis
AB OBJECTIVE To review the literature describing the association of osteoporosis (OP) with scleroderma (SSc). METHODS A Medline (PubMed) search identified all studies from 1966 to 2004 that investigated the association between OP and SSc. Search terms included "scieroderma," "systemic sclerosis," "osteoporosis, " "bone mineral density," "bone densitometry," and "prevalence." RESULTS Eight case control studies and 1 retrospective study (comparing OP status to a reference standard) were identified. There is no clear association between bone mineral density (BMD) scores and scleroderma. Two of 4 studies have reported lower BMD scores in SSc, but appear not to have considered possible confounding risk factors. Earlier age of menopause has been reported in 2 of 3 studies, and thus, may be a confounder in some samples of women with SSc. Studies of bone metabolism markers have not provided any consistent explanatory mechanism for increased OP in SSc, and such markers may be unreliable in SSc as these are affected by the altered collagen turnover and fibrosis characteristic of SSc. CONCLUSIONS It is unknown whether OP is truly increased in SSc or whether this association has been observed in some studies as a result of other confounding risk factors for OP.

Clinical heterogeneity of SSc study samples and small sample sizes have contributed to the difficulty in obtaining valid estimates of the risk for the development of OP. There is no strong evidence in the literature for consistently lower BMD scores in SSc, or for altered biomarkers of bone resorption. Earlier menopause, corticosteroid use in some patients, and other factors secondary to SSc (such as malabsorption and inflammation), may be causal, factors or may be confounders in studies of OP in SSC. (C) 2004 Elsevier Inc. All rights reserved.
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NR 21
TC 44
Z9 50
U1 0

U2 1
PU W B SAUNDERS CO-ELSEVIER INC
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J9 SEMIN ARTHRITIS RHEU
JI Semin. Arthritis Rheum.
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WC Rheumatology
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PT J
AU Rollot, F
Wechsler, B
du Boutin, LTH
De Gennes, C
Amoura, Z
Hachulla, E
Piette, JC
AF Rollot, F
Wechsler, B
du Boutin, LTH
De Gennes, C
Amoura, Z
Hachulla, E
Piette, JC
TI Hemochromatosis and femoral head aseptic osteonecrosis: A nonfortuitous association?
SO JOURNAL OF RHEUMATOLOGY
LA English

DT Article
DE hemochromatosis; femoral head; hip aseptic osteonecrosis
ID natural-history; hip arthropathy; arthritis; features
AB Chondrocalcinosis, chronic pseudo-osteoarthritis arthropathy, and osteoporosis are classic osteoarticular complications of hemochromatosis (HC). Within HC, femoral head aseptic osteonecrosis (FHAO) is not notified in textbooks. We describe 3 cases of FHAO occurring in this setting in 3 patients homozygous for the C282Y mutation on HFE gene who had no other risk factors for FHAO. FHAO was diagnosed 9 years before (Case 1), concomitantly with (Case 3), or 9 years after HC (Case 2). In one case, FHAO occurred although phlebotomies were regularly carried out. There are scarce data available in the literature on HC and FHAO. Our observations suggest FHAO may be an indicator for HC, and iron balance should be determined before considering FHAO as idiopathic. Thus phlebotomy may not be protective against the occurrence of FHAO. Studies are needed to determine the prevalence of HC in consecutive patients with FHAO.
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NR 9
TC 16
Z9 19
U1 0
U2 0
PU J RHEUMATOL PUBL CO
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PT J
AU Jordan, KM
Syddall, H
Dennison, EM
Cooper, C
Arden, NK
AF Jordan, KM
Syddall, H
Dennison, EM
Cooper, C
Arden, NK
TI Birthweight, vitamin D receptor gene polymorphism, and risk of lumbar spine osteoarthritis
SO JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE birthweight; lumbar spine; osteoarthritis; risk factors; vitamin D receptor gene
ID bone-mineral density; radiographic osteoarthritis; disc degeneration; early growth; back-pain; osteoporosis; association; environment; infancy; disease
AB Objective. To investigate risk factors for adult lumbar spine osteoarthritis (OA) including polymorphisms of the vitamin D receptor gene (VDR) and birthweight. Methods. Plain radiographs of the lumbar spine were taken in 392 healthy subjects and graded for osteophytes and disc space narrowing (DSN); demographic data were collected. Details of birthweight and weight at 1 year were retrieved from historical records. VDR gene allelic variation was analyzed in 291 subjects. Results.

The mean age of the cohort was 65.8 years; mean weight was 68.9 kg in women and 80.1 kg and men. Osteophytes of grade >= 2 were found in 63.5% of this cohort; DSN >= 2 was present in 14.3% of subjects. Increasing osteophyte severity was significantly associated with age, adult weight, and manual social class; DSN was not. Presence and severity of osteophytes were associated with low birthweight and lower weight at 1 year in men, but not in women. No associations were found for DSN. The B allele of the VDR gene was associated with increasing severity of osteophyte. There was a significant interaction between birthweight and VDR gene in determining risk of osteophytosis in men (p for interaction = 0.04). The VDR-birthweight interaction pattern was similar but not statistically significant in women. Conclusion. Lumbar spine OA was a prevalent finding in this cohort. Both birthweight and polymorphisms in the VDR gene were associated with the presence of lumbar spine osteophytes and a significant interaction was observed between these 2 factors in men.

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NR 35
TC 47
Z9 50
U1 0
U2 6
PU J RHEUMATOL PUBL CO
PI TORONTO
PA 365 BLOOR ST E, STE 901, TORONTO, ONTARIO M4W 3L4, CANADA
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WC Rheumatology
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PT J
AU Oh, HM

Kang, YJ
Kim, SH
Lee, YS
Park, MK
Heo, JM
Sun, JJ
Kim, HJ
Kang, ES
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Seo, HG
Lee, JH
Yun-Choi, HS
Chang, KC
AF Oh, HM
Kang, YJ
Kim, SH
Lee, YS
Park, MK
Heo, JM
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Kang, ES
Kim, HJ
Seo, HG
Lee, JH
Yun-Choi, HS
Chang, KC
TI Agastache rugosa leaf extract inhibits the iNOS expression in ROS 17/2.8 cells activated with TNF-α and IL-1β
SO ARCHIVES OF PHARMACAL RESEARCH
LA English
DT Article
DE nitric oxide; osteoarthritis; bone turn-over; osteoblast; Agastache rugosa
ID nitric-oxide synthase; inflammation-induced osteoporosis; osteoblast-like cells; experimental osteoarthritis; rheumatoid-arthritis; induced apoptosis; bone-resorption; kappa-b; rat; mouse
AB It has been suggested that nitric oxide (NO) derived from inducible nitric oxide synthase (NOS) may act as a mediator of cytokine-incluced effects on bone turn-over. NO is also recognized as an important factor in bone remodeling, i.e., participating in osteoblast apoptosis in an arthritic joint. The components of Agastache rugosa are known to have many pharmacological activities. In the present study, we investigated the effects of Agastache rugosa leaf extract (ELAR) on NO production and the iNOS expression in ROS 17/2.8 cells activated by a mixture of inflammatory cytokines including TNF-alpha and IL-1 beta. A

preincubation with ELAR significantly and concentration-dependently reduced the expression of iNOS protein in ROS 17/2.8 cells activated with the cytokine mixture. Consequently, the NO production was also significantly reduced by ELAR with an IC50 of 0.75 mg/mL. The inhibitory mechanism of iNOS induction by ELAR prevented the activation and translocation of NF-kappa B (p65) to the nucleus from the cytosol fraction. Furthermore, ELAR concentration-dependently reduced the cellular toxicity induced by sodium nitroprusside, an NO-donor. These results suggest that ELAR may be beneficial in NO-mediated inflammatory conditions such as osteoporosis.

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NR 29
TC 28
Z9 36
U1 0
U2 13
PU PHARMACEUTICAL SOC KOREA
PI SEOUL
PA 1489-3 SUHCHO-DONG, SUHCHO-KU, SEOUL 137-071, SOUTH KOREA
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J9 ARCH PHARM RES
JI Arch. Pharm. Res.
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IS 3
BP 305
EP 310
DI 10.1007/BF02977797
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WC Chemistry, Medicinal; Pharmacology & Pharmacy
SC Pharmacology & Pharmacy
GA 911QC
UT WOS:000228018400009
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ER

PT J
AU Cake, MA
Appleyard, RC
Read, RA
Smith, MM
Murrell, GAC
Ghosh, P

AF Cake, MA
Appleyard, RC
Read, RA
Smith, MM
Murrell, GAC
Ghosh, P
TI Ovariectomy alters the structural and biomechanical properties of ovine femoro-tibial articular cartilage and increases cartilage NOS
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE ovariectomy; sheep; cartilage biomechanics; nitric oxide radical
ID estrogen replacement therapy; nitric-oxide synthase; sex-hormones; mechanical-property; lateral meniscectomy; in-vivo; osteoarthritis; 17-beta-estradiol; collagen; model
AB Objective: To examine the effect of oestrogen depletion produced by surgical ovariectomy on the structural and biomechanical properties of ovine femoro-tibial articular cartilage (AC), and the production of inducible nitric oxide synthase (iNOS) and nitrotyrosine by these tissues. Methods: Six aged ewes were surgically ovariectomised (OVX), while six were used as unoperated controls. Dynamic biomechanical indentation testing of tibial plateau AC was performed at 26 weeks post-op. Histological sections of medial tibial plateau and lateral tibial plateau (LTP), medial and lateral femoral condyles (MFC, LFC) and patellar AC were examined for histopathology, toluidine blue staining intensity, and patterns of collagen birefringence intensity. Immunoreactivity for iNOS and nitrotyrosine was assessed in full-thickness biopsy plugs of LFC and patellar AC, and patellar AC explants were cultured to determine in vitro NO release. Results: Phase lag was reduced overall in LTP-AC of OVX sheep (10.9 +/- 2.2 degrees vs 12.1 +/- 2.3 degrees; $P < 0.0001$). Cartilage thickness was reduced in the LTP of OVX sheep ($P = 0.0002$), in association with localised changes in dynamic shear modulus. Toluidine blue staining intensity was reduced in the patella, LFC, and MFC. Histological examination revealed greater histopathology scores in the MFC of OVX animals, and altered collagen birefringence intensity plots in the LTP. Immunostaining for iNOS was increased in patella AC ($P = 0.008$), whilst nitrotyrosine immunoreactivity was increased in patella ($P = 0.03$) and LFC ($P < 0.0001$) AC. NO release by patellar AC explants was also elevated. Conclusions: Oestrogen depletion induced by OVX caused regional thinning of femoro-tibial cartilage, with biomechanical and histological changes suggestive of a disturbance in the content and/or structural organisation of the proteoglycan and collagen macromolecular assembly. The observed up-regulation of cartilage iNOS suggests a possible mechanism for these matrix changes. (c) 2005 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 61
TC 38
Z9 42
U1 0
U2 9
PU W B SAUNDERS CO LTD
PI LONDON
PA 32 JAMESTOWN RD, LONDON NW1 7BY, ENGLAND
SN 1063-4584
EI
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD DEC 15
PY 2005
VL 13
IS 12
BP 1066
EP 1075
DI 10.1016/j.joca.2005.07.001
PG 10
WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 994EV
UT WOS:000234014500004
PM 16154775
DA 2026-02-10
ER

PT J
AU Abdallah, BM
Stilgren, LS
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Abrahamsen, B
AF Abdallah, BM
Stilgren, LS
Nissen, N
Kassem, M
Jorgensen, HRI
Abrahamsen, B
TI Increased RANKL/OPG mRNA ratio in iliac bone biopsies from women with hip fractures
SO CALCIFIED TISSUE INTERNATIONAL
LA English
DT Article
DE osteoporosis; cytokines; bone biopsy; osteoprotegerin; PCR analysis
ID osteoclastogenesis-inhibitory factor; tumor-necrosis-factor; kappa-b ligand; receptor activator; osteoprotegerin ligand; differentiation factor; soluble interleukin-6; mineral density; resorption; osteoarthritis
AB RANKL (receptor activator of NF-kappaB) is a potent physiological inducer of osteoclastogenesis. Its actions are blocked by the decoy receptor osteoprotegerin (OPG), and treatment with OPG blocks bone resorption in postmenopausal women. Both positive and negative associations between serum OPG and bone mineral density (BMD) have been reported in the literature. We hypothesized that decreased OPG production relative to RANKL within bone itself could lead to increased risk of osteoporotic fracture. We included ten women with hip fracture (age 76.3 +/- 8.0 years, NS hip BMD 0.686 +/- 1.3 g/cm(2), p < 0.05) and 24 women with osteoarthrosis of the hip (age 72.8 +/- 7.2 years, hip BMD 0.832 +/- 1.1 g/cm(2)). Transiliac biopsies were obtained at the time of surgery. Total RNA was extracted from biopsies and reverse-transcribed. Real-time quantification of rnRNA was performed with a SYBR Green I real time PCR assay, calculating relative gene expession with normalization of results for 0 actin mRNA. Actin normalized mRNA levels for OPG and interleukin (IL)-6 were significantly lower in fracture patients, with a significantly higher RANKL/OPG ratio in patients with Fractures. There was no significant difference in tumor necrosis factor (TNF), IL-1, IL-1ra, or IL-7 expression. IL-6 mRNA levels were lower in fracture patients (P < 0.05). The effect of increased RANKL/OPG ratio (Z = 2.08, P < 0.05) on fracture risk was additive to that of hip BMD T score (Z = -1.95, P < 0.05) when assessed using logistic regression. Elderly women with hip fractures exhibit an increased RANKI_/0PG rnRNA content of iliac bone. This is associated with increased fracture susceptibility, which is not in itself explained by low BMD.
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NR 40
TC 58
Z9 62
U1 0
U2 5
PU SPRINGER
PI NEW YORK
PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
SN 0171-967X
EI 1432-0827
J9 CALCIFIED TISSUE INT
JI Calcif. Tissue Int.
PD FEB 15
PY 2005
VL 76
IS 2
BP 90
EP 97
DI 10.1007/s00223-004-0074-4
PG 8
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 902JR

UT WOS:000227351600002
PM 15570403
DA 2026-02-10
ER

PT J
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Ay, A
Bingöl, Ü
Altan, L
AF Yurtkuran, M
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TI Evaluation of the spa therapy in Ataturk Balneotherapy and Rehabilitation center
SO PHYSIKALISCHE MEDIZIN REHABILITATIONSMEDIZIN KURORTMEDIZIN
LA English
DT Article
DE Balneotherapy; spa therapy; thermal water
ID controlled trial; rheumatoid-arthritis; exercise program; water exercise; fibromyalgia; bone
AB There are seven randomized, controlled studies made in Ataturk Balneotherapy and Rehabilitation Center (ABRC). In the present writing, we have the objective of making a review of these seven studies reported in international journals. Methods: Spa therapy in thermal water has been applied to patients with osteoarthritis, rheumatoid arthritis, fibromyalgia syndrome, low back pain and osteoporosis with different times of durations and water temperature for each disease. Results and conclusion: These studies show the superiority of the water or water-exercise combination in the improvement of pain and other clinical parameters, to exercise alone.
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10.1055/s-2008-1061917
NR 36
TC 3
Z9 3
U1 0
U2 10
PU GEORG THIEME VERLAG KG
PI STUTTGART
PA Oswald-Hesse-Strasse 50, D-70469 STUTTGART, GERMANY
SN 0940-6689

EI 1439-085X
J9 PHYS MED REHAB KUROR
JI Physik. Med. Rehabilitationsmed. Kurort.
PD DEC 15
PY 2005
VL 15
IS 6
BP 345
EP 354
DI 10.1055/s-2005-867055
PG 10
WC Rehabilitation; Sport Sciences
SC Rehabilitation; Sport Sciences
GA 996HJ
UT WOS:000234164700001
DA 2026-02-10
ER

PT J
AU Barkin, RL
Barkin, SJ
Barkin, DS
AF Barkin, RL
Barkin, SJ
Barkin, DS
TI Perception, assessment, treatment, and management of pain in the elderly
SO CLINICS IN GERIATRIC MEDICINE
LA English
DT Article
ID analgesic efficacy; major depression; double-blind; tramadol; mirtazapine; osteoarthritis; pharmacology; surgery; placebo; safety
AB Twenty to 50% of community elderly suffer from pain. Up to 80% of the institutionalized elderly report at least one pain problem. Multiple pain etiologies that occur in elderly patients may be the occurrence of multiple chronic diseases: osteoarthritis, RA, cancer, DJD, bone/joint disorders, osteoporosis, surgical pain, trauma, neuropathic pain, and nociceptive pain. The incidence of unrelieved pain inhibits respiration, decreases mobility, and decreases their functional status, which may lead to iatrogenic events, which include pneumonia, constipation and deep vein thrombosis. Prolonged inpatient stays and extended care facilities or nursing homes may decrease the elderly patient's expectations of quality of life and initiate social isolation. There exists some roadblocks or barriers to the detection of pain in the elderly client. These include social, emotional, cognitive, and subjective issues with the patient.
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CR Agrawal NGB, 2003, J CLIN PHARMACOL, V43, P268, DOI 10.1177/0091270003251122
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NR 70
TC 61
Z9 71
U1 0
U2 8
PU W B SAUNDERS CO-ELSEVIER INC
PI PHILADELPHIA
PA 1600 JOHN F KENNEDY BOULEVARD, STE 1800, PHILADELPHIA, PA 19103-2899 USA
SN 0749-0690
EI 1879-8853
J9 CLIN GERIATR MED
JI Clin. Geriatr. Med.
PD AUG 15
PY 2005
VL 21
IS 3
BP 465
EP +
DI 10.1016/j.cger.2005.02.006
PG 27
WC Geriatrics & Gerontology
SC Geriatrics & Gerontology
GA 940FE
UT WOS:000230128300002
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ER

PT J
AU Wluka, A
Wang, Y
Davis, SR
Cicuttini, FM
AF Wluka, A
Wang, Y
Davis, SR
Cicuttini, FM
TI Tibial plateau size is related to grade of joint space narrowing and osteophytes in healthy women and in women with osteoarthritis
SO ANNALS OF THE RHEUMATIC DISEASES

LA English
DT Article
ID cartilage volume; osteo-arthritis; knee cartilage; bone-density; iliac crest; hip; osteoporosis; therapy; neck
AB Objective: To determine the relation of bone size to radiographic severity in knee osteoarthritis. Methods: 149 women (81 healthy and 68 with knee osteoarthritis) underwent knee radiography and magnetic resonance imaging on their symptomatic or dominant knee. Tibial plateau bone area was measured at baseline and at follow up. Results: Women with osteoarthritis had larger medial and lateral tibial plateau bone area (mean (SD): 1850 (240) mm(2) and 1279 (220) mm(2), respectively) than healthy women (1670 (200) mm(2) and 1050 (130) mm(2)) (p< 0.001 for both differences). For each increase in grade of osteophyte, an increase in bone area was seen of 146 mm(2) in the medial compartment and 102 mm(2) in the lateral compartment. Similarly, for each increase in grade of joint space narrowing, tibial plateau bone area increased by 160 mm(2) in the medial compartment and 131 mm(2) in the lateral compartment (significance of regression coefficients all p< 0.001). These relations persisted after adjusting for potential confounders, with the exception of the association between grade of medial osteophytes and medial plateau area. Conclusions: With increasing severity of radiographic knee osteoarthritis, tibial plateau size increases. Whether this bone increase plays a role in the pathogenesis of osteoarthritis remains to be determined.
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NR 18
TC 56
Z9 61
U1 0
U2 0
PU ELSEVIER
PI AMSTERDAM
PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
SN 0003-4967
EI 1468-2060
J9 ANN RHEUM DIS
JI Ann. Rheum. Dis.
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IS 7
BP 1033
EP 1037
DI 10.1136/ard.2004.029082
PG 5
WC Rheumatology
SC Rheumatology
GA 935YF
UT WOS:000229818600011
PM 15601742
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ER

PT J
AU Papaloucas, CD
Ward, RJ
Tonkin, CJ
Buckland-Wright, C
AF Papaloucas, CD
Ward, RJ

Tonkin, CJ
Buckland-Wright, C
TI Cancellous bone changes in hip osteoarthritis: a short-term longitudinal study using fractal signature analysis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE osteoarthritis; hip; femoral head; cancellous bone; fractal analysis
ID joint space width; subchondral bone; radiographic assessment; trabecular bone; proximal tibia; macroradiographs; knee; age; osteoporosis; organization
AB Objective: To quantify changes to the trabecular structure in the femoral heads of patients with hip osteoarthritis (OA). Methods: Patients with CA (n = 14; F = 7), mean (standard deviation age) 50.6 (10. 1) years, had macroradiographs at approximately X 4 magnification at baseline and 18 months later using a standardized protocol. Following digitization, computerized measurement was obtained of minimum hip joint space width and fractal signature analysis (FSA) measured longitudinal changes separately in the principal compressive (vertical) and horizontal trabeculae at the region of interest within the centre of the head. Results: The patient group had mean annual rate of joint space narrowing of 0. 14 +/- 0.36 mm/yr. FSA detected no significant changes in horizontal trabeculae, whereas the larger principal compressive (vertical) trabeculae (0.96 mm to 1.02 mm) increased significantly in thickness and the fine to medium trabeculae (0.18 mm to 0.54 mm) decreased significantly in number. Conclusion: The increased thickness of the larger trabeculae within the compressive structural element of the femoral head is a response to the increase in stress associated with an overall loss of trabeculae in this region, suggesting the presence of an osteoporosis within the femoral head in CA patients. (c) 2005 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 42
TC 17
Z9 19
U1 0
U2 4
PU ELSEVIER SCI LTD
PI London
PA 125 London Wall, London, ENGLAND
SN 1063-4584
EI 1522-9653
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD NOV 15
PY 2005
VL 13
IS 11
BP 998
EP 1003
DI 10.1016/j.joca.2005.06.009
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WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 982DX
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PT J
AU Lavigne, P
Benderdour, M
Shi, Q
Lajeunesse, D
Fernandes, JC
AF Lavigne, P
Benderdour, M
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TI Involvement of ICAM-1 in bone metabolism: a potential target in the treatment of bone diseases?
SO EXPERT OPINION ON BIOLOGICAL THERAPY
LA English
DT Review
DE adhesion blockade; bone diseases; ICAM-1; treatment
ID intercellular-adhesion molecule-1; tumor-necrosis-factor; rheumatoid-arthritis; e-selectin; synovial fibroblasts; monoclonal-antibody; leukocyte adhesion; cellular adhesion; human osteoblasts; soluble form
AB Bone diseases such as osteoporosis, osteoarthritis and rheumatoid arthritis (RA) affect a great proportion of individuals, with debilitating consequences in terms of pain and progressive limitation of function. Existing treatment of these pathologies has been unable to alter the natural evolution of the disease and, as such, a clearer understanding of the pathophysiology is necessary in order to generate new treatment alternatives. One therapeutic strategy could involve the targeting of intercellular adhesion molecule-1 (ICAM-1; CD54). In bone, ICAM-1 is expressed at the surface of osteoblasts (Obs) and its counter-receptor, leukocyte function-associated antigen-1 (LFA-1; CD11a), at the surface of osteoclast (Oc) precursors. ICAM-1 blockade between the Ob and the pre-Oc results in an inhibition of Oc recruitment and a modulation of inflammation, which could potentially help in controlling disease activity in bone pathologies. So far, clinical studies on ICAM-1 blockade in bone diseases have been limited to RA. A better understanding of the implication of this adhesion molecule in Ob/Oc interactions and inflammatory mediation in the bone pathological state, however, is needed. As new discoveries on the role of this adhesion molecule are being reported, ICAM-1 could become a potential target for other bone diseases as well.
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10.1002/art.1780391205
NR 75
TC 23
Z9 30
U1 0
U2 1
PU TAYLOR & FRANCIS LTD
PI ABINGDON
PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
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J9 EXPERT OPIN BIOL TH
JI Expert Opin. Biol. Ther.
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WC Biotechnology & Applied Microbiology; Medicine, Research & Experimental
SC Biotechnology & Applied Microbiology; Research & Experimental Medicine
GA 914VW
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PT J
AU Beattie, KA
Boulos, P
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TI The relationships between bone mineral density in the spine, hip, distal femur and proximal tibia and medial minimum joint space width in the knees of healthy females
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE minimum joint space width; knee; bone mineral density; osteoarthritis
ID x-ray absorptiometry; subchondral bone; articular-cartilage; cancellous bone; femoral-head; osteoarthritis; osteoporosis; turnover; incident; women
AB Objective: To investigate the relationships between bone mineral density (BMD) in the hip, spine, distal femur and proximal tibia and minimum joint space width (mJSW) in the knees of healthy women. Methods: Women 22-68 years old without a history of knee pain, bone or joint disease or injury underwent a single, fixed-flexion knee X-ray. Radiographs were graded according to the Kellgren-Lawrence scale and analyzed for mJSW using a computer algorithm. Dual X-ray absorptiometry scans of the spine, hip, distal femur and proximal tibia were also acquired for each participant. Femur and tibia scans were acquired and analyzed using a modified version of the lumbar spine software. Results: Forty-five females, mean [standard deviation (SD)] age and body mass index (BMI) of 40.1 (13.9) years and 24.6 (4.5) kg/m(2), respectively, participated. The mean (SD) mJSW was 4.64 (0.68) mm. Linear regression analyses controlling for age and BMI revealed that BMD in the femoral trochanter and the central two regions of the tibia (T2 and T3) was significantly related to mJSW in the knee. A backwards regression analysis performed to determine which region of interest is most significantly related to mJSW revealed that femoral trochanter BMD (beta-value = 0.416) is the most significant. Conclusions: In contrast to the suggestion that BMD is negatively correlated with mJSW in the knees of osteoarthritic individuals, these results suggest that increasing BMD in the femoral trochanter and tibia is significantly associated with increasing mJSW in healthy females. Further investigation of this relationship is warranted. (c) 2005 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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U1 0
U2 0
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PI London
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
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WC Orthopedics; Rheumatology
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PT J
AU Evans, CH
Ghivizziani, SC
Herndon, JH
Robbins, PD
AF Evans, CH

Ghivizziani, SC
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TI Gene therapy for the treatment of musculoskeletal diseases
SO JOURNAL OF THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS
LA English
DT Article
ID bone-marrow-cells; in-vivo; adenoviral delivery; human joints; stem-cells; osteoarthritis; enhancement; ligament; repair; tissue
AB Research into the orthopaedic applications of gene therapy has resulted in progress toward managing chronic and acute genetic and nongenetic disorders. Gene therapy for arthritis, the original focus of research, has progressed to the initiation of several phase 1 clinical trials. Preliminary findings support the application of gene therapy in the treatment of additional chronic conditions, including osteoporosis and aseptic loosening, as well as musculoskeletal tumors. The most rapid progress is likely to be in tissue repair because it requires neither long-term transgene expression nor closely regulated levels of transgene expression. Moreover, healing probably can be achieved with existing technology. In preclinical studies, genetically modulated stimulation of bone healing has shown impressive results in repairing segmental defects in the long bones and cranium and in improving the success of spinal fusions. An increasing amount of evidence indicates that gene transfer can aid the repair of articular cartilage, menisci, intervertebral disks, ligaments, and tendons. These developments have the potential to transform many areas of musculoskeletal care, leading to treatments that are less invasive, more effective, and less expensive than existing modalities.
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NR 68
TC 49
Z9 53
U1 0

U2 4
PU LIPPINCOTT WILLIAMS & WILKINS
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JI J. Am. Acad. Orthop. Surg.
PD JUL-AUG 15
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WC Orthopedics; Surgery
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PT J
AU Zhu, XH
Gong, H
Gao, BZ
AF Zhu, XH
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Gao, BZ
TI The application of topology optimization on the quantitative description of the external shape of bone structure
SO JOURNAL OF BIOMECHANICS
LA English
DT Article
DE external shape; internal structure; bone functional adaptation; topology optimization; bone
ID remodeling simulations; trabecular bone; stress; strain
AB The aim of this paper was to introduce the idea of topology optimization in engineering to the simulation of bone morphology. The external shape of bone structure was predicted with the quantitative bone functional adaptation theory. The high-order nonlinear equation of bone remodeling proposed by Zhu et al. (J. Biomech. 35(7)(2002)951) combining with the finite element method was adopted

to a rectangular design domain, which occupies a larger space than the external shape of bone structure. It was at this point we imported the idea of topology optimization in engineering. The proximal femur was used here as an example, whose external shape and internal density distribution were simultaneously simulated quantitatively to validate that the external shape of bone structure could be successfully predicted in this way. Then the growth of vertebral body from young to old was simulated numerically in its coronal section to discuss the significance of the prediction of external shape. The study in this paper provides computational basis for further studies on osteophyte formation, osteoporosis, osteoarthritis, bone growth and even bone evolution, etc. (c) 2004 Elsevier Ltd. All rights reserved.
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U1 0
U2 18
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PT J
AU Baron, G
Boutron, I
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Ravaud, P
TI Violation of the intent-to-treat principle and rate of missing data in superiority trials assessing structural outcomes in rheumatic diseases
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID randomized clinical-trials; incident vertebral fractures; methodological quality;

arthritis; osteoporosis; prevalent; articles
AB Objective. To evaluate the methodologic quality of and identify methodologic issues in superiority trials assessing structural outcomes in rheumatic diseases. Methods. We searched Medline and the Cochrane Central Register of Controlled Trials for reports of randomized controlled trials assessing structural outcomes in osteoarthritis (OA), rheumatoid arthritis (RA), and osteoporosis (OP) published between January 1994 and December 2003 in high-impact factor general medical and specialty journals. One reader extracted data (quality assessment, intent-to-treat analysis [ITT analysis], rate of missing data, and methods of handling missing data), using a standardized form. Results. A total of 81 reports were included in the analysis (37 on OP, 34 on RA, and 10 on OA). The mean +/- SD methodologic quality scores on the Jadad scale (possible range 0-5) and the Delphi list (possible range 0-9) were 2.9 +/- 1.2 and 6.4 +/- 1.3, respectively. Although it was reported in 54 articles (66.7%) that the analysis was done on an ITT basis, full ITT analysis was performed in only 6 of the studies (7.4%), modified ITT analysis in 11 (13.6%), and case-complete analysis in 48 (59.3%); the analysis was unclear in 16 articles (19.8%). The rate of missing data on structural outcomes could be determined in only 63 articles (77.8%) and was > 20% in approximately one-third of these reports. Methods for handling missing data on structural outcomes were described in 19 articles (23.5%) and were, in general, inappropriate. Conclusion. Lack of ITT analysis and a high rate of missing data in superiority trials assessing structural outcomes may bias results from such trials. Our recommendations for improving these shortcomings may help researchers plan, analyze, and report the results of such trials.
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Sarzi-Puttini, P
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AF Cimmino, MA
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TI Clinical presentation of osteoarthritis in general practice: Determinants of pain in Italian patients in the AMICA study
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review

DE osteoarthritis; pain; risk factors; general practice
ID of-rheumatology criteria; knee osteoarthritis; classification; hand; prevalence; overweight; women; risk
AB OBJECTIVE To assess the clinical characteristics and determinants of pain observed by general practitioners (GPs) in Italian patients with osteoarthritis (OA) of the hand, hip, and knee. METHODS The 2764 GPs participating in the study were asked to enroll 10 consecutive patients with OA diagnosed according to the American College of Rheumatology (ACR) clinical criteria. To standardize the diagnosis, the GPs received ad hoc training from musculoskeletal system specialists. A questionnaire evaluating demographic data, the clinical characteristics of OA, and previous diagnostic and therapeutic interventions was administered by the GPs. RESULTS 25,589 evaluable patients were enrolled during a mean period of 2.8 weeks by the GPs: 17,567 women (69%) and 7878 men (31 %). The most painful OA joints were the knee in 12,827 patients (54%), the hip in 5645 patients (24%), and the hand in 5467 patients (23%)percentages calculated on the 23,939 patients for whom this information was available. The weekly incidence of referrals to GPs for OA was higher for women and for knee OA. The median age of the patients was 70 years (range 50 to 104 years) and disease duration was 8.3 +/- 7.10 years. The most frequent comorbidities were hypertension (53%), obesity (22%), osteoporosis (21 %), type II diabetes mellitus (15%), and chronic obstructive pulmonary disease (13%). The median pain visual analog scale (VAS) score was higher for women than for men, for hip OA, and for generalized OA (GOA) than for knee and hand OA ($P < 0.0001$). Intense pain, defined as VAS readings of > 60 mm, was increased in women only in the knee (OR = 1.24; 95% CI 1.15 to 1.34) and in GOA (OR = 1.17; 95% CI 1.03 to 1.33). It was also significantly increased in patients older than 70 years (OR = 1.46; 95% CI 1.39 to 1.54), those with a low educational level (OR = 1.44; 95% CI 1.36 to 1.5), a BMI of 2:30 (OR = 1.52; 95% CI 1.42 to 1.61), a disease duration of more than 7 years (OR 1.60; 95% CI 1.52 to 1.68), comorbidities (OR = 1.61; 95% CI 1.5 to 1.73), and GOA (OR 2.05; 95% CI 1.91 to 2.19). Manual occupations were associated with highly intense pain only in men. CONCLUSIONS The results of this study underscore the major impact of OA on care in general practice, the high frequency of OA-associated comorbidities, and the role of different risk factors in OA pain.
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AU Messent, EA
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TI Cancellous bone differences between knees with early, definite and advanced joint space loss; a comparative quantitative macroradiographic study
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE osteoarthritis; knee; subchondral bone; fractal analysis
ID fractal signature analysis; subchondral bone; trabecular bone; osteoarthritic knees; proximal tibia; medial condyle; cortical bone; iliac crest; osteoporosis; texture
AB Objective: To quantify differences in bone structure in the proximal tibia of patients with mild, definite and advanced osteoarthritis (OA) compared to healthy reference tibiae. Design: Patients with medial compartment CA (n = 110; F = 70), mean +/- SD age 61.0 +/- 10.2 years, and non-OA reference subjects (n 27; F= 10)

mean +/- SD age 36.3 +/- 11.4 years had 4 X macroradiographs cligitised by laser scanner. Computer measurement of minimum medial joint space width (JSW) subdivided available CA knees into those with early (JSW 3 mm, n = 70), definite (JSW less than or equal to 3 > 1.5 mm, n = 52) and advanced OA (JSW less than or equal to 1.5 mm, n = 60). Non-OA knees (n = 49) had JSW > 4.5 mm. Fractal Signature Analysis (FSA), a computerised image analysis technique, measured differences in cancellous bone structure between CA and non-OA tibiae at four regions of interest (ROIs). Results: Compared to non-OA, FSA of vertical trabeculae increased significantly (P < 0.05) at most sizes (0.12-1.14 mm) in all CA subgroups and ROIs, with greatest increase occurring in the medial diseased compartment. Compared to early OA, FSA of vertical trabeculae increased significantly (P < 0.05) at most sizes (0.36-1.14 mm) in subchondral and subarticular ROIs in definite and advanced OA. Compared to non-OA, FSA of horizontal trabeculae increased significantly (P < 0.05) at some small sizes in all ROIs and CA subgroups, and decreased significantly (P < 0.05) at large sized horizontal trabeculae (0.60-1.14 mm) in the medial subarticular region in advanced OA. Conclusion: The increase in FSA (consistent with increased trabecular number associated with thinning and fenestration in regions of dense cancellous bone) of most vertical and some horizontal trabeculae confirms that cancellous bone within the proximal tibia of CA patients is osteoporotic. (C) 2004 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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PT J
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TI Subtalar dislocation following ankle arthrodesis: A report of three cases
SO FOOT & ANKLE INTERNATIONAL
LA English
DT Article
AB Ankle arthrodesis is a procedure commonly done to alleviate pain and to correct deformity secondary to arthritis in an attempt to provide patients with a

functional lower extremity. The failures of immobilization and nonoperative management of painful ankle arthrosis have led to the development of operative techniques to decrease pain.(1) Successful arthrodesis has been achieved with a variety of techniques in 65% to 100% of patients.(4) Primary indications for ankle arthrodesis are posttraumatic and primary osteoarthritis, with functionally limiting pain that often is unresponsive to nonoperative management. Rheumatoid arthritis can affect the tibiotalar joint, but ankle pain in these patients more commonly results from subtalar arthritis. Relative contraindications to arthrodesis include peripheral neuropathy, severe osteoporosis, and previous infection. In the presence of peripheral neuropathy, arthrodesis may be required when the deformity is too severe to brace and ulceration has occurred or is imminent. Bracing or casting alone usually fails to relieve symptoms of disabling fixed deformities and instability, especially in patients with neuropathy.(2) Relative contraindications to internal screw fixation include septic arthritis and osteomyelitis. Complications of ankle arthrodesis include nonunion, delayed union, skin breakdown, and malalignment, with or without the development of subsequent subtalar arthrosis.(3) The frequency of failed reconstruction of neuropathic joints of the foot or ankle is approximately 60%: infection and failed arthrodesis are the most frequent contributing factors.(4,5) We are unaware of any description of subtalar dislocation after previous ankle arthrodesis. The purpose of this paper was to describe three patients who progressed to a chronic subtalar dislocation after an ankle arthrodesis. All patients were elderly. One patient had peripheral neuropathy, one had diabetic neuropathy, and one had posterior tibial tendon insufficiency as their presenting diagnoses. All patients required extension of the previous arthrodesis to manage progressive deformity despite attempted bracing with an ankle-foot orthosis. Both patients with neuropathy had recurrent ulceration and progressive deformity.
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TI Effect of spinal degenerative changes on volumetric bone mineral density of the central skeleton as measured by quantitative computed tomography
SO ACTA RADIOLOGICA
LA English
DT Article
DE bone mineral density; dual X-ray absorptiometry; hip; osteoarthritis; spine;

volumetric QCT
ID x-ray absorptiometry; postmenopausal women; rheumatoid-arthritis; osteoporosis; osteoarthritis; fracture; osteophytes; diagnosis; men; ct
AB Purpose: To evaluate the impact of degenerative changes due to osteoarthritis (OA) at the spine on volumetric bone mineral density (BMD) as measured by volumetric quantitative computed tomography (vQCT). Material and Methods: Eighty- four elderly women (mean age 73 +/- 6 years), comprising 33 with vertebral fractures assessed by radiographs and 51 without vertebral fractures, were studied. Trabecular, cortical, and integral BMD were examined at the spine and hip using a helical CT scanner and were compared to dual X- ray absorptiometry (DXA) measurements at the same sites. OA changes visible on the radiographs were categorized into two grades according to severity. Differences in BMD measures obtained in the two groups of patients defined by OA grade using the described radiologic methods were compared using analysis of variance. Standardized difference (effect sizes) was also compared between radiologic methods. Results: Spinal trabecular BMD did not differ significantly between OA grade 0 and OA grade 1. Spinal cortical and integral BMD measures showed statistically significant differences, as did the lumbar spine DXA BMD measurement (13%, P = 0.02). The QCT measurements at the hip were also higher in OA 1 subjects. Femoral trabecular BMD was 13 - 15% higher in OA grade 1 subjects than in OA grade 0 subjects. The cortical BMD measures in the CT_ TOT_ FEM and CT_ TROCH ROI's were also higher in the OA 1 subjects. The integral QCT BMD measures in the hip showed difference between grades OA 1 and 0. The DXA measurements in the neck and trochanter ROI's showed smaller differences (9 and 11%, respectively). There were no statistically significant differences in bone size. Conclusion: There is no evidence supporting that trabecular BMD measurements by QCT are influenced by OA. Instead, degenerative changes have an effect on both cortical and integral QCT, and on DXA at the lumbar spine and the hip. For subjects with established OA, assessment of BMD by volumetric QCT may be suggested.
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PT J
AU Sandini, L
Arokoski, JPA
Jurvelin, JS
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AF Sandini, L
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Kröger, H
TI Increased bone mineral content but not bone mineral density in the hip in surgically treated knee and hip osteoarthritis
SO JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE bone mineral density; bone densitometry; hip; knee; dual energy x-ray absorptiometry; osteoarthritis
ID x-ray absorptiometry; femoral-neck; proximal femur; generalized osteoarthritis; fracture risk; women; osteoporosis; mass; population; rotation
AB Objective. The inverse relationship between the occurrence of osteoarthritis (OA) and osteoporosis is controversial. Some investigators have found higher bone mineral density (BMD) in the hips, lumbar spine, and other skeletal sites of patients with OA; others have not. We investigated the relationship between BMD and OA. Methods. We compared the BMD, bone mineral content (BMC), and projected area of the femoral neck (FN) and trochanter (TR) of 99 women with a validated diagnosis of primary OA from the Kuopio Osteoporosis Risk Factor and Prevention Study (OSTPRE) cohort, with 2012 controls. The measurements were made twice in women aged 47-59 years in 1989-91, and then repeated in 1994-98. Results. After correction for age, body mass index (BMI), menopausal status, and hormone replacement therapy use before inclusion, we found no significant difference in femoral BMD of the OA patients compared with controls at baseline and at 5-year followup (FN +2.7%, +4.6%, respectively; nonsignificant). However, the BMC was

significantly higher in all regions of interest in OA patients at baseline [FN +8.3% (p = 0.004); TR +13.3% (p = 0.017)]. The projected area of FN was also significantly higher at baseline and followup in OA patients (FN +3.7%, +3.9%, respectively; p < 0.001). The projected area of the bones increased in all subjects over the followup period. The BMD decrease rate was higher in OA patients for all regions of interest during followup. Conclusion. Hip BMD of women treated surgically for hip or knee OA was not different from that of healthy controls when measured twice with a 5-year interval. However, at 5-year followup, OA can be accompanied by an increase in bone size or changes in shape, and faster loss of BMD.
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Z9 36
U1 0
U2 0
PU J RHEUMATOL PUBL CO
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WC Rheumatology
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PT J
AU Loeser, RF
Chubinskaya, S
Pacione, C
Im, HJ
AF Loeser, RF
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Im, HJ
TI Basic fibroblast growth factor inhibits the anabolic activity of insulin-like growth factor 1 and osteogenic protein 1 in adult human articular chondrocytes
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID factor-i; proteoglycan synthesis; cartilage explants; factor stimulation; matrix synthesis; synovial-fluid; insulin; osteoarthritis; cultures; receptor
AB Objective. To determine the effects of basic fibroblast growth factor (bFGF) on the chondrocyte anabolic activity promoted by insulin-like growth factor 1 (IGF-1) and osteogenic protein 1 (OP-1). Methods. Human articular chondrocytes were cultured in alginate beads or as cartilage explants in serum-free medium with or without IGF-1 (100 ng/ml), OP-1 (100 ng/ml), or bFGF (0-100 ng/ml). Cell survival, proliferation, proteoglycan synthesis, and total proteoglycan accumulation were. measured after 21 days of culture in alginate beads, and proteoglycan synthesis was measured in explants. Results. Cell survival was not altered by bFGF at any dose, and chondrocyte proliferation was stimulated only at doses above 1 ng/ml. When combined with IGF-1, 1 ng/ml of bFGF stimulated proliferation to 170% of control, but when combined with IGF-1 and OP-1, proliferation increased to 373% of control. Doses of bFGF of 100 ng/ml decreased total proteoglycan levels accumulated per cell by 60% compared with control and also inhibited the ability

of IGF-1 or OP-1 to increase proteoglycan production. Likewise, sulfate incorporation in response to IGF-1 and OP-1 alone or together was completely inhibited by 50 ng/ml bFGF in both alginate and explant cultures. Conclusion. The anabolic activity of IGF-1 and OP-1, alone and in combination, is significantly inhibited by bFGF. The results suggest that excessive release of bFGF from the cartilage matrix during injury, with loading, or in arthritis could contribute to increased proliferation and reduced anabolic activity in articular cartilage.
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NR 35
TC 85
Z9 109
U1 0
U2 3
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
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WC Rheumatology
SC Rheumatology
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PT J
AU Cankurtaran, M
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Halil, M
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AF Cankurtaran, M
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TI General characteristics, clinical features and related factors of osteoporosis in a group of elderly Turkish men
SO AGING CLINICAL AND EXPERIMENTAL RESEARCH
LA English
DT Article
DE elderly; male; osteoporosis; risk factors; Turkey
ID bone-mineral density; quality-of-life; creatinine clearance; fractures; osteoarthritis; interventions; women; risk
AB Background and aims: Osteoporosis is an important problem for men as well as women, but data and trials for male osteoporosis, prevalence, evaluation and prognosis are limited. There are insufficient randomized placebo-con trolled, multicenter trial data. The aim of this study was to determine the frequency of osteoporosis in patients admitted to the Division of Geriatric Medicine of Hacettepe University, to compare osteoporosis in men and women, and to determine risk factors, relations with social and cultural differences, body weight and functional status. Methods: A retrospective study was conducted from February 2002 through July 2003, Participants were 783 female and 464 male patients aged 65 years and over. BMD measures were performed using dual-energy X-ray absorptiometry at femoral neck and lumbar spine. Data on calcium intake, history of fractures, smoking, alcohol habits, other possible risk factors, serum 25OH-Vitamin D and iPTH levels were obtained. Creatinine clearance was calculated with the Cockcroft-Gaut formula. Functional status was evaluated by geriatric evaluation scales. Results: 29.5% of cases of osteoporosis were found in males: 45.9% of male patients had osteoporosis, 36.6% had osteopenia. Risk factors for male osteoporosis were evaluated. Men with low body weight (< 57 kg), BMI <

19, physically inactive, and poorly educated men were significantly more osteoporotic. No relationships between 250H-Vitamin D, iPTH levels. creatinine clearance, quality of life scales or osteoporosis were found. Conclusions: Geriatrists and internists should focus on male as well as female osteoporosis. Nutritional support and physical activity should be encouraged. Age over 65 is identified as a major risk factor. Every man over 65 years of age should undergo BMD testing for osteoporosis screening. (c) 2005, Editrice Kurtis.
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10.1016/0022-3956(82)90033-4
NR 29
TC 8
Z9 11
U1 0
U2 4
PU SPRINGER
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PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
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J9 AGING CLIN EXP RES
JI Aging Clin. Exp. Res.
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WC Geriatrics & Gerontology
SC Geriatrics & Gerontology
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PT J
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Jones, A
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TI CT evaluation of the pattern of odontoid fractures in the elderly - relationship to upper cervical spine osteoarthritis
SO EUROPEAN SPINE JOURNAL
LA English
DT Article
DE fracture; odontoid; geriatrics; atlanto-odontoid joint; osteoarthritis
ID prevalence; joint
AB Odontoid fractures are common in the elderly following minor falls. Almost all of them have osteoarthritis of the cervical spine below the axis vertebra. As a result, there is increased stress on the spared upper cervical spine, resulting in a higher incidence of injuries. As movement in the upper cervical spine involves participation of five joints, degeneration in any one particular joint may affect the biomechanics of loading of the upper cervical spine. We aimed to analyse the relationship of odontoid fractures to the pattern of upper cervical spine osteoarthritis in the elderly. We studied the CT-scan images of the cervical spine in 23 patients who were over the age of 70 years and had odontoid fractures. In each patient, the type of odontoid fracture and the characteristics of the degenerative changes in each joint were analysed. Twenty-one of 23 patients had Type -II odontoid fractures. The incidence of significant atlanto-odontoid degeneration in these individuals was very high (90.48%), with relative sparing of the lateral atlantoaxial joints. Osteoporosis was found in 13 of 23 patients at the dens-body junction and in seven of 23 patients at the odontoid process and body of the axis. With ageing, progressively more severe degenerative changes develop in the atlanto-odontoid joint. These eventually obliterate the joint space and fix the odontoid to the anterior arch of the atlas. In contrast, the lateral atlantoaxial joints are hardly affected by osteoarthritis. Thus, ultimately, atlantoaxial movements including atlantoaxial rotation are markedly limited by osteoarthritis of the atlanto-odontoid joint. However, there is still potential for movement in the lateral atlantoaxial joints, as they remain relatively free of degenerative change. The vulnerability of the atlantoaxial segment is further increased by markedly limited rotation below the axis vertebra due to severe facet-joint degeneration. As a consequence, a relatively low-energy trauma to the lateral part of the face, for instance by a fall, will induce forced atlantoaxial rotation. This, with the marked limitation of movement at the atlanto-odontoid joint, will produce a torque force at the base of the odontoid process leading to a Type II fracture.
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Zapletal J, 1997, SPINE, V22, P2511, DOI 10.1097/00007632-199711010-00009
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Z9 89
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PI NEW YORK
PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
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J9 EUR SPINE J
JI Eur. Spine J.
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WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
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AU Burgener, M
Arnold, M
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Cabral, D
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Solomon, DH
AF Burgener, M
Arnold, M
Katz, JN
Polinski, JM
Cabral, D
Avorn, J
Solomon, DH
TI Older adults' knowledge and beliefs about osteoporosis: Results of semistructured interviews used for the development of educational materials
SO JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE osteoporosis; awareness; education; prevention
ID womens knowledge
AB Objective. Although osteoporosis and associated fractures have been recognized as a significant public health problem, underdiagnosis and undertreatment are common. We investigated older adults' knowledge and beliefs regarding osteoporosis and its prevention, in order to develop effective osteoporosis health education messages and materials. These messages will be used as part of a trial that will test the efficacy of both public and doctor education to improve osteoporosis management. Methods. We conducted semistructured one-on-one interviews with 15 older adult volunteers. A standard interview guide was developed and used for all interviews, which were audiotaped and transcribed. Key themes were extrapolated by 3 study staff using data abstraction forms. The data forms were then compared for consistency. Results. We found that the term "osteoporosis" was well recognized, but many participants had only a fragmented understanding of its meaning. All participants identified osteoporosis as a serious condition, but many did not perceive themselves to be at personal risk for developing the condition. Many participants were confused about the difference between osteoporosis and osteoarthritis. Participants expressed reservations about taking prescription medications because of concerns over cost, side effects, and

interactions with their current medications. Conclusion. Osteoporosis awareness is high, but the older adults interviewed had an incomplete understanding of the condition. This could hinder efforts to improve prevention and treatment of osteoporosis.
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TI Long-term periarticular bone adaptation in a feline knee injury model for post-traumatic experimental osteoarthritis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE osteoarthritis; post-traumatic injury; micro-computed tomography; feline; knee
ID anterior cruciate ligament; meniscectomized guinea-pig; subchondral bone; articular-cartilage; cancellous bone; trabecular bone; transection; kinematics; dogs; osteoporosis
AB Objectives: This study investigates the long-term changes of the periarticular bone, including cancellous bone and the subchondral plate, in an anterior cruciate ligament (ACL)-transected cat for post-traumatic osteoarthritis (OA). These periarticular bone changes are related to the health of all knee tissues including articular cartilage degeneration and may be a key component of osteoarthritic

development. Methods: Thirteen cats (mean mass 4.9 +/- 1.9 kg) were divided into three experimental groups: (1) normal controls, (2) 16 week, and (3) 5 year post unilateral ACL-transection (ACLT). Micro-computed tomography was used to scan the three-dimensional (3D) bone architecture of the proximal tibia, and analysis was performed on the subchondral plate and cancellous bone in the epiphyseal and metaphyseal regions of each bone. Results: A decrease in cancellous bone mass (BV/TV) and subchondral plate thickness (Ct.Th) was observed 16 week post-ACLT, and the trend was statistically significant for the long-term animals (> 5 year post-ACLT: BV/TV decreased 16.8%, $P < 0.003$; Ct.Th decreased 36.8%, $P < 0.03$). A decrease in bone mass was also observed as a function of animal age by comparing the young and aged normal control animals, however ACLT intensified those changes, particularly Ct.Th ($P < 0.009$) and anisotropy ($P < 0.045$). It was speculated that decreased internal joint loading despite normal kinematics may play an important role in the long-term reduction of cancellous bone volume and subchondral plate thinning. Conclusions: The periarticular bone changes measured in this study were concurrent with articular cartilage degeneration, and suggest that bone may be a contributing factor in the aetiology of post-traumatic OA development. (c) 2004 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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TI Comorbid conditions in the AMICA study patients: Effects on the quality of life and drug prescriptions by general practitioners and specialists
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE osteoarthritis; comorbidity; quality of life; coprescriptions
ID nonsteroidal antiinflammatory drugs; rheumatology criteria; blood-pressure; risk-factors; osteoarthritis; health; knee; classification; disability; celecoxib
AB OBJECTIVE Osteoarthritis (OA) has been identified as the disease with the

highest rate of comorbidities, which may increase the likelihood of disability. The AMICA study evaluated how the presence of a coexistent disease and/or its chronic pharmacological treatment influenced the prescription of pharmacological and nonpharmacological therapy in patients with OA. PATIENTS AND METHODS The 2764 general practitioners (GPs) and 316 specialists (98 rheumatologists, 166 orthopedic surgeons, 52 physical medicine specialists) participating in the study were asked to enroll 10 consecutive patients with OA diagnosed according to the American College of Rheumatology clinical criteria. Information was collected regarding demographics, the clinical characteristics of OA, and previous diagnostic and therapeutic interventions. Pain intensity was assessed using a 100-mm visual analog scale WAS); the patients were also asked to report on their quality of life and joint function, as well as the presence of any concomitant disease and/or therapy. The influence of comorbidities on the quality of life, pain, and drug prescription was evaluated. RESULTS A total of 29,132 evaluable patients was observed (25,589 recruited by GPs and 3543 by specialists). The most frequent comorbidities were hypertension (52%), osteoporosis (21%), type II diabetes mellitus (15%), and chronic obstructive pulmonary disease (12%); myocardial infarction and/or angina pectoris were present in 6% and peptic ulcer was present in 5%. Comorbidities were more frequent in older patients and, except in the case of hypertension, were closely related to more intense pain and a decreased quality of life; they were also generally associated with worsened joint function. The presence of peptic ulcer was associated with a reduction in the prescription of nonsteroidal antiinflammatory drugs (NSAIDs) (odds ratio (OR) 0.61; confidence intervals (CD 0.53 to 0.69) and the more frequent use of Coxibs (OR 1.15; Cl 1.03 to 1.28) and simple analgesics (OR 1.42; Cl 1.26 to 1.61), as well as with greater use of physical therapy. Hypertension was associated with a reduction in the prescription of physical therapy. NSAIDs and Coxibs were less frequently prescribed if the patients were on anticoagulant therapy (NSAIDs: OR 0.86; Cl 0.70 to 1.06; Coxibs: OR 0.77; Cl 0.64 to 0.93). Gastroprotective therapy was more frequently used in patients treated with NSAIDs, Coxibs, and analgesics, with GPs giving greater preference to proton pump inhibitors than specialists. CONCLUSIONS Comorbidities decrease the quality of life and worsen the joint function in OA patients. Comorbidities and their treatment generally do not influence the physician's choice of OA treatment, with the exception of peptic ulcer and anticoagulant therapy, both of which were associated with a reduction in the prescription of antiinflammatory drugs. There was a preferential use of Coxibs in patients with peptic ulcer, and an underuse of gastroprotective measures in OA patients treated with NSAIDs.

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TI Factors associated with the lumbar spine and proximal femur bone mineral density in older men
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE bone densitometry population studies; epidemiology; men; osteoporosis
ID hip fracture; risk-factors; elderly-men; osteoporotic fractures; rancho-bernardo; prostate-cancer; calcium intake; white women; health; depression
AB Bone mass is a major determinant of fracture, but there have been few comprehensive studies of the correlates of bone mineral density (BMD) in older men. The objective of the current cross-sectional analysis was to determine the factors associated with BMD of the lumbar spine and proximal femur in a large population-based sample of older men enrolled in The Osteoporotic Fractures in Men Study, "Mr.OS." We enrolled 5,995 men 65 years of age or older, 89% Caucasian, in Mr.OS at six US clinical centers. Demographic, medical and family history and lifestyle information was obtained by interview and physical function and anthropometric data by examination. Spine and hip BMD was measured using dual-energy X-ray absorptimetry. The multivariable linear regression models predicted 19 and 10% of the overall variance in BMD of the femoral neck and spine, respectively. African-American men had 6 to 11% higher BMD than Caucasian men independent of multiple factors. Hip BMD declined with advancing age, while spine BMD increased. Body weight (per 10 kg) and self report of diabetes were each associated with 2 to 4% higher BMD, while history of a

non-trauma fracture and current use of selective serotonin reuptake inhibitors, but not other antidepressants, were associated with at least 4% lower BMD. Both maternal and paternal histories of fracture were associated with 1.4-1.7% lower BMD. Osteoarthritis, physical activity, grip strength, alcohol intake, and dietary calcium were positively related to BMD, while a history of chronic lung disease, prostate cancer, and kidney stones was associated with lower BMD. Smoking, caffeine intake, and thiazide diuretics were not related to BMD in older men. A number of lifestyle and behavioral characteristics and medical conditions were associated with BMD in older men. Identification of these correlates could improve methods to identify men at risk for fracture and improve our understanding of fracture etiology.
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2000, 1900, P1, V0, P0
NR 60
TC 197
Z9 232
U1 0
U2 13
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD DEC 15
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 993YZ
UT WOS:000233997600009
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PT J
AU Messent, EA
Buckland-Wright, JC
Blake, GM
AF Messent, EA
Buckland-Wright, JC
Blake, GM
TI Fractal analysis of trabecular bone in knee osteoarthritis (OA) is a more sensitive marker of disease status than bone mineral density (BMD)
SO CALCIFIED TISSUE INTERNATIONAL
LA English
DT Article
DE knee osteoarthritis; trabecular bone; fractal analysis; BMD
ID subchondral bone; proximal tibia; biomechanical property; articular-cartilage; radiographic assessment; signature analysis; texture analysis; osteoporosis; macroradiographs; organization
AB The purpose of this study was to determine whether fractal analysis (FSA) of macroradiographs or bone mineral density (BMD) is more sensitive in detecting disease-related cancellous bone alterations in knee osteoarthritis (OA). Differences in BNID between I I OA (6 females) and 11 non-OA reference (7 females) tibiae were compared with differences in trabecular organization measured by computerized method of fractal signature analysis (FSA) of digitized macroradiographs (x3.5 to x5). OA knees had anatomic and radiographic evidence of medial compartment disease. FSA measured cancellous bone organization at 4 regions of interest (ROI): medial and lateral subchondral (Sc) and subarticular (Sa) sites, dual X-ray absorptiometry (DXA) measured BMD at the same ROIs. Compared to non-OA, OA tibiae had significant increase ($P < 0.05$) in FSA of vertical trabeculae in the medial Sa region (trabecular size range: 0.42-0.54; 0.90-1.98 mm) and significant decrease ($P < 0.05$) in FSA for some horizontal trabeculae in the Sc region (trabecular size range: medial side 0.12-0.18 mm; lateral side 0.12-0.24 mm). Compared to non-OA, BMD of OA tibiae was not significantly different at any ROI. BMD was not sensitive to changes in trabecular organization detected by FSA. The increase in FSA of vertical trabeculae in the medial Sa region was consistent with trabecular fenestration and thinning, which may have been detected as decreased

BMD in a larger sample. For studies involving small sample sizes, quantifying changes in trabecular organization is more sensitive than BMD for detecting bone alterations in knee OA.
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NR 48
TC 46
Z9 54
U1 0
U2 3
PU SPRINGER
PI NEW YORK
PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
SN 0171-967X
EI 1432-0827
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JI Calcif. Tissue Int.
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BP 419
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 942VB
UT WOS:000230309900004
PM 15834503
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PT J
AU Berger, CE
Kröner, A
Kristen, KH
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Leitha, T
Engel, A
AF Berger, CE
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Kristen, KH
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Engel, A
TI Spontaneous osteonecrosis of the knee: biochemical markers of bone turnover and pathohistology
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE biochemical marker; bone turnover; osteonecrosis; knee
ID collagen c-telopeptide; marrow edema syndrome; synovial-fluid; transient osteoporosis; metabolism; cartilage; disease; serum; osteoarthritis
AB Objective: The aim of this study was to evaluate bone metabolism in patients with spontaneous osteonecrosis (ON) of the medial femoral condyle. Method: In 22 consecutive patients, undergoing total knee arthroplasty, biochemical markers of bone metabolism were measured in aspirates from cancellous bone and in samples obtained simultaneously from peripheral blood. Specimens of the medial femoral condyle were available for histologic examination and the lesion size, assessed on radiographs, was compared with the results from bone turnover measurements. Twenty patients with osteoarthritis (OA) of the knee served as a control.

Bone-specific alkaline phosphatase (bone ALP), osteocalcin (OC), procollagen type I N-terminal propeptide (PINP), and C-terminal cross-linking telopeptide (ICTP) were studied. Results: Mean serum levels of analytes were not different in patients with ON and OA. The serum concentrations averaged 16.2 vs 13.3 ng/mL (OC), 10.2 vs 12.1 ng/mL (bone ALP), 4.6 vs; 4.1 ng/mL (ICTP), and 33.2 vs 40.4 ng/mL (PINP) in patients with ON and OA, respectively. In samples obtained from cancellous bone, mean concentrations of all markers were elevated significantly when compared to serum levels. The mean marker concentrations in samples obtained from cancellous bone were 33.8 vs 43.3 ng/mL (OC), 34.6 vs 37.3 ng/mL (bone ALP), 64.8 vs 36.1 ng/mL (ICTP, P=0.02), and 208.0 vs 176.2 ng/mL (PINP) in patients with ON and OA, respectively. The lesion size was at mean 440.5 +/- 275.8 mm(2) in knees with ON and did not correlate with either serum or bone concentrations of all markers tested (P>0.1). Conclusion: The marked elevation of markers in samples obtained from cancellous bone pointed at increased turnover in both diseases when compared to healthy individuals. In line with histologic findings of necrosis of subchondral bone, focal degradation of collagen type I was more pronounced in knees with ON. Mean serum concentrations of all markers, however, were not different from healthy individuals and thus did not provide any useful clue in the diagnosis spontaneous ON. (C) 2005 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 32
TC 17
Z9 20
U1 0
U2 4
PU ELSEVIER SCI LTD
PI London
PA 125 London Wall, London, ENGLAND
SN 1063-4584
EI 1522-9653
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD AUG 15
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BP 716
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WC Orthopedics; Rheumatology

SC Orthopedics; Rheumatology
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ER

PT J
AU Adami, S
Pavelka, K
Cline, GA
Hosterman, MA
Barton, IP
Cohen, SB
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AF Adami, S
Pavelka, K
Cline, GA
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Barton, IP
Cohen, SB
Bensen, WG
TI Upper gastrointestinal tract safety of daily oral risedronate in patients taking NSAIDs: A randomized, double-blind, placebo-controlled trial
SO MAYO CLINIC PROCEEDINGS
LA English
DT Article
ID postmenopausal osteoporosis; alendronate; women; tolerability; fractures; efficacy
AB OBJECTIVE: To evaluate the frequency of upper gastrointestinal (GI) tract adverse events associated with risedronate during two (2-year) randomized, double-blind, parallel-group, placebo-controlled studies. PATIENTS AND METHODS: Male and female patients aged 40 to 80 years with mild to moderate medial-compartment knee osteoarthritis were enrolled. Data were pooled and analyzed for risedronate at 5 mg and at 15 mg once daily and compared with placebo. The results of the once-weekly dosages (35 or 50 mg) were assessed separately. RESULTS: A total of 2483 patients were randomized: 622 to placebo, 628 to risedronate at 5 mg/d, 609 to risedronate at 15 mg/d, 310 to risedronate at 35 mg once weekly, and 314 to risedronate at 50 mg once weekly. During the study, 77% of patients were regular nonsteroidal anti-inflammatory drug (NSAID) and/or analgesic users (defined as those who took medication >= 3 days per week), and 68% were regular NSAID users. The number of upper GI tract adverse events was similar between treatment groups, with no dose-related response: 161 for placebo, 176 for risedronate at 5 mg/d, and 150 for risedronate at 15 mg/d. The time to the

first upper GI tract adverse event was similar between treatment groups. There was no difference in the frequency of upper GI tract adverse events in risedronate-treated patients compared with patients who were regular users of NSAIDs or NSAIDs and/or analgesics. Findings were similar for those in the once-weekly risedronate groups. CONCLUSION: The results of this study show that risedronate regimens at 5 mg/d or 15 mg/d as well as once weekly at 35 mg or 50 mg are not associated with an increased frequency of upper GI tract adverse events, even in patients who have an increased risk for such events.
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NR 20
TC 7
Z9 7
U1 0
U2 1
PU MAYO CLINIC PROCEEDINGS
PI ROCHESTER
PA 660 SIEBENS BLDG MAYO CLINIC, ROCHESTER, MN 55905 USA
SN 0025-6196
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J9 MAYO CLIN PROC
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BP 1278
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WC Medicine, General & Internal
SC General & Internal Medicine
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UT WOS:000232250300005
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PT J
AU Lu, T
Achari, Y
Sciore, P
Hart, DA
AF Lu, Ting
Achari, Yamini
Sciore, Paul
Hart, D. A.
TI Estrogen receptor alpha regulates matrix metalloproteinase-13 promoter activity primarily through the AP-1 transcriptional regulatory site
SO BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR BASIS OF DISEASE
LA English

DT Article
DE OA; MMP-13; ER-alpha; estrogenic ligand; AP-1 site; regulation
ID anterior cruciate ligament; rat collagenase-3 promoter; activator protein-1; osteoarthritis development; replacement therapy; articular-cartilage; endometrial cancer; connective tissue; lapine menisci; knee cartilage
AB Many females develop bone diseases such as osteoporosis, and joint diseases such as osteoarthritis after menopause when estrogen levels decline. As estrogen receptors (ER) are present in such tissues, it is possible that the loss of estrogen at menopause influences the expression of enzymes such as members of the MMP family of proteinases to affect bone and connective tissue metabolism. The present study was undertaken to assess a possible relationship between ER-alpha and MMP-13 expression at the promoter level, and to determine how such a relationship could be modulated by ligands such as estrogen. Using a rabbit synovial cell line lacking endogenous ER, a transient transfection system with an ER-a construct, and a series of MMP-13 promoter-luciferase constructs of varying lengths and with specific mutations in transcription factor binding sites, it was found that ER-alpha can significantly enhance MMP-13 promoter activity via the AP-1 site, with modulatory influences by the Runx and PEA-3 sites on this ER-alpha dependent enhancement of the promoter activity. This enhancement by ER-alpha was significantly depressed in the presence of 17-beta-estradiol in a dose dependent manner. The influence of tamoxifen and raloxifen on the activity of the ER-alpha was consistent with their known agonist/antagonist activity. These findings indicate that loss of estrogen in vivo could potentially lead to enhanced expression of MMP-13, a proteinase that has been implicated in both osteoporosis and osteoarthritis, and thus contribute to the development and progression of these conditions. (c) 2006 Elsevier B.V. All rights reserved.
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NR 55
TC 42
Z9 51
U1 0
U2 1
PU ELSEVIER SCIENCE BV
PI AMSTERDAM
PA PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
SN 0925-4439
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J9 BBA-MOL BASIS DIS
JI Biochim. Biophys. Acta-Mol. Basis Dis.
PD AUG 15
PY 2006
VL 1762
IS 8
BP 719
EP 731
DI 10.1016/j.bbadis.2006.06.007
PG 13
WC Biochemistry & Molecular Biology; Biophysics; Cell Biology
SC Biochemistry & Molecular Biology; Biophysics; Cell Biology
GA 088OV
UT WOS:000240821900002
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ER

PT J
AU Richards, JB
Joseph, L
Schwartzman, K
Kreiger, N
Tenenhouse, A
Goltzman, D
AF Richards, J. B.
Joseph, L.
Schwartzman, K.
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Tenenhouse, A.
Goltzman, D.
TI The effect of cyclooxygenase-2 inhibitors on bone mineral density: results from the Canadian Multicentre Osteoporosis Study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE bone mineral density; cyclooxygenase-2 inhibitors; inflammation; osteoporosis
ID nonsteroidal antiinflammatory drugs; prostaglandin g/h synthase-2; randomized controlled-trial; postmenopausal women; clinical-trial; fracture risk; older women; cells; osteoarthritis; aspirin
AB Introduction The use of cyclooxygenase-2 (COX-2) inhibitors has been demonstrated to not only impair load-induced bone formation but also prevent menopause-associated bone loss. We hypothesized that COX-2 inhibitor use would be associated with increased bone mineral density (BMD) in postmenopausal women not using estrogen therapy and, conversely, with decreased BMD in men. Methods The Canadian Multicentre Osteoporosis Study is a longitudinal, randomly selected, population-based community cohort. We present data from men (n=2,004) and postmenopausal women age 65 and older (n=2,776) who underwent a BMD measurement and structured interview in the 5th year of the study. The outcome measure was percent difference in BMD (g/cm(2)). Results Daily COX-2 inhibitor use was reported by 394 subjects. In men, daily use of COX-2 inhibitors was associated with a lower BMD at all hip sites, with a percent difference of -3.1% [95% confidence interval (CI), -6.0, -0.3] between users and nonusers at total hip. In postmenopausal women not using estrogen replacement therapy, daily COX-2 inhibitor use was associated with higher BMD at most sites [percent difference at total hip: +3.0% (95% CI, 0.3, 5.8)]. These effects appeared to be dose-dependent. Conclusion COX-2 inhibitor use was associated with a lower BMD in men and, on the other hand, with a higher BMD in postmenopausal women not using estrogen replacement therapy. Men who have used COX-2 inhibitors may wish to seek BMD measurement to assess their fracture risk. However, COX-2 inhibitors may have utility in postmenopausal women if bone-selective analogs can be developed.
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NR 39
TC 38
Z9 46
U1 0
U2 3
PU SPRINGER LONDON LTD
PI GODALMING
PA SWEETAPPLE HOUSE CATTESHALL ROAD, GODALMING GU7 3DJ, SURREY, ENGLAND
SN 0937-941X
EI
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD SEP 15
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IS 9
BP 1410
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DI 10.1007/s00198-006-0142-x
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Levy, D
Fogelman, E
Itzhak, Y
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Cowling, WA
AF Levy, D.
Fogelman, E.
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Ma, Q.
Turner, D. W.
Cowling, W. A.
TI Osmotic adjustment in leaves of Brassica oilseeds in response to water deficit
SO CANADIAN JOURNAL OF PLANT SCIENCE
LA English
DT Article
DE Brassica oilseeds; drought stress; osmotic adjustment; haploid lines
ID comparative adaptation; juncea; napus; tolerance; osmoregulation; accumulation; reagent; solute; sugar; yield
AB The influence of water deficit on water content (WC), total soluble solids (TSS), osmotic potential (OP), sugar content and osmotic adjustment (OA) of expanded and partly expanded leaves of Brassica oilseeds was examined. Nine canola (B. napus) cultivars (Karoo, Monty, Pinnacle, Hyden, Mystic, Rainbow, Surpass 300, Surpass 400, Surpass 501), two doubled haploids, one from Karoo (KDH) and the other from Monty (MDH) and one line of Indian mustard (B. juncea, PI-81792) were grown under glasshouse and net-house conditions. Expanded wilted leaves of Karoo and Monty absorbed excessive amounts of water per dry weight upon in vitro rehydration compared with control non-stressed leaves, resulting in underestimation of OA calculated on the basis of the relative water content (RWC). Hence, estimation of OA based on water weight per leaf dry weight (WC) was preferred. Young expanding leaves maintained visual turgor for 6-7 d after withholding irrigation, while expanded leaves on the same plants ceased to regain turgor overnight. The young expanding leaves exhibited greater accumulation of TSS and, consequently, more negative OPs compared with expanded leaves. Maintenance of OA after irrigation and turgor recovery was evident in both expanded and expanding leaves. Although OA under drought and upon turgor recovery varied within cultivars in different experiments, outstanding OA capacity, in terms of both magnitude and stability, was identified in the cultivar Hyden and in the doubled haploid of Monty, indicating the potential to select for this trait as

well as to exploit variability for OA through haploidization.
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NR 21
TC 5
Z9 8
U1 1
U2 8
PU AGRICULTURAL INST CANADA
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JI Can. J. Plant Sci.
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WC Agronomy; Plant Sciences
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ER

PT J
AU Hopman, WM
Towheed, TE
Gao, Y
Berger, C
Joseph, L
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Carran, J
Anastassiades, T
AF Hopman, W. M.
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Berger, C.
Joseph, L.
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Hanley, D. A.
Carran, J.
Anastassiades, T.
TI Prevalence of and factors associated with glucosamine use in Canada
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE glucosamine; complementary and alternative medicine; CAMs; prevalence
ID nutritional supplements; alternative medicine; knee osteoarthritis; complementary; arthritis; disease
AB Objective: Glucosamine is commonly used for the treatment of osteoarthritis,

and its use is increasing in the general population. The Canadian Multicentre Osteoporosis Study (CaMos) provided an opportunity to examine the prevalence of glucosamine use across age and gender groups, and to assess the factors associated with its use. Method, CaMos is a random, population-based sample of 9423 Canadians. Baseline assessments took place in 1996-1997 and the 5-year follow-up assessments in 2001-2002. The primary outcome of this analysis was glucosamine use at year 5. Prevalence estimates were age- and sex-standardized to the Canadian population. A number of factors potentially associated with glucosamine use were identified from the literature. Multivariable logistic regression was used to identify variables associated with glucosamine use. Results: At 5 years, complete data were available for 7652 of the original 9423 participants (81.2%). For men, glucosamine use increased from 0.9% to 4.7% (weighted values), and for women, it increased from 1.3% to 8.2%. Glucosamine use was higher among older participants, those living in western Canada, and those with arthritis, back pain, higher calcium intake from supplements, physical activity and prior glucosamine use. Conclusions: Glucosamine use increased substantially over 5 years, and its use is associated with a number of factors. Some may use glucosamine to manage pain and symptoms of arthritis and back pain, while others use it as a preventive measure to maintain health. (C) 2006 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 20
TC 15
Z9 15
U1 0
U2 3
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584
EI 1522-9653
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD DEC 15
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IS 12
BP 1288
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DI 10.1016/j.joca.2006.06.003
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WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 116LV
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ER

PT J
AU Hellström, HO
Mjöberg, B
Mallmin, H
Michaëlsson, K
AF Hellstrom, Hans-Olov
Mjoberg, Bengt
Mallmin, Hans
Michaelsson, Karl
TI No association between the aluminium content of trabecular bone and bone density, mass or size of the proximal femur in elderly men and women
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
ID genetic-determinants; alzheimers-disease; dialysis encephalopathy; parenteral solutions; mineral density; hip-fractures; absorption; osteodystrophy; heritability; impact
AB Background: Aluminium is considered a bone toxic metal since poisoning can lead to aluminium-induced bone disease in patients with chronic renal failure. Healthy subjects with normal renal function retain 4% of the aluminium consumed. They might thus also accumulate aluminium and eventually be at risk of long-term low-grade aluminium intoxication that can affect bone health. Methods: We therefore examined 62 patients with femoral neck fractures or osteoarthritis of the hip (age range 38-93), with the aim of examining whether aluminium in bone is associated with bone-mineral density (BMD), content (BMC) or width of the femoral neck measured by dual-energy X-ray absorptiometry (DXA). During operations bone biopsies were taken from the trabecular bone of the proximal femur. The samples were measured for their content of aluminium using a mass spectrometer. Results: No significant association between the aluminium content in bone and femoral neck BMD, BMC or width could be found after multivariate adjustment. Conclusion: Our results indicate that the accumulated aluminium content in bone during life does not substantially influence the extent of osteoporosis.
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TI Exercise self-efficacy, exercise benefits and barriers, and commitment to a plan for exercise among Korean women with osteoporosis and osteoarthritis
SO INTERNATIONAL JOURNAL OF NURSING STUDIES
LA English
DT Article
DE exercise; Korean; women osteoporosis; osteoarthritis
ID psychometric evaluation; physical-activity; health-promotion; risk-factors; adults; prevention; scale; falls; hip
AB This study compared perceived exercise self-efficacy, exercise benefits, exercise barriers, and commitment to a plan for exercise between Korean women with a diagnosis of either osteoporosis or osteoarthritis. The influence of exercise self-efficacy, exercise benefits and barriers on commitment to a plan for exercise was also assessed in each group. Participants in the study were 154 Korean women over 40 years of age who were recruited from hospitals, health centers or a nursing home. The two groups differed on commitment to a plan for exercise with commitment greater among women with osteoporosis. Exercise self-efficacy was the most influential variable on commitment to a plan for exercise accounting for 27% of the variance in commitment among osteoporosis patients and 53% of the variance among osteoarthritis patients. This study generated information relevant to tailoring exercise interventions to the differing needs and perceptions of Korean women with osteoporosis and osteoarthritis. (c) 2004 Elsevier Ltd. All rights reserved.
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TI Epidemiology of osteoporosis in rheumatic diseases
SO RHEUMATIC DISEASE CLINICS OF NORTH AMERICA
LA English
DT Review
ID bone-mineral density; systemic-lupus-erythematosus; low-dose prednisone; complicating ankylosing-spondylitis; population-based cohort; premenopausal women; follow-up; vertebral deformity; psoriatic-arthritis; elderly-men
AB Osteoporosis and related fragility fractures represent one of the most common complications that occurs in patients who have rheumatic diseases, and contributes to a dramatic decrease in quality of life. Bone is affected negatively by the disease process and often by the therapy itself in different rheumatic conditions, notably rheumatoid arthritis (RA), and the relationship between osteoporosis and osteoarthritis is a matter of concern. The clinical relevance of osteoporosis in rheumatic diseases is underestimated. Recent data demonstrated that patients who had RA and took oral corticosteroids did not undergo bone densitometry routinely. This article focuses on the burden of osteoporosis and fragility fractures in different rheumatic conditions, and emphasizes the importance of this complication for which effective preventive measures are available.
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NR 144
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Z9 98
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U2 3
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WC Rheumatology
SC Rheumatology
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AU Baheiraei, A
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AF Baheiraei, A
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TI Exploring factors influencing osteoporosis prevention and control: A qualitative study of Iranian men and women in Australia
SO MATURITAS
LA English
DT Article
DE osteoporosis; qualitative study; prevention
ID bone-mineral density; immigrant women; american women; health; knowledge; fractures; community; beliefs; smoking; behaviors
AB Objective: To explore the understanding of osteoporosis risk factors and barriers that influence osteoporosis prevention and control in order to better inform the development of culturally appropriate osteoporosis preventive strategies. Methods: This qualitative study was based on data collected from 5 focus groups, 10 individual interviews and 3 opportunistic group discussions of Iranian men and women living in Australia. A thematic analysis approach was used and data were managed with a computer-assisted program. Data were collected over I year in community settings chosen by participants. Results: The participants had insufficient understanding of osteoporosis risk factors and its implications for their health as they age. There were minor misconceptions about the causes of the disease and how it could be prevented and controlled. Man), participants confused osteoporosis and osteoarthritis. Where they did indicate some knowledge of preventive actions, they perceived many obstacles to their undertaking preventive behaviours. Conclusions: These data suggest that factors adversely influencing osteoporosis prevention and control have their root in misconceptions about osteoporosis and its risk factors, and psychosocial and structural barriers to taking

preventive actions. These findings provide insights into barriers that need to be overcome if preventive strategies and intervention programs can be developed to reduce the overall burden of osteoporosis in the community. (c) 2005 Elsevier Ireland Ltd. All rights reserved.
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TI Osteogenic protein 1 in synovial fluid from patients with rheumatoid arthritis or osteoarthritis: relationship with disease and levels of hyaluronan and antigenic keratan sulfate
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Article
ID growth-factor-beta; necrosis-factor-alpha; articular-cartilage; serum; expression; matrix; op-1; proteoglycan; interleukin-1; degeneration
AB The measurement of body fluid levels of biochemical markers in joint tissues has begun to provide clinically useful information. Synovial fluid (SF) plays an important role in articular joint lubrication, nutrition, and metabolism of cartilage and other connective tissues within the joint. The purpose of our study was to identify and characterize osteogenic protein 1 (OP-1) in SF from patients with rheumatoid arthritis (RA) or with osteoarthritis (OA) and to correlate levels of OP-1 with those of hyaluronan (HA) and antigenic keratan sulfate (AgKS). SF was aspirated from the knees of patients with either RA or OA and from the knees of asymptomatic organ donors with no documented history of joint disease. The presence of detectable OP-1 in SF was demonstrated by western blots with specific anti-pro-OP-1 and anti-mature OP-1 antibodies. Measurement of levels of OP-1, HA and AgKS was performed using ELISAs. OP-1 was identified in human SF in two forms, pro-OP-1 and active (mature) OP-1-mature OP-1 being detected only in SF from OA patients and RA patients. Levels of OP-1 and HA were higher in RA patients than in OA patients and asymptomatic donors, while the level of AgKS was highest in SF from asymptomatic donors. Statistically significant differences were

found between SF levels of OP-1 in RA and OA patients and between SF levels of AgKS among the three groups tested. The SF content of OP-1 tended to correlate positively with HA levels, but negatively with AgKS concentrations. In conclusion, the results of this study suggest that measurement of OP-1 in joint fluid may have value in the clinical evaluation of joint disease processes.
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FU NIAMS NIH HHS [R01 AR047654, AR 47654, P50 AR039239, 2P50-AR-39239-11]
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TC 27
Z9 34
U1 0
U2 6
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PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
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JI Arthritis Res. Ther.
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AU Bingham, CO
Buckland-Wright, JC
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TI Risedronate decreases biochemical markers of cartilage degradation but does not decrease symptoms or slow radiographic progression in patients with medial compartment osteoarthritis of the knee - Results of the two-year multinational knee osteoarthritis structural arthritis study

SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID joint space width; placebo-controlled trial; bone-mineral density; double-blind; pagets-disease; hip osteoarthritis; efficacy; bisphosphonates; acetaminophen; osteoporosis
AB Objective. Bisphosphonates have slowed the progression of osteoarthritis (OA) in animal models and have decreased pain in states of high bone turnover. The Knee OA Structural Arthritis (KOSTAR) study, which is the largest study to date investigating a potential structure-modifying OA drug, tested the efficacy of risedronate in providing symptom relief and slowing disease progression in patients with knee OA. Methods. The study group comprised 2,483 patients with medial compartment knee OA and 2-4 mm of joint space width (JSW), as determined using fluoroscopically positioned, semiflexed-view radiography. Patients were enrolled in 2 parallel 2-year studies in North America and the European Union. These studies evaluated the efficacy of risedronate at dosages of 5 mg/day, 15 mg/day, 35 mg/week (in Europe), and 50 mg/week (in North America) compared with placebo in reducing signs and symptoms, as measured by the Western Ontario and McMaster Universities Osteoarthritis (WOMAC) index and patient global assessment (PGA) scores, and in slowing radiographic progression. Results. A reduction of similar to 20% in signs and symptoms, as measured by WOMAC subscales and PGA scores, was observed in all groups, with no treatment effect of risedronate demonstrated. Risedronate did not significantly reduce radiographic progression as measured by decreased JSW or using a dichotomous definition of progression (joint space loss of >= 0.6 mm). Thirteen percent of patients receiving placebo demonstrated significant disease progression over 2 years. A dose-dependent reduction in the level of C-terminal crosslinking telopeptide of type H collagen, a cartilage degradation marker associated with progressive OA, was seen in patients who received risedronate. No increase in the number of adverse events was demonstrated for risedronate compared with placebo. Conclusion. Although risedronate (compared with placebo) did not improve signs or symptoms of OA, nor did it alter progression of OA, a reduction in the level of a marker of cartilage degradation was observed. A sustained clinically relevant improvement in signs and symptoms was observed in all treatment and placebo groups.
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NR 62
TC 297
Z9 421
U1 0
U2 6
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0004-3591
EI 1529-0131
J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
PD NOV 15
PY 2006
VL 54
IS 11
BP 3494
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DI 10.1002/art.22160
PG 14
WC Rheumatology
SC Rheumatology
GA 104TH
UT WOS:000241981800016
PM 17075851
DA 2026-02-10
ER

PT J
AU Jin, UH
Kim, KS
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Kim, DS
Chang, YC
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AF Jin, Un-Ho
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Park, Su-Yeon
Chung, Kang-Hyun
Kim, Dong-Soo
Chang, Young-Chae
Kim, Cheorl-Ho
TI Effect of Buthus martensi Karsch on aromatase activity and cytokine-inducded NOS and NO production in osteoblasts and leukaemic cell line FLG 29.1
SO IMMUNOPHARMACOLOGY AND IMMUNOTOXICOLOGY
LA English
DT Article
DE aromatase; Buthus martensi Karsch (BMK); cytokine; IL1 beta; NO; NOS; osteoblast; TNF-alpha
ID nitric-oxide synthase; rheumatoid-arthritis; bone cell; estrogen biosynthesis; functional-role; expression; rat; cultures; growth; venom
AB Among the different scorpion species, Buthus martensi Karsch, a widely distributed scorpion species in Asia especially in Korea, has received a lot of attention. Indeed, over the past decade, more than 70 different peptides, toxins, or homologues have been isolated. It may prove a valuable resource for identifying potential anti-inflammatory and analgesic drugs. The recent observation has suggested that the aromatase is a possible local modulator of bone remodeling in osteoarthritis and osteoporosis. In the present study, therefore, the effect of Buthus martensi Karsch (BMK) extract, traditional immunosuppressive Korean aqua-acupuncture water, on the bone function of human osteoblastic cells was studied. To provide insights into the effect of BMK on aromatase activity in bone-derived cells, we examined the human leukaemic cell line FLG 29.1, which is induced to differentiate toward the osteoclastic phenotype by 12-O-tetradecanoylphorbol-13-acetate (TPA) and transforming growth factor (TGF)-beta 1, and the primary first-passage osteoblastic cells (hOB). Gene expression of the aromatase was not affected by Buthus martensi Karsch in FLG 29.1 and hOB cells. However, enzyme activity was stimulated in a time-dependent fashion by 10.0 mu g/ml BMK and by either 1 50 nM TPA or 0.01-0.5 ng/ml TGF-beta 1, with maximal responses after 2-3 hr exposure. On the other hand, BMK strongly inhibited interleukin-1 beta (IL-1 beta)- and tumor necrosis factor (TNF)alpha-induced Nitricoxide (NO) synthase expression with little effect on constitutive NO synthase expression. BMK extracts (10 mu g/ml) inhibited cytokine-induced iNOS and nNOS expression. BMK (10 mu g/ml) did not affect the ecNOS expression, indicating the extracts are not working on the constitutive NOS expression. BMK strongly inhibited the cytokine- induced NO production ($p < 0.01$). BMK also showed significant inhibition on NO production in both induced by

TNF-alpha+IL-1 beta. NO donors, sodium nitroprusside, and NONOate dose-dependently elevated alkaline phosphatase activity. These results suggest that NO directly facilitates osteoblastic differentiation. This result also suggests that BMK is effective for bone resorptive action in bone cells.
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NR 46
TC 3
Z9 4
U1 0
U2 3
PU TAYLOR & FRANCIS LTD
PI ABINGDON

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SN 0892-3973
EI 1532-2513
J9 IMMUNOPHARM IMMUNOT
JI Immunopharmacol. Immunotoxicol.
PD APR-JUN 15
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VL 28
IS 2
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EP 258
DI 10.1080/08923970600816723
PG 18
WC Immunology; Pharmacology & Pharmacy; Toxicology
SC Immunology; Pharmacology & Pharmacy; Toxicology
GA 070PM
UT WOS:000239535300006
PM 16873093
DA 2026-02-10
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PT J
AU Schneider, DL
Bettencourt, R
Barrett-Connor, E
AF Schneider, Diane L.
Bettencourt, Ricki
Barrett-Connor, Elizabeth
TI Clinical utility of spine bone density in elderly women
SO JOURNAL OF CLINICAL DENSITOMETRY
LA English
DT Article
DE bone mineral density; elderly; osteoporosis; spine osteoarthritis
ID international-society; official positions; osteoporotic fractures; mineral density; osteoarthritis; densitometry; classification; diagnosis; men
AB It is common clinical practice to obtain a bone density measurement at both the hip and spine to evaluate osteoporosis. With aging, degenerative changes in the lumbar spine may elevate the bone mineral density (BMD) results giving false assurances that the fracture risk at the spine is low. We examined the association of spine osteoarthritis and bone mineral density in 1082 community-dwelling ambulatory older women aged 50-96 years who participated in a 1992-1996 osteoporosis research clinic visit. The BMD was measured at the hip and posteroanterior (PA) and lateral lumbar spine using dual energy X-ray absorptiometry (DXA). Spine osteoarthritis was identified on the PA lumbar spine

DXA images by a musculoskeletal radiologist. Forty percent of women had evidence of spine osteoarthritis (OA). Women with spine OA had a mean age of 77.4 yr (95% confidence interval [CI]: 76.5-78.2), were significantly older than women without spine OA (mean age, 66.8 yr; 95% CI: 65.9-67.7), and were more likely to have prevalent radio,graphic fractures (14.2% vs. 9.5%; $p < 0.05$). Age-adjusted BMD at the femoral neck, total hip, PA spine, and lateral spine was significantly higher in women with spine CA. Women with spine OA were more likely to have osteoporosis by the World Health Organization classification at the femoral neck and total hip than those without spine OA, but less likely based on the PA spine (14.4% vs. 24.5%). Despite higher BMD levels, women with CA of the lumbar spine had higher prevalence of osteoporosis at the hip and more radiographic vertebral fractures. In elderly women 65 yr and older who are likely to have spine OA, the DXA measurement of the spine may not be useful in assessing fracture risk, and DXA of the hip is recommended for identification of osteoporosis.
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FU NIA NIH HHS [AG 07181, R37 AG007181, R01 AG007181] Funding Source: Medline
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NR 20
TC 59
Z9 68
U1 0
U2 2
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA
SN 1094-6950
EI
J9 J CLIN DENSITOM
JI J. Clin. Densitom.
PD JUL-SEP 15
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VL 9
IS 3
BP 255
EP 260
DI 10.1016/j.jocd.2006.04.116
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 081MH
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PT J
AU Maxwell, L
Santesso, N
Tugwell, PS
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AF Maxwell, Lara
Santesso, Nancy
Tugwell, Peter S.
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Judd, Maria
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TI Method guidelines for cochrane musculoskeletal group systematic reviews
SO JOURNAL OF RHEUMATOLOGY

LA English
DT Article
DE evidence-based medicine; review literature; metaanalysis; arthritis
ID randomized clinical-trials; short-term improvement; preliminary core set; ankylosing-spondylitis; preliminary definition; rheumatoid-arthritis; lupus-erythematosus; methodological quality; outcome measures; disease-activity
AB The Cochrane Musculoskeletal Group (CMSG), one of 50 groups of the not-for-profit international Cochrane Collaboration, prepares, maintains, and disseminates systematic reviews of treatments for musculoskeletal diseases. To enhance the quality and usability of systematic reviews, the CMSG has developed tailored methodological guidelines for authors of CMSG systematic reviews. Recommendations specific to musculoskeletal disorders are provided for various aspects of undertaking a systematic review, including literature searching, inclusion criteria, quality assessment, grading of evidence, data collection, and data analysis. These guidelines will help researchers design, conduct, and report results of systematic reviews of trials in the following fields of musculoskeletal health: gout, osteoarthritis, osteoporosis, pediatric rheumatology, rheumatoid arthritis, soft tissue rheumatism, spondyloarthropathy, systemic lupus erythematosus, systemic sclerosis, and vasculitis. Systematic reviews need to be conducted according to high methodological standards. These recommendations on developing and performing a systematic review will help improve consistency among CMSG reviews.
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NR 44
TC 90
Z9 98

U1 0
U2 10
PU J RHEUMATOL PUBL CO
PI TORONTO
PA 365 BLOOR ST E, STE 901, TORONTO, ONTARIO M4W 3L4, CANADA
SN 0315-162X
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J9 J RHEUMATOL
JI J. Rheumatol.
PD NOV 15
PY 2006
VL 33
IS 11
BP 2304
EP 2311
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WC Rheumatology
SC Rheumatology
GA 105DX
UT WOS:000242010700033
PM 17086611
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ER

PT J
AU Zoeger, N
Roschger, P
Hofstaetter, JG
Jokubonis, C
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AF Zoeger, N.
Roschger, P.
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Berzlanovich, A.
Osterode, W.
Streli, C.
Wobrauschek, P.
TI Lead accumulation in tidemark of articular cartilage
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE lead accumulation; tidemark; synchrotron micro XRF; calcified cartilage
ID x-ray-fluorescence; human bone; mobilization; zinc; rats; hydroxyapatite; osteoarthritis; mineralization; osteoporosis; osteocalcin
AB Objective: Determination of the spatial distribution of the toxic element lead (Pb) and other trace elements in normal articular cartilage and subchondral bone from adult humans with no history of work-related exposure to Pb. Methods: Four macroscopically normal femoral heads and three patellas were harvested from randomly selected forensic autopsies. All subjects died of acute illnesses, had no history of work-related exposure to Pb and had no metabolic bone disease. The elemental distribution of lead (Pb) together with zinc (Zn), strontium (Sr) and calcium (Ca) in the chondral and subchondral region was detected using high resolution synchrotron radiation induced micro X-ray fluorescence (SR mu-XRF) analysis. SR mu-XRF line scans in conventional and SR mu-XRF area scans in confocal geometry were correlated to backscattered electron (BE) images visualizing the mineralized tissue. Results: In all samples, we found a highly specific accumulation of Pb in the tidemark, the transition zone between calcified and non-calcified articular cartilage. Pb fluorescence intensities in the tidemark, which is thought to be a metabolically active mineralization front, were 13-fold higher when compared to subchondral bone. Pb intensities in the subchondral region were strongly correlated with Zn, but were distinctly different from Ca and Sr. Conclusions: The finding of the highly specific accumulation of lead in the tidemark of human articular cartilage is novel. However at this point, the exact mechanisms of the local Pb accumulation as well as its clinical implications are unknown. (C) 2006 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 46
TC 63
Z9 73
U1 0
U2 21
PU ELSEVIER SCI LTD
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD SEP 15
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SC Orthopedics; Rheumatology
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ER

PT J
AU Berkemeyer, S
Remer, T
AF Berkemeyer, S
Remer, T
TI Anthropometrics provide a better estimate of urinary organic acid anion excretion than a dietary mineral intake-based estimate in children, adolescents, and young adults
SO JOURNAL OF NUTRITION
LA English
DT Article
DE organic acid estimates; dietary potential renal acid load; 24-hour urine; healthy subjects; acid-base
ID glomerular-filtration-rate; postmenopausal women; citrate excretion; bone-resorption; german children; protein-intake; energy-intake; load; potassium; healthy
AB The role of elevated net endogenous acid production (NEAP) in the causation of osteoporosis, muscle wasting, and kidney stones is currently under discussion. The aim of this study was to examine whether urinary organic acid anion excretion, a major component of NEAP, is predicted primarily by anthropometric-(OA(anthro)) or diet-(OA(diet)) based estimates. Dietary intakes, anthropometric data, and 24-h urinary excretion rates of organic acids (24h-OA(urine)) were determined cross sectionally in healthy children (6-7 y; n = 217), adolescents (13-14 y; n = 91), and young adults (18-22 y; n = 82). OA(anthro) was computed from body surface area and OA(diet) calculated using a published algorithm based on dietary intakes of mineral anions and cations. There was a significant increase ($P < 0.0001$) in 24h-OA(urine) across the age groups that was no longer discernible after correction for body surface area. In almost all sex-stratified subsamples, OA(anthro) had a higher correlation with 24h-OA(urine) than OA(diet). Multiple regression analyses, using energy-corrected diet variables, revealed that OA(anthro) was

consistently the primary predictor of 24h-OA(urine) (R-2 varying from 0.15 to 0.39) and dietary fat and protein were sporadic predictors. In accordance with the observed age independency of 24h-OAurine after body surface area correction, our findings indicate that OAanthro is a better estimate of 24h-OA(urine) in healthy children, adolescents, and young adults than OA(diet). This further confirms that the (principally diet-dependent) NEAP comprises a component, i.e., organic acid anions, that is reasonably predictable by anthropometrics. Consequently, the other component, i.e., the potential renal acid load, appears to be the primary parameter that characterizes the diet-induced acid load.

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1975, 1900, P657, V0, P0
NR 44
TC 27
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U1 0
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PT J
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Tian, N
AF Raut, R.
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TI On the realization of current transfer function using voltage amplifiers
SO INTERNATIONAL JOURNAL OF CIRCUIT THEORY AND APPLICATIONS
LA English
DT Article
DE current transfer function; current mode; VCVS; OP-AMP; nullator-norator
ID biquads
AB Current transfer function is a feature of current-mode filters. Current-mode filters have so far been realized principally using current amplifiers and current conveyors. Some current-mode filter architecture using operational amplifiers have also been reported. In this article it is shown that by using the principles of transposed network and nullor model for the active device, a current transfer function can be realized in a very simple way using a voltage amplifier, i.e. operational amplifier (OA). The key concept is the knowledge that each ideal (i.e. infinite gain) controlled source is exactly equivalent to a nullor. Thus, a voltage-mode filter implemented using an ideal three terminal (output, input and ground) OA can be very easily converted to a current-mode filter using the same OA. The principle has been illustrated by considering single-OA- and multi-OA-based second-order voltage-mode filters. SPICE simulation results are provided to validate the theoretical concept. Copyright (C) 2006 John Wiley & Sons, Ltd.
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NR 8
TC 14
Z9 14
U1 0
U2 1
PU WILEY
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J9 INT J CIRC THEOR APP
JI Int. J. Circuit Theory Appl.
PD SEP-OCT 15
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VL 34
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WC Engineering, Electrical & Electronic
SC Engineering
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TI Clinical factors as predictors of the risk of falls and subsequent bone fractures due to osteoporosis in postmenopausal women
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE osteoporosis; falls; single-leg stance with open eyes; predictive factors; logistic regression analysis
AB In Japan, the "bedridden state" is one of the most serious problems the aged face, and it is becoming a social problem. The main causes of the bedridden state are cerebrovascular disorders and bone fractures following falls. The purpose of this study was to predict risk factors for falls and resultant bone fracture due to osteoporosis. We explored mobility parameters for possible fall prevention. In order to examine the correlation between the risk of falling and resultant bone fracture due to osteoporosis, logistic regression analysis was performed between bone mass (independent variable) and various factors dependent variables: body mass index [BMI], body fat percentage, atherogenic index, presence of transformation-related osteoarthritis of knee, presence of transformation-related osteoarthritis of spine, maximum step length, single-leg stance with open eyes, and hip-joint flexion motion angle); predictive factors were then examined. Predictive factors were determined by the stepwise method. Subjects who could not perform the "single-leg stance with open eyes" test had a risk of falling and bone fracture 2.49 times as large as that of subjects who could. The "single-leg stance with open eyes" test may be considered a useful method for the early detection of the risk of falling and bone fracture associated with osteoporosis. As a first step to identify factors predicting the occurrence of falls and bone fractures due to osteoporosis, we intended to discover an indicator that would help to detect incipient osteoporosis.
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NR 17
TC 17
Z9 23
U1 0
U2 8
PU SPRINGER JAPAN KK
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PA CHIYODA FIRST BLDG EAST, 3-8-1 NISHI-KANDA, CHIYODA-KU, TOKYO, 101-0065, JAPAN
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PT J
AU Miyakoshi, N
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Itoi, E
AF Miyakoshi, Naohisa
Shimada, Yoichi
Ando, Shigeru
Minato, Takashi
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TI Effects of alfacalcidol alone or in combination with elcatonin on incidence of osteoporotic vertebral fractures in postmenopausal women with spondylosis
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE osteoporosis; spondylosis; vertebral fracture; alfacalcidol; elcatonin
ID bone-mineral density; salmon-calcitonin; vitamin-d; 1-alpha-hydroxyvitamin d-3; osteophyte formation; biochemical markers; disc degeneration; elderly-women; iliac crest; osteoarthritis
AB Osteoporosis and spondylosis often occur simultaneously. However, there are no previous reports about the effects of osteoporosis medication on incidence of vertebral fractures in people with spondylosis. In this study, we conducted a retrospective investigation of the effects of alfacalcidol alone or in combination with elcatonin on incidence of osteoporotic vertebral fractures in women with spondylosis. The present subjects were 101 postmenopausal women with osteoporosis aged > 60 years, divided into three groups: D group (n = 45), treated for > 5 years with alfacalcidol; D+ECT group (n = 26), treated for > 5 years with alfacalcidol plus elcatonin; control group (n = 30), who received no medications for > 5 years. Over the 5-year treatment period, bone mineral density (BMD) of the lumbar spine and proximal femur did not significantly change in the D and D+ECT groups, but they significantly decreased in the control group ($P < 0.05$). The number of incident vertebral fractures per patient was significantly higher in the control group (2.9) than in the D group (1.2) and D+ECT group (1.5) ($P < 0.01$). There was no significant difference in BMD or incident vertebral fractures between

the D and D+ECT groups. In all three groups, the number of incident vertebral fractures positively correlated with the number of prevalent vertebral fractures (0.303 <= r <= 0.434), and negatively correlated with baseline BMD (-0.703 <= r <= - 0.326) and the osteophyte score representing the degree of spondylosis (-0.769 <= r <= -0.365). Further multiple regression analysis revealed that the medication (D or D+ECT, P < 0.001) and the osteophyte score (P < 0.001) were the most significant contributors for the number of incident vertebral fractures. In conclusion, elcatonin had no additive effects on BMD or prevention of vertebral fractures in postmenopausal women receiving alfacalcidol. Presence of spondylosis (indicated by a high osteophyte score) appears to have an effect on prevention of vertebral fractures.
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NR 40
TC 1
Z9 2
U1 0
U2 1
PU SPRINGER TOKYO
PI TOKYO
PA 3-3-13, HONGO, BUNKYO-KU, TOKYO, 113-0033, JAPAN
SN 0914-8779
EI
J9 J BONE MINER METAB
JI J. Bone Miner. Metab.
PD NOV 15
PY 2006
VL 24
IS 6
BP 491
EP 497
DI 10.1007/s00774-006-0713-0
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WC Endocrinology & Metabolism; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Research & Experimental Medicine

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UT WOS:000241609700010
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PT J
AU Schousboe, JT
DeBold, CR
AF Schousboe, JT
DeBold, CR
TI Reliability and accuracy of vertebral fracture assessment with densitometry compared to radiography in clinical practice
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE absorptiometry; disc space osteoarthritis; spine radiography; vertebral deformity; vertebral fracture assessment
ID x-ray absorptiometry; morphometric radiography; identification; osteoporosis; deformity; hip; osteoarthritis; precision; spine; women
AB Absorptiometry of the thoraco-lumbar spine at the time of bone densitometry to detect vertebral deformities consistent with fracture is now available. The performance of absorptiometry in clinical practice compared to radiography has not been fully established, especially in the presence of osteoarthritis or scoliosis. Our first objective was to compare absorptiometry to radiography for detection of vertebral deformity in elderly women who were referred for bone densitometry with or without scoliosis or disc space osteoarthritis excluded. Our second objective was to assess the effect of osteoarthritis and scoliosis on the inter-rater reliability of both technologies. The study group comprised two hundred five women age 65 and older referred for bone densitometry in a large multispecialty group practice. Lateral and antero-posterior (AP) absorptiometry images and lateral spine radiographs were obtained on all participants. The vertebrae on all images were evaluated for vertebral deformity by two observers according to the Genant semiquantitative criteria who were blinded to each other's readings. Disc spaces were evaluated on radiographs for osteoarthritis. Absorptiometry AP images were evaluated for scoliosis. In the absence of scoliosis, the sensitivity and specificity of absorptiometry for persons with one or more radiographic grade 2-3 deformities (>= 25% reduction of vertebral height) for the two readers were 87-93% and 93-95%, respectively. The inter-rater reliability of absorptiometry improved in the absence of moderate or severe disc space osteoarthritis. A strategy of absorptiometry with follow-up radiography only in those with scoliosis or apparent grade 2 deformity accurately identifies those with prevalent grade 2 or 3 deformity on radiography (accuracy 0.98 and kappa 0.86 for reader 1; accuracy 0.99 and kappa 0.92 for reader 2). Lateral and AP absorptiometry imaging of the spine with

selective follow-up radiography accurately identifies elderly women with vertebral deformity consistent with moderate or severe fracture, but extra caution is necessary when evaluating vertebrae in the presence of adjacent disc space osteoarthritis.
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NR 22
TC 152
Z9 160
U1 0
U2 2
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.

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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 000IQ
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ER

PT J
AU Kwon, BK
Elgafy, H
Keynan, O
Fisher, CG
Boyd, MC
Paquette, SJ
Dvorak, MF
AF Kwon, Brian K.
Elgafy, Hossein
Keynan, Ory
Fisher, Charles G.
Boyd, Michael C.
Paquette, Scott J.
Dvorak, Marcel F.
TI Progressive junctional kyphosis at the caudal end of lumbar instrumented fusion: Etiology, predictors, and treatment
SO SPINE
LA English
DT Article
DE junctional kyphosis; sagittal balance; decompensation; pedicle subtraction osteotomy; flat back
ID spinal-fusion; harrington instrumentation; proximal kyphosis; motion segment; scoliosis; lordosis; thoracolumbar; flatback; management; deformity
AB Study Design. Clinical case series. Objective. To describe a series of patients with progressive sagittal decompensation caused by failure at the caudal end of an instrumented lumbar fusion. Summary of Background Data. Lumbar kyphosis in association with global sagittal decompensation can be a disabling problem,

particularly as a late complication of distraction instrumentation. Although kyphosis at the rostral end of instrumented fusions secondary to adjacent segment degeneration has been well described, substantially less has been documented about failure and kyphosis at the caudal end. Methods. Patients who have a progressive lumbar kyphosis and sagittal decompensation requiring operative revision were retrospectively reviewed, and radiographic measurements of lumbar lordosis and sagittal balance were performed to study this problem. Results. There were 13 patients identified. The most common mode of caudal junctional decompensation was related to failure of the most distal fixation. Sagittal decompensation occurred even in the presence of satisfactory lumbar lordosis. Revision surgery and improved sagittal balance were achieved typically using the technique of pedicle subtraction osteotomy and extension of the instrumentation to the sacrum. Osteoporosis, hip osteoarthritis, and substance abuse were commonly observed associations. Conclusions. Fixation failure at the caudal end of lumbar-instrumented fusion should be considered in patients with progressive sagittal decompensation. The high potential for failure of L5 pedicle screws after the index surgery warrants serious consideration of extending such fusions into the sacrum/ilium.
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NR 19
TC 52
Z9 76
U1 0
U2 4
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA
SN 0362-2436
EI
J9 SPINE
JI SPINE
PD AUG 1
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BP 1943
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DI 10.1097/01.brs.0000229258.83071.db
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WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
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PT J
AU Stöve, J
Schneider-Wald, B
Scharf, HP
Schwarz, ML
AF Stoeve, J.
Schneider-Wald, B.
Scharf, H. -P.
Schwarz, M. L.
TI Bone morphogenetic protein 7 (bmp-7) stimulates Proteoglycan synthesis in human osteoarthritic chondrocytes in vitro
SO BIOMEDICINE & PHARMACOTHERAPY
LA English
DT Article
DE articular cartilage; stimulation of chondrocytes; BMP-7
ID human articular chondrocytes; human osteogenic protein-1; matrix synthesis; cartilage; expression; promotes; repair; op-1
AB BMP-7 is a member of the TGF-beta superfamily which is supposed to be one of the most potent anabolic factors of chondrocytes. In this study we analysed the effect of BMP-7 on three dimensional cultured chondrocytes with and without serum. Cartilage samples from fourteen patients with osteoarthritis of the knee were harvested and chondrocytes were cultivated in alginate-beads with and without serum supplementation (10% FCS). BMP-7 was added in three different concentrations (200, 600 and 1000 ng/ml). After 4 and 21 days PG concentration was determined by a Blyscan-Assay. For gene expression analysis of aggrecan (AGG) quantitative Lightcycler-PCR was used to estimate the mRNA levels. Under serumfree culture conditions there was no stimulation after 4 days but there was a twofold increase of PG concentration after 21 days. Using BMP-7 together with serum supplemented medium we found comparable results, however not as pronounced. AGG expression was increased only after 4 days but not after 21 days. Beside a stimulatory effect under serumfree conditions we also found a stimulatory effect of BMP-7 in the presence of serum. This study pronounces that BMP-7 might be a suitable anabolic activator of osteoarthritic chondrocytes. (c) 2006 Elsevier Masson SAS. All rights reserved.
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NR 20
TC 31
Z9 37
U1 0
U2 7
PU ELSEVIER FRANCE-EDITIONS SCIENTIFIQUES MEDICALES ELSEVIER
PI ISSY-LES-MOULINEAUX
PA 65 RUE CAMILLE DESMOULINS, CS50083, 92442 ISSY-LES-MOULINEAUX, FRANCE
SN 0753-3322
EI 1950-6007
J9 BIOMED PHARMACOTHER
JI Biomed. Pharmacother.

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BP 639
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WC Medicine, Research & Experimental; Pharmacology & Pharmacy
SC Research & Experimental Medicine; Pharmacology & Pharmacy
GA 117AB
UT WOS:000242843800001
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ER

PT J
AU Fritz, DT
Jiang, S
Xu, JW
Rogers, MB
AF Fritz, David T.
Jiang, Shan
Xu, Junwang
Rogers, Melissa B.
TI A polymorphism in a conserved posttranscriptional regulatory motif alters bone morphogenetic protein 2 (BMP2) RNA: Protein interactions
SO MOLECULAR ENDOCRINOLOGY
LA English
DT Review
ID teratocarcinoma stem-cells; embryonal carcinoma-cells; messenger-rna; retinoic acid; gene-expression; in-vitro; family-members; tnf-alpha; mouse; apoptosis
AB The bone morphogenetic protein (BMP)2 gene has been genetically linked to osteoporosis and osteoarthritis. We have shown that the 3'-untranslated regions (UTR) of BMP2 genes from mammals to fishes are extraordinarily conserved. This indicates that the BMP2 3'-UTR is under stringent selective pressure. We present evidence that the conserved region is a strong posttranscriptional regulator of BMP2 expression. Polymorphisms in cis-regulatory elements have been proven to influence susceptibility to a growing number of diseases. A common single nucleotide polymorphism (SNP) disrupts a putative posttranscriptional regulatory motif, an AU-rich element, within the BMP2 3'-UTR. The affinity of specific proteins for the rs15705 SNP sequence differs from their affinity for the normal human sequence. More importantly, the in vitro decay rate of RNAs with the SNP is higher than that of RNAs with the normal sequence. Such changes in mRNA: protein

interactions may influence the posttranscriptional mechanisms that control BMP2 gene expression. The consequent alterations in BMP2 protein levels may influence the development or physiology of bone or other BMP2-influenced tissues.
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FU NICHD NIH HHS [HD31117] Funding Source: Medline
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NR 113
TC 23
Z9 28
U1 1
U2 8
PU OXFORD UNIV PRESS INC
PI CARY
PA JOURNALS DEPT, 2001 EVANS RD, CARY, NC 27513 USA
SN 0888-8809
EI 1944-9917
J9 MOL ENDOCRINOL
JI Mol. Endocrinol.
PD JUL 15
PY 2006
VL 20
IS 7
BP 1574
EP 1586
DI 10.1210/me.2005-0469
PG 13
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 057CQ
UT WOS:000238573300009
PM 16497730
DA 2026-02-10
ER

PT J
AU Slover, J

Abdu, WA
Hanscom, B
Lurie, J
Weinstein, JN
AF Slover, James
Abdu, William A.
Hanscom, Brett
Lurie, Jon
Weinstein, James N.
TI Can condition-specific health surveys be specific to spine disease? An analysis of the effect of comorbidities on baseline condition-specific and general health survey scores
SO SPINE
LA English
DT Article
DE Short-Form 36; Oswestry Disability Index; comorbidity
ID oswestry disability index; low-back-pain; multidisciplinary rehabilitation; stenosis; responsiveness; questionnaire; surgery; sf-36; reliability; assessments
AB Study Design. This is an observational cross-sectional study of 26,290 patients seen and evaluated in the 25 centers of the National Spine Network. Objective. To explore the correlation between medical and psychosocial comorbidities, and baseline Short-Form 36 Health Status questionnaire (SF-36) and Oswestry Disability Index (ODI) (Musculoskeletal Outcomes Data Evaluation and Management Systems version with scales reversed so that a score of 100 represents no disability, and a score of 0 represents severe disability) scores in spine patients. Summary of Background Data. It remains unclear whether general health questionnaires or condition-specific surveys are superior for evaluating spine patients (Spine 2000; 25: 3100-3). Most clinicians would suspect that comorbidities (medical and psychosocial) play a significant role in the presentation, treatment, and outcome of spine patients. Yet, it has been difficult to quantify specifically the association of comorbidities with traditional health status instrument scores for spine patients. Methods. Initial visit (baseline) health questionnaires were analyzed. Patients were stratified according to the number of self-reported comorbidities. Analysis of variance was performed to assess the difference in mean health status across comorbidity groups. Multiple linear regressions were used to identify the most influential individual comorbidities on baseline functional survey scores. Results. There is an associated decrease in baseline physical component summary (PCS) (from the SF-36) and ODI scores with the addition of each comorbidity. For the range of zero to >= 7 comorbidities, the PCS score decreases from 33.3 to 23.2 ($P < 0.001$). The average baseline ODI score for patients with zero comorbidities was 62.4, decreasing to 42.0 in the group with >= 7 comorbidities ($P < 0.001$). The strongest association was seen with the medical comorbidities of smoking, frequent headaches, osteoarthritis, and osteoporosis ($P < 0.001$). However, the association with psychosocial comorbidities (e.g., self-rated health, active

compensation case, depression) (P < 0.001) was higher for both health status measures. Health status measures in patients with lumbar problems show that these patients are more impacted by their disease than patients with cervical or thoracic spine problems (P < 0.001), although the correlation with comorbidities is smaller for the lumbar group (P < 0.001). Conclusion. Traditional medical comorbidities correlate with both SF-36 (e.g., PCS) general health survey scores as well as disease-specific ODI scores. However, psychosocial comorbidities such as poor self-rated health (SF-1), an active compensation case, and low education level have a higher association than traditional medical comorbidities on these health status measures. The results show that the type of survey (disease-specific e. g., ODI, vs. generic e. g., SF-36) used may be less important than the need to assess and control for psychosocial and medical comorbidities when any patient-reported health survey is used in the spine population.
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NR 27
TC 23
Z9 25
U1 0
U2 1
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 0362-2436
EI 1528-1159
J9 SPINE
JI SPINE
PD MAY 15
PY 2006
VL 31
IS 11
BP 1265
EP 1271
DI 10.1097/01.brs.0000217635.67693.40
PG 7
WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
GA 041PY
UT WOS:000237469400014
PM 16688042
DA 2026-02-10
ER

PT J
AU Johnell, O
Kanis, JA

AF Johnell, O.
Kanis, J. A.
TI An estimate of the worldwide prevalence and disability associated with osteoporotic fractures
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE disability-adjusted life-years; hip fracture; mortality; noncommunicable diseases
ID excess mortality; hip-fractures; burden; risk; epidemiology; projections
AB Objective The aim of this study was to quantify the global burden of osteoporotic fracture worldwide. Methods The incidence of hip fractures was identified by systematic review and the incidence of osteoporotic fractures was imputed from the incidence of hip fractures in different regions of the world. Excess mortality and disability weights used age- and sex-specific data from Sweden to calculate the Disability Adjusted Life Years (DALYs) lost due to osteoporotic fracture. Results In the year 2000 there were an estimated 9.0 million osteoporotic fractures of which 1.6 million were at the hip, 1.7 million at the forearm and 1.4 million were clinical vertebral fractures. The greatest number of osteoporotic fractures occurred in Europe (34.8%). The total DALYs lost was 5.8 million of which 51% were accounted for by fractures that occurred in Europe and the Americas. World-wide, osteoporotic fractures accounted for 0.83% of the global burden of non-communicable disease and was 1.75% of the global burden in Europe. In Europe, osteoporotic fractures accounted for more DALYs lost than common cancers with the exception of lung cancer. For chronic musculo-skeletal disorders the DALYs lost in Europe due to osteoporosis (2.0 million) were less than for osteoarthrosis (3.1 million) but greater than for rheumatoid arthritis (1.0 million). Conclusion We conclude that osteoporotic fractures are a significant cause of morbidity and mortality, particularly in the developed countries.
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CR Unknown -, 2002, WORLD HLTH REP RED R, V0, P0
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NR 26
TC 3531
Z9 4135
U1 6
U2 301
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD DEC 15
PY 2006
VL 17
IS 12
BP 1726
EP 1733
DI 10.1007/s00198-006-0172-4
PG 8
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 097MM

UT WOS:000241452000003
PM 16983459
DA 2026-02-10
ER

PT J
AU McIntyre, JA
Serradell, N
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AF McIntyre, J. A.
Serradell, N.
Bolos, J.
TI Relacatib -: Prevention and treatment of bone metastases treatment of osteoarthritis treatment of osteoporosis cathepsin K inhibitor
SO DRUGS OF THE FUTURE
LA English
DT Article
DE GSK-462795; SB-462795
AB Cathepsin K is a cysteine protease synthesized by osteoclasts and one of the major effectors of osteoclastic bone resorption. As such, it is an attractive target for therapeutic intervention in the treatment of osteoporosis and other bone disorders causing bone degradation. Relacatib (SB-462795) is a high-potency inhibitor of cathepsin K with demonstrated antiresorptive activity in normal and ovariectomized monkeys. Studies in ovariectomized monkeys also demonstrated a greater stimulatory effect on cortical bone compared to alendronate, with significant improvements in bone mineral density and bone mineral content compared with vehicle-treated controls. Studies in monkeys indicate site-specific differences between alendronate and relacatib which may translate into differential efficacy. Relacatib is scheduled to enter phase II development for the prevention and treatment of bone metastases in 2006.
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CR Clark WM, 1900, PATENT NO. 2005069981, V0, P0
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NR 11
TC 2
Z9 2
U1 0
U2 5

PU PROUS SCIENCE, SA
PI BARCELONA
PA PO BOX 540, PROVENZA 388, 08025 BARCELONA, SPAIN
SN 0377-8282
EI
J9 DRUG FUTURE
JI Drug Future
PD MAY 15
PY 2006
VL 31
IS 5
BP 406
EP 411
DI 10.1358/dof.2006.031.05.997473
PG 6
WC Pharmacology & Pharmacy
SC Pharmacology & Pharmacy
GA 080QA
UT WOS:000240261400005
DA 2026-02-10
ER

PT J
AU Oyedele, O
Maseko, C
Mkasi, N
Mashanyana, M
AF Oyedele, Olusegun
Maseko, Constance
Mkasi, Nkateko
Mashanyana, Matshidiso
TI High incidence of the os peroneum in a cadaver sample in Johannesburg, South Africa: Possible clinical implications?
SO CLINICAL ANATOMY
LA English
DT Article
DE sesamoid bone; prevalence; fractures; foot pain; epidemiology; ossification; dissection
ID fracture; stress
AB This study set out to investigate the incidence of the os peroneum in a cadaver sample from Johannesburg, South Africa and to note how bio-demographic parameters affect such incidence. The os peroneum (OP) is a sesamoid bone frequently found in the tendon of the fibularis longus muscle (FLM), as it passes on the plantar aspect of the cuboid bone. While this bone is often an incidental

dissection room or radiological finding, OP fractures, with or without associated rupture of the fibularis (peroneus) longus tendons have been reported. Some investigators have also suggested that the presence of the OP may render the tendon of the FLM susceptible to avulsion injuries. The reported incidences of the OP range between 8 and 26%. These data have emanated by and large from radiographic rather than dissection studies, and the influences of biological indices such as age, sex, population group of origin, and side of the body on these incidences remain largely unknown. Forty cadavers (average age = 75 years) were dissected. Os peronei were present in 36 of these cadavers (90.0%), with 96% of them occurring bilaterally. This bilateral incidence was statistically significant (P = 0.007), but there was no significant difference in age (P = 0.38), sex (P = 0.97), or population group (P = 0.17). We hope that the unusually high incidence of the OP reported here will stimulate further research into possible predisposing factors as well as into the speculated associations between sesamoid occurrence, osteoarthritis, and tendon injuries.
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Williams PL, 1989, GRAYS ANATOMY, V0, P457
NR 13
TC 11
Z9 12
U1 0
U2 2
PU WILEY-LISS

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SN 0897-3806
EI
J9 CLIN ANAT
JI Clin. Anat.
PD OCT 15
PY 2006
VL 19
IS 7
BP 605
EP 610
DI 10.1002/ca.20224
PG 6
WC Anatomy & Morphology
SC Anatomy & Morphology
GA 084FH
UT WOS:000240517200005
PM 16287117
DA 2026-02-10
ER

PT J
AU Kou, HS
Lin, TP
Chung, TC
Wu, HL
AF Kou, Hwang-Shang
Lin, Tsai-Pei
Chung, Tang-Chia
Wu, Hsin-Lung
TI Micellar electrokinetic capillary chromatographic method for the quantitative analysis of uricosuric and antigout drugs in pharmaceutical preparations
SO ELECTROPHORESIS
LA English
DT Article
DE MEKC-UV; pharmaceutical analysis; uricosuric and antigout drugs
ID performance liquid-chromatography; active metabolite oxypurinol; electrophoresis; urine; allopurinol; colchicine; purines
AB A simple MEKC method is described for the separation and quantification of seven widely used uricosuric and antigout drugs, including allopurinol (AP), benzbromarone (BZB), colchicine (COL), orotic acid (OA), oxypurinol (OP), probenecid (PB), and sulfinpyrazone (SPZ). The drugs were separated in a BGE of borate buffer (45mM; pH 9.00) with SDS (20 mM) as the micellar source and the

separated drugs were directly monitored with a UV detector (214 nm). Several parameters affecting the separation and analysis of the drugs were studied. Based on the normalized peak-area ratios of the drugs to an internal standard versus the concentration of the drugs, the method is applicable to quantify BZB, COL, and SPZ (each 5-200 mu M), AP OA, OP and PB (each 10-200 mu M) with detection limits (S/N = 3, 0.5 psi, 5 s injection) in the range of 0.6-4.0 mu M. The precision (RSD; n = 5) and accuracy (relative error; n = 5) of the method for intraday and interday analyses of the analytes at three levels (30, 120, and 180 mu M) are below 4% (n = 3). The method was demonstrated to be suitable for the analysis of AP and COL in commercial tablets with speed and simplicity.
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2001, 1900, P52, V0, P0
NR 22
TC 7
Z9 7
U1 0
U2 11
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0173-0835
EI 1522-2683
J9 ELECTROPHORESIS
JI Electrophoresis
PD JUN 15
PY 2006
VL 27
IS 12
BP 2293
EP 2299
DI 10.1002/elps.200500860
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WC Biochemical Research Methods; Chemistry, Analytical
SC Biochemistry & Molecular Biology; Chemistry
GA 061UX
UT WOS:000238899400004
PM 16718644
DA 2026-02-10
ER

PT J
AU Chappard, C
Peyrin, F
Bonnassie, A
Lemineur, G
Brunet-Imbault, B
Lespessailles, E
Benhamou, CL
AF Chappard, C
Peyrin, F
Bonnassie, A

Lemineur, G
Brunet-Imbault, B
Lespessailles, E
Benhamou, CL
TI Subchondral bone micro-architectural alterations in osteoarthritis: a synchrotron micro-computed tomography study
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE subchondral bone; trabecular bone micro-architecture; micro-computed tomography; synchrotron radiation
ID anterior cruciate ligament; human cancellous bone; trabecular bone; radiation microtomography; articular-cartilage; microcomputed tomography; mechanical-property; knee osteoarthritis; finite-element; iliac crest
AB Objectives: We evaluated the three-dimensional (3D) micro-architecture of subchondral trabecular (Tb) bone in osteoarthritis (OA). Due to high signal-to-noise ratio and high resolution, micro-computed tomography (micro-CT) by synchrotron radiation is considered as the gold standard for bone micro-architecture imaging. Design: Subchondral bone were extracted from femoral heads in CA cases in areas without cartilage (OAc-; n = 6) and in adjacent areas with cartilage (OAc+; n = 6) and compared to eight subchondral bone cores from osteoporosis cases (OP). The voxel size of images was 10.13 mu m. We measured the bone volume fraction (BV/TV) and morphological parameters: Tb thickness (TbTh), Tb spacing (TbSp), Tb number (TbN), and bone surface/bone volume (BS/BV). The degree of anisotropy (DA), the connectivity by the Euler number and the degree of mineralization (DM) were equally assessed. Results: BV/TV and morphological parameters showed significant differences between OAc- and OP samples ($P < 0.01$ except TbTh: $P < 0.05$) and between OAc- and OAc+ ($0.05 < P < 0.01$) but no difference between OAc+ and OP except TbN ($P < 0.01$). The connectivity was higher in OAc- comparatively to OAc+ and OP. The DA were significantly different between OA and OP cases ($P < 0.01$) but not between OAc- and OAc+ specimens. The DMs (mean +/- SD) were 0.817 +/- 0.142 g/cm(3), 0.873 +/- 0.161 g/cm(3), 0.906 +/- 0.156 g/cm3 for OAc-, OAc+, OP ($P < 0.01$), respectively. Conclusion: Subchondral bone changes were mainly observed in advanced OA, when cartilage has been deleted and preserved in adjacent area. These data suggest that subchondral bone changes would be rather secondary to the cartilage deterioration than a primitive mechanism of CA. Nevertheless, longitudinal data could bring more accurate conclusions. (c) 2005 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 50
TC 135
Z9 145
U1 0
U2 23
PU ELSEVIER SCI LTD
PI London
PA 125 London Wall, London, ENGLAND
SN 1063-4584
EI 1522-9653
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD MAR 15
PY 2006
VL 14
IS 3
BP 215
EP 223
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PG 9

WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 025PA
UT WOS:000236277600003
PM 16504546
DA 2026-02-10
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PT J
AU Dionne, CE
Dunn, KM
Croft, PR
AF Dionne, CE
Dunn, KM
Croft, PR
TI Does back pain prevalence really decrease with increasing age? A systematic review
SO AGE AND AGEING
LA English
DT Review
DE back pain; age; epidemiology; systematic reviews
ID of-the-literature; general-population; neck pain; saskatchewan adults; disability; complaints; community; severity; project; health
AB Background: it is believed that the prevalence of back pain decreases around the middle of the sixth decade. However, back pain is still among the most commonly reported symptoms in the elderly and osteoarthritis, disc degeneration, osteoporosis and spinal stenosis all increase with age. In light of this, it is difficult to understand why the prevalence of back pain would decrease with increasing age. Objective: this study aimed at summarising the scientific evidence on the trends of back pain prevalence with age. Methods: population-based studies reporting the prevalence of back pain, including people aged 65 years and over, were systematically retrieved from several bibliographic databases. These were read and assessed by two reviewers, and papers retained ('good quality studies') were aggregated according to specific criteria. Results: good quality studies showed a large heterogeneity as to their methods and prevalence figures. No specific patterns were detected by country nor outcome measure. However, most studies that considered severe forms of back pain found an increase of prevalence with increasing age. The curvilinear association between age and back pain prevalence that is widely mentioned in the literature was found only for benign and mixed problems. Conclusions: the evidence concerning the association of back pain prevalence with age is more sparse than currently believed and this association seems to be modified by the severity of the problem. This knowledge could have important public health implications, as the proportion of older people will increase considerably in the coming years in most industrialised societies.

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NR 30
TC 286
Z9 339
U1 0
U2 18
PU OXFORD UNIV PRESS
PI OXFORD
PA GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND
SN 0002-0729
EI
J9 AGE AGEING
JI Age Ageing
PD MAY 15
PY 2006
VL 35
IS 3
BP 229
EP 234
DI 10.1093/ageing/afj055
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WC Geriatrics & Gerontology
SC Geriatrics & Gerontology
GA 039PO
UT WOS:000237318900005
PM 16547119
DA 2026-02-10
ER

PT J
AU Pappou, IP
Girardi, FP
Sandhu, HS
Parvataneni, HK
Cammisa, FP
Schneider, R
Frelinghuysen, P
Lane, JM
AF Pappou, Ioannis P.
Girardi, Federico P.
Sandhu, Harvinder S.
Parvataneni, Hari K.
Cammisa, Frank P., Jr.
Schneider, Robert
Frelinghuysen, Peter

Lane, Joseph M.
TI Discordantly high spinal bone mineral density values in patients with adult lumbar scoliosis
SO SPINE
LA English
DT Article
DE adult; osteoporosis; scoliosis; lumbar; degenerative; DEXA; bone mineral density
ID quantitative ultrasound; degenerative changes; screw fixation; osteoporosis; hip; osteoarthritis; impact; women
AB Study Design. Retrospective study. Objective. The purposes of this study were: 1) to investigate the validity of bone mineral density measurements with DEXA in patients with adult lumbar scoliosis and 2) to investigate the association between osteoporosis and adult lumbar scoliosis. Summary of Background Data. Osteoporosis and lumbar degenerative scoliosis are phenomena encountered with increased frequency in aging, often concurrently. It has been suggested that scoliosis predisposes to osteoporosis, but degenerative scoliosis could falsely elevate spinal bone mineral density measurements. Methods. The feasibility of measuring Cobb's angle in DEXA scans was established in 48 surgical candidates with standing anteroposterior lumbar radiographs and supine DEXA scans. Charts and radiographs of 454 consecutive adult patients evaluated at an osteoporosis center were reviewed thereafter. The association between age, lumbar curve, and various bone density measurements was investigated. Bone density measurements between nonscoliotic and scoliotic patients with and without a history of adolescent scoliosis were compared. Results. Cobb's angle on DEXA scan was measured with an error of 4 and correlated highly with the plain lumbar radiographs. The prevalence of scoliosis was 9.47% in this cohort of patients. Advancing age was associated with an increase in osteoporosis in both scoliotic and nonscoliotic patients. Scoliotic patients demonstrated increased spinal bone mineral density (BMD) measurements compared with nonscoliotic patients, resulting in discrepancies between hip and spine BMD values. This discrepancy correlated with aging and curve magnitude (up to 30% for curves of 43). Scoliotic patients demonstrated significantly lower hip BMD values than nonscoliotic. Curve magnitude did not correlate with severity of osteoporosis. Conclusions. Cobb's angle measurements on DEXA scans are reliable and comparable to conventional radiographs. Spinal BMD values are less valuable for monitoring osteoporosis than hip values in scoliotic patients; an increasing discrepancy with age was noted. Scoliotic patients exhibited discordantly high spinal BMD values, despite significant hip osteoporosis. The discrepancy correlated with aging and curve magnitude. Scoliosis was common among the osteoporotic population (9.47%). Lumbar scoliosis is a useful clinical marker for osteoporosis, irrespective of scoliosis history and magnitude. Viable alternatives for osteoporosis evaluation of adult patients with lumbar scoliosis are hip DEXA values, in conjunction with other BMD measurements.
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NR 40
TC 113
Z9 132
U1 0
U2 8
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 0362-2436
EI 1528-1159
J9 SPINE
JI SPINE
PD JUN 15
PY 2006
VL 31
IS 14
BP 1614
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DI 10.1097/01.brs.0000222030.32171.5f
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WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
GA 053RV
UT WOS:000238323700018
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ER

PT J
AU Bakker, AD
Klein-Nulend, J
Tanck, E
Heyligers, IC
Albers, GH
Lips, P
Burger, EH
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TI Different responsiveness to mechanical stress of bone cells from osteoporotic versus osteoarthritic donors
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE bone cell culture; mechanosensitivity; osteoarthritis; osteoporosis; pulsating fluid flow
ID nitric-oxide; cancellous bone; fluid-flow; trabecular bone; shear-stress; strain; osteocytes; density; tissue; cox-2
AB Introduction: Osteoporosis (OP) and osteoarthritis (OA) are both common diseases in the elderly, but remarkably seldom coexist. The bone defects that are related to both diseases develop with increasing age, which suggests that they are related to some form of imperfect bone remodeling. Current opinion holds that the bone remodeling process is supervised by bone cells that respond to mechanical stimuli. An imperfect response of bone cells to mechanical stimuli might thus relate to imperfect bone remodeling, which could eventually lead to a lack bone mass and strength, such as in OP patients. Materials: To investigate whether the cellular response to mechanical stress differs between OP and OA patients, we compared the response of bone cells from both groups to fluid shear stress of increasing magnitude. Bone cells from 9 female OP donors (age 60-90 year) and 9 female age-matched OA donors were subjected to pulsating fluid flow (PFF) of low (0.4 +/- 0.1 Pa at 3 Hz), medium (0.6 +/- 0.3 Pa at 5 Hz), or high shear stress (1.2 +/- 0.4 at 9Hz), or were kept under static culture conditions. Results: We found subtle differences in the shear-stress response of the two groups, measured as nitric oxide (NO) and prostaglandin E-2 (PGE(2)) production. The NO-response to shear stress was higher in the OP than the OA cells, while the PGE(2)-response was higher in the OA cells. Conclusions: Assuming that NO and PGE(2) play a role in cell-cell communication during remodeling, these results suggest that slight differences in mechanotransduction might relate to the opposite bone defects in osteoporosis and osteoarthritis.
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NR 38
TC 35
Z9 45
U1 0
U2 10
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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TI Osteogenic protein-1 promotes the formation of tissue-engineered cartilage using the alginate-recovered-chondrocyte method
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE cartilage; alginate; tissue culture; tissue engineering; bone morphogenetic protein-7; osteogenic protein-1
ID human articular chondrocytes; mature bovine chondrocytes; in-vitro; growth-factors; extracellular-matrix; repair; beads; redifferentiation; proteoglycans; metabolism
AB Objective: This study examined the effects of a growth factor, recombinant human osteogenic protein-1 (rhOP-1), on the formation of tissue-engineered cartilaginous tissue by adult bovine articular chondrocytes using the alginate-recovered-chondrocyte (ARC) method. Design: To ascertain if rhOP-1 enhances the formation of the cell-associated matrix (CM) and the characteristics of CM formation, bovine articular chondrocytes were first cultured for up to 14 days in alginate beads in medium supplemented with serum, with or without rhOP-1. Then, the recovered chondrocytes and their associated CM were resuspended in medium, with or without OP-1, seeded onto culture inserts, and incubated for an additional 14 days. The fabricated ARC tissues were subjected to biochemical and histological analyses. Results: The addition of rhOP-1 to the medium in the alginate bead culture step resulted in an increased accumulation of both proteoglycan (PG) and collagen, with a ratio of PG to collagen that was higher than that found in native adult cartilage. The addition of rhOP-1 in the second step had a similar stimulatory effect during 14 days of culture. Histological examination of the tissue formed under all conditions revealed a cartilage-like matrix, stained strongly by toluidine blue. The thickness of the tissues obtained from culture conditions that included the addition of rhOP-1 was four times greater than that of the tissues cultured without rhOP-1. Conclusions: Using the ARC method, rhOP-1 enhanced the formation of matrix and generated a voluminous tissue-engineered cartilaginous construct. These characteristics may be beneficial in generating constructs that can cover large defects. (c) 2005 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 32
TC 31
Z9 40
U1 0
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PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
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PT J
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TI The ICF comprehensively covers the spectrum of health problems encountered by health professionals in patients with musculoskeletal conditions
SO RHEUMATOLOGY
LA English
DT Article
DE outcome assessment (health care); activities of daily living; rehabilitation; musculoskeletal diseases; ICF
ID international classification; rehabilitation-medicine; disability; osteoarthritis
AB Objectives. The objective of this study was to investigate, whether the International Classification of Functioning, Disablity and Health (ICF) comprehensively covers the spectrum of health problems encountered by medical doctors and physiotherapists in patients with musculoskeletal conditions. Methods. A worldwide e-mail survey with questionnaires that requested lists of relevant areas in the ICF components-body functions, body structures, activities and participation, and environmental factors-in patients with rheumatoid arthritis, osteoarthritis, low back pain and osteoporosis was conducted. The suitability of linking the named concepts to the ICF as well as the precision of the linking was characterized by assigning the concepts to six groups. Results. All concepts that were named by the experts could be linked to the ICF, with the exception of personal factors. Between 32% (environmental factors) and 51% (activities and participation) of the named concepts were linked to an ICF category with an identical meaning and the same grade of precision. All other named concepts were linked to ICF categories with a lower level of precision, or encompassed more than one ICF category, or were linked to an ICF category with a related, but not identical meaning. Conclusions. The ICF covers comprehensively the spectrum of problems encountered in patients with musculoskeletal conditions by clinical experts throughout the world. This strengthens the validity of the ICF in the view of the users and will encourage the use of ICF-based applications such as the ICF checklist and the now-developed ICF Core Sets.
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Peyrin, Francoise
TI Comparison of synchrotron radiation and conventional x-ray microcomputed tomography for assessing trabecular bone microarchitecture of human femoral heads
SO MEDICAL PHYSICS
LA English
DT Article
DE three-dimensional microtomography; synchrotron radiation; bone trabecular pattern
ID human cancellous bone; computed-tomography; micro-ct; 3-dimensional microarchitecture; mechanical-property; morphometric-analysis; elastic property; iliac crest; architecture; microtomography
AB Microcomputed tomography (mu CT) produces three-dimensional (3D) images of trabecular bone. We compared conventional mu CT (C mu CT) with a polychromatic x-ray cone beam to synchrotron radiation (SR) ACT with a monochromatic parallel beam for assessing trabecular bone microarchitecture of 14 subchondral femoral head specimens from patients with osteoarthritis (n = 10) or osteoporosis (n = 4). SR mu CT images with a voxel size of 10.13 Am were reconstructed from 900 2D radiographic projections (angular step, 0.2 degrees). C mu CT images with a voxel size of 10.77 Am were reconstructed from 205, 413, and 825 projections obtained using angular steps of 0.9 degrees, 0.45 degrees, and 0.23 degrees, respectively. A single threshold was used to binarize the images. We computed bone volume/tissue volume (BV/TV), bone surface/bone volume

(BS/BV), trabecular number (Tb.N), trabecular thickness (Tb.Th and Tb.Th*), trabecular spacing (Tb.Sp), degree of anisotropy (DA), and Euler density. With the 0.9 degrees angular step, all C mu CT values were significantly different from SR mu CT values. With the 0.23 degrees and 0.45 degrees rotation steps, BV/TV, Tb.Th, and BS/BV by C mu CT differed significantly from the values by SR mu CT. The error due to slice matching (visual site matching 10 slices) was within 1% for most parameters. Compared to SRACT, BV/TV, Tb.Sp, and Tb.Th by C mu CT were underestimated, whereas Tb.N and Tb.Th* were overestimated. A Bland and Altman plot showed no bias for Tb.N or DA. Bias was -0.8 +/- 1.0%, +5.0 +/- 1.1 mu m, -5.9 +/- 6.3 mu m, and -5.7 +/- 29.1 mu m for BV/TV, Th.Th*, Tb.Th, and Tb.Sp, respectively, and the differences did not vary over the range of values. Although systematic differences were noted between SR mu CT and CACT values, correlations between the techniques were high and the differences would probably not change the discrimination between study groups. CACT provides a reliable 3D assessment of human defatted bone when working at the 0.23 degrees or 0.45 degrees rotation step; the 0.9 degrees rotation step may be insufficiently accurate for morphological bone analysis. (c) 2006 American Association of Physicists in Medicine.

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NR 46
TC 62
Z9 70
U1 0

U2 21
PU AMER ASSOC PHYSICISTS MEDICINE AMER INST PHYSICS
PI MELVILLE
PA STE 1 NO 1, 2 HUNTINGTON QUADRANGLE, MELVILLE, NY 11747-4502 USA
SN 0094-2405
EI
J9 MED PHYS
JI Med. Phys.
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WC Radiology, Nuclear Medicine & Medical Imaging
SC Radiology, Nuclear Medicine & Medical Imaging
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UT WOS:000240694400055
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ER

PT J
AU Sutbeyaz, ST
Sezer, N
Koseoglu, BF
AF Sutbeyaz, ST
Sezer, N
Koseoglu, BF
TI The effect of pulsed electromagnetic fields in the treatment of cervical osteoarthritis: a randomized, double-blind, sham-controlled trial
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE cervical osteoarthritis; pulsed electromagnetic fields
ID neck pain; low-frequency; collagen production; disability scale; magnetic-field; validity; therapy; knee; physiotherapy; osteoporosis
AB The purpose of this study was to evaluate the effect of electromagnetic field therapy (PEMF) on pain, range of motion (ROM) and functional status in patients with cervical osteoarthritis (COA). Thirty-four patients with COA were included in a randomized, double-blind study. PEMF was administrated to the whole body using a mat 1.8x0.6 m in size. During the treatment, the patients lay on the mat for 30

min per session, twice a day for 3 weeks. Pain levels in the PEMF group decreased significantly after therapy ($p < 0.001$), but no change was observed in the placebo group. The active ROM, paravertebral muscle spasm and neck pain and disability scale (NPDS) scores improved significantly after PEMF therapy ($p < 0.001$) but no change was observed in the sham group. The results of this study are promising, in that PEMF treatment may offer a potential therapeutic adjunct to current COA therapies in the future.
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10.1067/mmt.2002.122327
NR 34
TC 46
Z9 61
U1 1
U2 16
PU SPRINGER HEIDELBERG
PI HEIDELBERG
PA TIERGARTENSTRASSE 17, D-69121 HEIDELBERG, GERMANY
SN 0172-8172
EI 1437-160X
J9 RHEUMATOL INT
JI Rheumatol. Int.
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BP 320
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WC Rheumatology
SC Rheumatology
GA 002HH
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PM 15986086
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ER

PT J
AU Pye, SR
Reid, DM
Adams, JE
Silman, AJ
O'Neill, TW

AF Pye, SR
Reid, DM
Adams, JE
Silman, AJ
O'Neill, TW
TI Radiographic features of lumbar disc degeneration and bone mineral density in men and women
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID vertebral osteoporosis; postmenopausal women; osteoarthritis; spine; fracture; hip; osteophytes; population; diagnosis; disease
AB Objectives: To determine the association between individual radiographic features of lumbar disc degeneration and bone mineral density (BMD) at the spine and hip. Methods: Subjects were recruited from a population register for a screening survey of vertebral osteoporosis. BMD was assessed at the spine and hip using dual energy x ray absorptiometry. Lateral spinal radiographs were evaluated for features of lumbar disc degeneration. Each vertebral level from L1/2 to L4/5 was assessed for the presence and severity of osteophytes, end plate sclerosis, and disc space narrowing. Linear regression was used to determine the association between each of these features and BMD at the spine and hip, with adjustments for age, body mass index, and levels of physical activity. Analyses were done separately in men and women. Results: 250 women and 256 men (mean age around 65 years) were studied. At the lumbar spine, after age adjustment there was an increase in BMD with increasing grade for all radiographic features of disc degeneration in both men and women. At the femoral neck, after age adjustment there was an increase in BMD with increasing osteophyte and end plate sclerosis grade though not disc space narrowing. Adjusting for body mass index and physical activity did not influence the strength of the associations. Conclusions: Radiographic features of lumbar disc degeneration are associated with an increase in BMD at the spine. Osteophytes and end plate sclerosis, but not disc space narrowing, are associated with an increase in BMD at the hip.
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FU Arthritis Research UK [17552] Funding Source: Medline
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NR 28
TC 76
Z9 85
U1 0
U2 7
PU ELSEVIER
PI AMSTERDAM
PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
SN 0003-4967
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J9 ANN RHEUM DIS
JI Ann. Rheum. Dis.
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WC Rheumatology
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ER

PT J
AU Sittl, R
Nuijten, M
Nautrup, BP
AF Sittl, Reinhard
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Nautrup, Barbara Poulsen
TI Patterns of dosage changes with transidermal buprenorphine and transdermal fentanyl for the treatment of noncancer and cancer pain: A retrospective data analysis in Germany
SO CLINICAL THERAPEUTICS
LA English
DT Article
DE cancer pain; noncancer pain; transdermal; buprenorphine; fentanyl; tolerance; dosage stability
ID long-term management; opioid tolerance; rotation; cohort
AB Background: Previous studies have suggested that buprenorphine may have a low association with tolerance development compared with other strong opioids. In a previous study by our group, mean cohort and intraindividual dosage increases over an entire course of treatment and on a per-day basis were significantly lower with transdermal (TD) buprenorphine than with TD fentanyl. However, no information concerning the relationship between qualitative and quantitative dose changes is available. Objective: The aim of this study was to compare TD buprenorphine and TD fentanyl with respect to dosage increases, dosage stability, and the nature of dosage changes. Methods: This retrospective analysis used data from the IMS Disease Analyzer-Mediplus database, which contains patient-related data documented by 400 medical practices in Germany. Data from patients with noncancer or cancer Pain treated with TD buprenorphine or TD fentanyl for at least 3 months between May 2002 and April 2005 were analyzed. Daily dosages were directly determined from the prescribed patch strength, taking into account the possibility of multiple patches applied simultaneously. To determine dosage stability, patients were classified based on the type of dosage change (stable,

increase, alternating, or decrease) of the prescribed dosages. From the prescribed daily dosages, mean percentage increases were calculated on a per-patient basis for the entire treatment period and per day, and these were assessed in relation to the type of dosage change. Results: In total, 631 patients with noncancer pain and 605 patients with cancer pain were included in the analysis (782 women, 454 men; mean age, 76.3 years [range, 29-100 years]). Treatment Indications included osteoarthritis, low back pain, osteoporosis (noncancer groups), and neoplasm (cancer groups). Patients had similar analgesic premedication requirements based on steps 1 to 3 of the World Health Organization analgesic ladder. Comedication requirements for breakthrough pain were also similar between the TD buprenorphine and TD fentanyl groups. The mean percentage increases per day were 0.10% (TD buprenorphine) and 0.25% (TD fentanyl) in the noncancer groups and 0.19% (TD buprenorphine) and 0.47% (TD fentanyl) in the cancer groups (both, $P < 0.05$). A significantly larger proportion of patients receiving TD buprenorphine had stable dosages over the entire treatment period compared with patients receiving TD fentanyl (noncancer groups: 56.9% vs 41.6%; cancer groups: 50.0% vs 26.2% [both, $P < 0.05$]). Compared with TD buprenorphine, the proportion of patients with alternating dosage changes was significantly greater in patients receiving TD fentanyl (noncancer groups: 22.7% vs 13.1%; cancer groups: 30.6% vs 11.8% [both, $P < 0.05$]). Conclusions: In this retrospective data analysis, compared with TD buprenorphine, the increase in mean daily dosage was significantly greater in patients treated with TD fentanyl. Also, compared with TD buprenorphine, alternating dosage changes were seen in a significantly greater proportion of patients receiving TD fentanyl. On the other hand, a significantly greater proportion of patients treated with TD buprenorphine had stable dosages over their entire treatment periods.
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NR 32
TC 27
Z9 32
U1 0
U2 4
PU ELSEVIER
PI BRIDGEWATER
PA 685 ROUTE 202-206, BRIDGEWATER, NJ 08807 USA
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WC Pharmacology & Pharmacy
SC Pharmacology & Pharmacy
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PM 16982291
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ER

PT J
AU Pedersen, BK
Saltin, B
AF Pedersen, BK
Saltin, B
TI Evidence for prescribing exercise as therapy in chronic disease
SO SCANDINAVIAN JOURNAL OF MEDICINE & SCIENCE IN SPORTS
LA English
DT Review
ID quality-of-life; randomized controlled-trial; chronic heart-failure; bone-mineral density; cardiovascular risk-factors; resting blood-pressure; obstructive pulmonary-disease; dependent diabetes-mellitus; home-based exercise; high-intensity exercise
AB Considerable knowledge has accumulated in recent decades concerning the significance of physical activity in the treatment of a number of diseases, including diseases that do not primarily manifest as disorders of the locomotive apparatus. In this review we present the evidence for prescribing exercise therapy in the treatment of metabolic syndrome-related disorders (insulin resistance, type 2 diabetes, dyslipidemia, hypertension, obesity), heart and pulmonary diseases (chronic obstructive pulmonary disease, coronary heart disease, chronic heart failure, intermittent claudication), muscle, bone and joint diseases (osteoarthritis, rheumatoid arthritis, osteoporosis, fibromyalgia, chronic fatigue syndrome) and cancer, depression, asthma and type 1 diabetes. For each disease, we review the effect of exercise therapy on disease pathogenesis, on symptoms specific to the diagnosis, on physical fitness or strength and on quality of life. The possible mechanisms of action are briefly examined and the principles for prescribing exercise therapy are discussed, focusing on the type and amount of exercise and

possible contraindications.
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TI A capsular incision leads to a fast osteoarthritic response, but also elevated levels of activated osteogenic protein-1 in rabbit knee joint cartilage
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DT Article
DE capsular incision; meniscectomy; osteogenic protein-1; articular cartilage; subchondral bone; osteoarthritis
ID human articular chondrocytes; meniscectomized guinea-pig; subchondral bone; inflammatory cytokines; matrix synthesis; in-vitro; damage; model; op-1; expression
AB We studied whether a small capsular incision alone, or combined with meniscectomy could induce early osteoarthritic changes in the rabbit knee. Thirty-one rabbits were operated on with a capsular incision in the left knee and

meniscectomy in the right knee. Another 12 rabbits were used as controls. The rabbits were killed 3, 6 and 12 weeks after surgery. Osteoarthritic changes in the articular cartilage were evaluated by the modified Mankin score. The subchondral bone was evaluated by scintimetry (Tc-99m-HDP) and semiquantitative grading of histological changes. Osteogenic protein (OP-1) in its mature and pro-form was examined by inummohistochemistry. Both a capsular incision and meniscectomy induced articular cartilage fibrillation and increased bone metabolic activity during the initial weeks after surgery. Capsular incision led to lesser changes than meniscectomy. Mature OP-1 was elevated, and its pro-form reduced, in meniscectomized knees. A similar pattern was observed in knees with capsular incision. Already 3 weeks after surgery, the articular cartilage and sulichondral bone showed typical signs of early osteoarthritis (OA), and a reparative response was suggested by increased intensity of OP-1 staining. As these signs were also found in knees with capsular incision only, it appears that trauma-related factors such as increased bleeding and inflammation are critical for the development of OA.
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NR 37
TC 17

Z9 19
U1 0
U2 1
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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J9 SCAND J MED SCI SPOR
JI Scand. J. Med. Sci. Sports
PD DEC 15
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IS 6
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DI 10.1111/j.1600-0838.2005.00513.x
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WC Sport Sciences
SC Sport Sciences
GA 113PR
UT WOS:000242610300012
PM 17121649
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PT J
AU Lee, PB
Kim, YC
Lim, YJ
Lee, CJ
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AF Lee, P. B.
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TI Efficacy of pulsed electromagnetic therapy for chronic lower back pain: a

randomized, double-blind, placebo-controlled study
SO JOURNAL OF INTERNATIONAL MEDICAL RESEARCH
LA English
DT Article
DE pulsed electromagnetic therapy; lower back pain; revised Oswestry disability score
ID controlled-trial; magnetic-fields; primary-care; osteoarthritis; osteoporosis; stimulation; pemfs; knee; rat
AB This randomized, double-blind, placebo-controlled clinical trial studied the effectiveness of pulsed electromagnetic therapy (PEMT) in patients with chronic lower back pain. Active PEMT (n = 17) or placebo treatment (n = 19) was performed three times a week for 3 weeks. Patients were assessed using a numerical rating scale (NRS) and revised Oswestry disability scores for 4 weeks after therapy. PEMT produced significant pain reduction throughout the observation period compared with baseline values. The percentage change in the NRS score from baseline was significantly greater in the PEMT group than the placebo group at all three time-points measured. The mean revised Oswestry disability percentage after 4 weeks was significantly improved from the baseline value in the PEMT group, whereas there were no significant differences in the placebo group. In conclusion, PEMT reduced pain and disability and appears to be a potentially useful therapeutic tool for the conservative management of chronic lower back pain.
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U2 6
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PD MAR-APR 15
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SC Research & Experimental Medicine; Pharmacology & Pharmacy

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ER

PT J
AU Filip, RS
Bylina, J
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TI Health promotion and health education with particular emphasis on bone diseases among rural population in Poland
SO ANNALS OF AGRICULTURAL AND ENVIRONMENTAL MEDICINE
LA English
DT Article
DE health promotion; health education; osteoporosis; osteoarthritis; rural population
ID lublin region; urban women; mineral density; risk-factors; osteoporosis; age; fractures
AB Osteoporosis and osteoarthrosis are the most common diseases of bone tissue affecting both rural and urban populations. The aim of the study was to investigate the level of education and requirement for health promotion within the scope of common diseases of the skeletal system among rural population in Poland. This was an exploratory study with a cross-sectional design performed between May 2004-September 2005 in rural areas of 16 Voivodeships (main provinces) of Poland. The study population comprised of 404 (62.9%) rural women and 238 (37.1%) rural men (total 642). All subjects were randomly sampled and recruited by personal contact in primary health care centres. Study data were obtained using a specially prepared questionnaire. The most commonly reported diseases were: arterial hypertension (26.1%), joint degenerative disease (24.6%) and osteoarthritis (14.7%). The occurrence of osteoarthritis and joint degenerative disease increased with age and was highest in the group aged over 50 (21% and 38.7% respectively). Osteoarthitis was more frequent in women compared to men (16% and 12.2% respectively). In most cases, the basic information about methods of prevention and treatment given by a General Practitioner or a specialist was characterized as "satisfactory" (73.6% and 62.9% respectively). The most popular prophylactic action performed in local communities was bone densitometry (14.1%), and the most important source of knowledge - TV and radio (65%). Populations living in rural areas have limited access to health education and health prophylaxis actions, irrespective of the geographical region of Poland. Inhabitants with secondary or higher education, as well as those with a higher household income, have better

knowledge about skeletal system diseases compared to those with a lower educational level. The practical implications of this study suggest the necessity for paying more attention to etiology, symptoms and methods of prevention and treatment of bone diseases when attending to patients in specialist practice.
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NR 18
TC 4
Z9 5
U1 0
U2 5
PU INST AGRICULTURAL MEDICINE
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WC Environmental Sciences; Public, Environmental & Occupational Health
SC Environmental Sciences & Ecology; Public, Environmental & Occupational Health
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ER

PT J
AU Cheng, YW
Shaffer, BL
Caughey, AB
AF Cheng, Yvonne W.
Shaffer, Brian L.
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TI Associated factors and outcomes of persistent occiput posterior position: A retrospective cohort study from 1976 to 2001
SO JOURNAL OF MATERNAL-FETAL & NEONATAL MEDICINE
LA English
DT Article
DE persistent OP position; maternal outcome
ID occipitoposterior position; intrapartum sonography; epidural analgesia; fetal head; delivery; labor
AB Objective. To identify maternal and fetal risk factors associated with persistent occiput posterior position at delivery, and to examine the association of occiput posterior position with subsequent obstetric outcomes. Methods. This is a retrospective cohort study of 30 839 term, cephalic, singleton births. Women with persistent occiput posterior (OP) position at delivery were compared to those with occiput anterior (OA) position. Demographics, obstetric history, and labor management were evaluated and subsequent obstetric outcomes examined. Potential confounding variables were controlled for using multivariate logistic regression analysis. Results. The overall frequency of OP position was 8.3% in the study population. When compared to Caucasians, a higher rate of OP was observed among African-Americans (OR 1.4, 95% CI 1.25-1.64) while no other racial/ethnic differences were noted. Other associated factors included nulliparity, maternal age >= 35, gestational age >= 41 weeks, and birth weight 44000 g, as well as artificial rupture of the membranes (AROM) and epidural anesthesia ($p < 0.001$ for all).

Persistent OP was associated with increased rates of operative vaginal (OR 4.14, 95% CI 3.57-4.81) and cesarean deliveries (OR = 13.45, 95% CI 11.94-15.15) and other peripartum complications including third or fourth degree perineal lacerations (OR = 2.38, 95% CI 2.03-2.79), and chorioamnionitis (OR = 2.10, 95% CI 1.81-2.44). Conclusion. Epidural use, AROM, African-American ethnicity, nulliparity, and birth weight 44000 g are associated with persistent OP position at delivery, with higher rates of operative deliveries and obstetric complications. This information can be useful in counseling patients regarding risks and associated outcomes of persistent OP position.
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NR 17
TC 84
Z9 91
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U2 6
PU TAYLOR & FRANCIS LTD
PI ABINGDON
PA 4 PARK SQUARE, MILTON PARK, ABINGDON OX14 4RN, OXON, ENGLAND
SN 1476-7058
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J9 J MATERN-FETAL NEO M
JI J. Matern.-Fetal Neonatal Med.
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BP 563
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WC Obstetrics & Gynecology
SC Obstetrics & Gynecology
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PT J
AU Pernow, Y
Granberg, B
Sääf, M
Weidenhielm, L
AF Pernow, Y
Granberg, B
Sääf, M
Weidenhielm, L
TI Osteoblast dysfunction in male idiopathic osteoporosis
SO CALCIFIED TISSUE INTERNATIONAL
LA English
DT Article
DE osteoblast; male osteoporosis; osteocalcin; macrophage colony; stimulating

factor; parathyroid hormone-related peptide
ID bone-mineral density; growth-factor-i; receptor expression; protein expression; estradiol levels; serum estradiol; binding-protein; messenger-rna; men; cells
AB The etiology of primary osteoporosis in young and middle-aged men is unknown. We have studied osteoblast function in cells derived from men with idiopathic osteoporosis and in control cells from age-matched men with osteoarthrosis. Osteoblasts were isolated from transiliac bone biopsies. Osteoblast function was measured as vitamin D-stimulated osteocalcin production and production of cytokines and factors involved in osteoclast activation and bone formation. Cell proliferation was measured as H-3-thymidine incorporation. Parathyroid hormone-related peptide (PTHrP) mRNA was measured using reverse-transcriptase polymerase chain reaction. In osteoporotic men, bone mineral density at the femoral neck was correlated to in vitro production of osteocalcin. Osteoblasts from osteoporotic men produced significantly less osteocalcin after vitamin D stimulation but had increased production of macrophage colony-stimulating factor (M-CSF) compared to controls. The osteocalcin response was negatively correlated to production of M-CSF, interleukin-6, and C-terminal propeptide of type I collagen. Basal H-3-thymidine incorporation was similar in cells from osteoporotic patients and controls. PTHrP (10(-9)M) significantly increased cell proliferation in control cells but not in osteoporotic cells. Basal PTHrP mRNA levels were significantly higher in osteoporotic cells than in cells from controls. The results are in agreement with previous histomorphologic studies indicating that men with idiopathic osteoporosis have an osteoblast dysfunction with decreased osteocalcin production and increased production of factors stimulating osteoclast activation. This indicates a catabolic cellular metabolic balance leading to negative bone turnover, resulting in osteoporosis. The cause of such cellular dysfunction needs further evaluation.
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NR 36
TC 29
Z9 33

U1 0
U2 4
PU SPRINGER
PI NEW YORK
PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
SN 0171-967X
EI 1432-0827
J9 CALCIFIED TISSUE INT
JI Calcif. Tissue Int.
PD FEB 15
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Castañeda, S
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TI Bone mineral measurements of subchondral and trabecular bone in healthy and osteoporotic rabbits
SO SKELETAL RADIOLOGY
LA English

DT Article
DE osteoporosis; subchondral bone; trabecular bone; bone mineral density; rabbit
ID x-ray absorptiometry; dual-photon absorptiometry; dxa-systems qdr-1000; animal-models; ovariectomized rats; in-vivo; density; precision; accuracy; osteoarthritis
AB Introduction: Experimental models of osteoporosis in rabbits are useful to investigate anabolic agents because this animal has a fast bone turnover with predominant remodelling over the modelling processes. For that purpose, it is necessary to characterize the densitometric values of each type of bony tissue. Objective: To determine areal bone mass measurement in the spine and in trabecular, cortical and subchondral bone of the knee in healthy and osteoporotic rabbits. Design: Bone mineral content and bone mineral density were measured in lumbar spine, global knee, and subchondral and cortical bone of the knee with dual energy X-ray absorptiometry using a Hologic QDR-1000/W densitometer in 29 skeletally mature female healthy New Zealand rabbits. Ten rabbits underwent triplicate scans for evaluation of the effect of repositioning. Osteoporosis was experimentally induced in 15 rabbits by bilateral ovariectomy and postoperative corticosteroid treatment for 4 weeks. Identical dual energy X-ray absorptiometry (DXA) studies were performed thereafter. Results: Mean values of bone mineral content at the lumbar spine, global knee, subchondral bone and cortical tibial metaphysis were: 1934 +/- 217 mg, 878 +/- 83 mg, 149 +/- 14 mg and 29 +/- 7.0 mg, respectively. The mean values of bone mineral density at the same regions were: 298 +/- 24 mg/cm(2), 455 +/- 32 mg/cm(2), 617 +/- 60 mg/cm(2) and 678 +/- 163 mg/cm(2), respectively. Bone mineral content and bone density of healthy rabbits followed a normal distribution at the four skeletal regions studied. Precision after triplicate repositioning yielded a coefficient of variation ranging from 2.6% to 3.8%. The least significant change ranged between 7.3% and 10.7%. Bone mineral density measured at the four different skeletal regions correlated significantly. Bone mineral density in osteoporotic rabbits was significantly lower in the four regions studied than that in controls, rendering a T-score of, respectively, -2.0 +/- 1.1 in the lumbar spine, -2.2 +/- 2.1 in the global knee, -1.9 +/- 0.6 in the subchondral bone, and -5.7 +/- 3.1 in the cortical tibia ($P < 0.05$). Conclusions: DXA is a reliable and precise method to evaluate the bone mass in rabbits. Our results also suggest that subchondral bone is a bone of mixed densitometric characteristics with marked cortical bone predominance.
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NR 59
TC 121
Z9 140
U1 0
U2 13
PU SPRINGER
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PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
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J9 SKELETAL RADIOL

JI Skeletal Radiol.
PD JAN 15
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DI 10.1007/s00256-005-0022-z
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WC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
SC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
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PT J
AU Lo, GH
Zhang, Y
McLennan, C
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AF Lo, G. H.
Zhang, Y.
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TI The ratio of medial to lateral tibial plateau bone mineral density and compartment-specific tibiofemoral osteoarthritis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE bone mineral density; osteophytes; joint space narrowing; sclerosis
ID fractal signature analysis; knee osteoarthritis; cancellous bone; subchondral bone; postmenopausal osteoporosis; disease progression; cartilage damage;

marrow lesions; dynamic load; women
AB Introduction: Bone is thought to play an important role in osteoarthritis (OA) pathophysiology. Our aim was to look at specific features of CA and their relation to the ratio of medial:lateral tibial plateau bone mineral density (M:L BMD Ratio). Methods: We examined our research question in the Framingham OA Study Cohort. All participants had BMDs and weight-bearing plain radiographs of the knees (2002-2005). M:L BMD Ratios were calculated using BMD from medial and lateral regions in the tibial plateau. Knee x-rays were read for osteophytes (OSTs), joint space narrowing (JSN), and sclerosis (Osteoarthritis Research Society International (OARSI) scoring system). Knees were classified as having medial and/or lateral JSN if they had JSN >= 1 in the medial and/or lateral tibiofemoral compartments, respectively. Medial and/or lateral OSTs were defined as medial and/or lateral tibial and/or femoral OSTs >= 2, respectively. Medial sclerosis and lateral sclerosis were defined as medial and lateral tibial sclerosis >= 1, respectively. We performed a logistic regression with medial JSN as the outcome and with M:L BMD Ratio groups as predictor variables, using the median group as the referent. Analyses were adjusted for age, sex, and body mass index (BMI). Generalized estimating equations were used to adjust for correlation between knees. Identical analyses were performed with medial OSTs, medial sclerosis, lateral JSN, lateral OSTs, and lateral sclerosis as the outcomes. Results: Mean age of 1612 subjects (3048 knees) was 63.9 (Standard Deviation (SD) +/- 8.9), 56% were women, and mean BMI was 28.5 (SD +/- 5.5). M:L BMD Ratio was positively associated with medial JSN (P for linear trend <0.0001) and negatively associated with lateral JSN (P for linear trend <0.0001). The relations of the ratio with medial and lateral OSTs were j-shaped with P for quadratic trends <0.0001. There were also strong associations between M:L BMD Ratio and compartment-specific sclerosis (P for linear trends <0.0001) with most knees with medial and lateral sclerosis being in the highest and lowest M:L BMD Ratio groups, respectively. Conclusion: In summary, the extremes of the M:L BMD Ratio are strongly associated with individual radiographic features of OA. These findings add to existing evidence supporting the importance of understanding bone in OA pathophysiology. (C) 2006 OsteoArthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 32
TC 54
Z9 60
U1 0
U2 4
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584
EI 1522-9653
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD OCT 15
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BP 984
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PG 7
WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
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UT WOS:000240953500004
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TI Rapid multifocal chondrolysis after liver transplantation in four patients
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID destructive osteoarthritis; idiopathic chondrolysis; hip-joint; disease
AB Background: Favourable clinical outcomes achieved with liver transplantation may be jeopardised by corticosteroid-induced osteoarticular complications, such as osteoporosis or aseptic osteonecrosis. Case report: A previously unreported joint complication in liver transplant recipients is described. Methods: Retrospective study of liver transplant recipients in whom destructive joint disease developed, identified among 330 symptomatic patients out of a total of 1260 managed over a 15 year period (November 1984-January 2000) in a university based liver transplantation centre. Results: In four patients (23-56 years), rapid chondrolysis developed 2-12 years after transplantation in more than three weightbearing or non-weightbearing joints free of radiological features of avascular osteonecrosis, evidence of infection, or defined inflammatory arthritis. Pathological examination of five hip joints and one knee joint found no evidence of infection or inflammation. Six joint replacement procedures were performed successfully in three patients. Conclusion: Clinicians managing liver transplant recipients, and perhaps recipients of other organs, should be aware that rapid chondrolysis may develop. The pathogenesis of this rare complication is unclear.
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NR 14
TC 2
Z9 2
U1 0
U2 0
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PI AMSTERDAM
PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
SN 0003-4967
EI 1468-2060
J9 ANN RHEUM DIS
JI Ann. Rheum. Dis.
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WC Rheumatology
SC Rheumatology
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PT J
AU Gurney, B
Boissonnault, WG
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AF Gurney, B
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TI Differential diagnosis of a femoral neck/head stress fracture
SO JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY
LA English
DT Article
DE bone scan; imaging; MRI; physical therapy examination
ID of-the-literature; negative bone-scan; insufficiency fractures; hip pain; neck; runner; head; osteoporosis; injury
AB Study Design: Resident's case problem. Background: Identifying stress fractures of the hip can be a challenging differential diagnosis. Pain presentation is not always predictable and radiographs may not show the fracture, especially during its early stages. Hip stress fractures left untreated can displace and necessitate open reduction internal fixation or total hip arthroplasty. Diagnosis: A 70-year-old woman presented to the physical therapy clinic with complaints of right hip pain. She had been evaluated by a physician and radiographs of the hip, which revealed some arthritic changes, were otherwise normal. Upon examination, the physical therapist observed an antalgic gait, a noncapsular pattern of limitation of hip motion, an empty painful end feel at the end range of motion (ROM) for hip abduction, external rotation, and flexion, and extreme tenderness to palpation over the anterior hip region. The therapist suspected a more pernicious problem than osteoarthritis and discussed his suspicion with the physician. The physician subsequently requested an MRI that revealed a femoral neck and head stress fracture that was later confirmed with a bone scan. The patient was provided with a walker for ambulation with a non-weight-bearing status for 6 weeks, after which she returned to physical therapy for progressive weight bearing and strengthening. She was discharged with a relatively pain-free hip and was ambulating with a cane. A 2-month follow-up examination revealed a pain-free hip and a return to all premorbid activities, including ambulation without an assistive device. Discussion: The presence of a normal radiograph of the hip should not be considered conclusive in ruling out a stress fracture in the hip region. The current case demonstrates how careful evaluation can reveal occult pathologies and prevent potentially catastrophic morbidity.
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NR 67
TC 11
Z9 11
U1 0
U2 6
PU J O S P T
PI ALEXANDRIA
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EI 1938-1344
J9 J ORTHOP SPORT PHYS
JI J. Orthop. Sports Phys. Ther.
PD FEB 15
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VL 36
IS 2
BP 80
EP 88
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WC Orthopedics; Rehabilitation; Sport Sciences
SC Orthopedics; Rehabilitation; Sport Sciences
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UT WOS:000235042700005
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PT J
AU Kalichman, L
Livshits, G
Kobyliansky, E
AF Kalichman, Leonid
Livshits, Gregory
Kobyliansky, Eugene

TI Association between morbidity and skeletal biomarkers of biological aging
SO HUMAN BIOLOGY
LA English
DT Article
DE osseographic score; morbidity skeletal aging; Chuvashians
ID bone-mineral density; population biology; general-practice; osteoarthritis; disease; age; comorbidity; prevalence; determinants; osteoporosis
AB The Osseographie Scoring System (OSS) is a synthetic measure of skeletal aging that combines osteoporotic and osteoarthritic changes of the hand. The OSS is used to evaluate biological age in a population. The aim of the present study was to evaluate the association between certain chronic morbidities and the skeletal biomarker of biological aging. We performed a population-based study on a large sample of individuals who were receiving no medications to treat or prevent chronic morbidities [668 male (age 18-89 years) and 608 female (age 18-81 years) Chuvashians]. Morbidity data obtained from the individuals' medical records was sorted into 16 categories. A one-way ANOVA was used to elucidate the association between morbidity and age-adjusted OSS score. Statistically significant differences between means of OSS scores in affected vs. nonaffected individuals were found in the rheumatic diseases group. Ischemic heart disease, pulmonary diseases, traumatic brain injuries, and gynecological diseases also showed differences; however, after correction for multiple testing, the results were statistically nonsignificant. We conclude, that individuals who suffer from the mentioned chronic morbidities will show a higher degree of skeletal aging. Further research is needed to clarify the biological mechanisms of association between certain types of morbidities and changes in skeletal aging.
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Z9 6
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PU WAYNE STATE UNIV PRESS
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J9 HUM BIOL
JI Hum. Biol.
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WC Anthropology; Biology; Genetics & Heredity
SC Anthropology; Life Sciences & Biomedicine - Other Topics; Genetics & Heredity
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PT J
AU Zoli, A
Lizzio, MM
Capuano, A
Massafra, U
Barini, A
Ferraccioli, G
AF Zoli, Angelo
Lizzio, Marco M.
Capuano, Anna
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TI Osteoporosis and bone metabolism in postmenopausal women with osteoarthritis of the hand
SO MENOPAUSE-THE JOURNAL OF THE NORTH AMERICAN MENOPAUSE SOCIETY
LA English
DT Article
DE hand osteoarthritis; postmenopausal osteoporosis; bone metabolism; DEXA
ID mineral density; knee osteoarthritis; collagen metabolism; elderly-men; population; markers
AB Objective: Osteoarthritis and osteoporosis are two major health problems affecting postmenopausal women. Epidemiological observations seem to demonstrate a possible inverse relationship between osteoarthritis and osteoporosis. Erosive osteoarthritis (EOA) of the hand is a destructive form of primary osteoarthritis. This study evaluated bone mineral density and bone

metabolism changes in erosive and nonerosive hand osteoarthritis women. Design: Fifty-five women (mean age, 59 years; body mass index, 23 +/- 1.4 kg/m(2)) who had been postmenopausal for an average of 9 years and who presented with hand osteoarthritis according to American College of Rheumatology criteria were enrolled in the study; 15 women showed clinical and radiological evidence of hand EOA. Twenty women matched for age, age at menopause, and body mass index formed the control group. Bone mineral density (g/cm(2)) was measured at the hip and lumbar spine using dual-energy x-ray absorptiometry. Serum and urinary calcium and phosphate, serum 25-hydroxyvitamin D, parathyroid hormone, osteocalcin, and urinary breakdown products of bone matrix (CrossLaps) were analyzed. Results: Women with hand EOA had a statistically significant lower T- and Z-score L2-L4 value than non-hand EOA women and controls ($P<0.01$). Moreover, postmenopausal women with hand EOA had higher significant percentage of osteoporosis at lumbar spine when compared with non-hand EOA postmenopausal women and controls. Any statistically significant difference in osteocalcin and CrossLaps serum levels was noted among women with hand EOA, hand osteoarthritis, and controls. Conclusion: Our data suggest that postmenopausal women with clinical and radiological EOA are at risk for development of osteoporosis.

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U2 8
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SN 1072-3714
EI 1530-0374
J9 MENOPAUSE
JI Menopause-J. N. Am. Menopause Soc.
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WC Obstetrics & Gynecology
SC Obstetrics & Gynecology
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PT J
AU Brownie, S
AF Brownie, Sonya
TI Predictors of dietary and health supplement use in older Australians
SO AUSTRALIAN JOURNAL OF ADVANCED NURSING
LA English
DT Article
DE aged; elderly; complementary medicines; dietary supplements; health surveys
ID vitamin-d deficiency; knee osteoarthritis; mineral supplements; fish-oil; glucosamine; progression; prevalence; people; trends; 3-year
AB Objective: This study aimed to identify the health conditions and symptoms that predicted dietary and health supplement use in older Australians. Design: Almost 2,500 Australians aged 65 years and over were randomly selected from the 2000 Australian Electoral Commission roll. All states and territories were proportionally represented in the sample. Data were obtained using a self-administered postal survey. Subjects: Approximately 1,200 individuals (51% males and 49% females) aged between 65-98 years completed the survey. Results: At the time of survey, 43% (n=548) reported using some form of supplement. Supplement use was significantly associated with gender (female) and chronic musculoskeletal ailments such as arthritis, osteoporosis and generalised back or neck problems. A diagnosis of hypertension or a heart condition were significant barriers to supplement use in this sample. The most common potential drug-supplement interaction was between calcium supplements and antihypertensives. Conclusion: Older supplement users may be of the opinion that supplements offer relief from the pain and suffering associated with their medical problems. If so, current supplement patterns would indicate that they are misguided. Nurses have an important role to play in encouraging older individuals to disclose their use of supplements to all health professionals involved in their continuing care.
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NR 51
TC 21
Z9 22
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PU AUSTRALIAN NURSING FEDERATION
PI KINGSTON
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J9 AUST J ADV NURS
JI Aust. J. Adv. Nurs.
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DI
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WC Nursing
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PT J
AU Mückley, T
Hofmann, G
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AF Mueckley, Thomas
Hofmann, Gunther
Buehren, Volker
TI Tibiotalar arthrodesis with the tibial compression nail
SO EUROPEAN JOURNAL OF TRAUMA AND EMERGENCY SURGERY
LA English
DT Article
DE tibiotalar arthrodesis; compression nail; intramedullary fixation; dowel technique
ID ankle arthrodesis; screw-fixation
AB Objective: Arthrodesis of the ankle joint in proper position (neutral position in respect to flexion/extension, 5 degrees external rotation, 0-5 degrees of valgus). Pain-free weight bearing of the affected limb. Indications: Painful osteoarthritis of the ankle joint resistant to conservative approaches even in the presence of poor bone quality of the distal tibia such as after pilon fractures and osteoporosis. Failure of other methods of internal fixation. Contra indications: Osteitis. Partial necrosis of the talar dome. Medullary canal of tibia not patent. Surgical Technique: Lateral approach and resection of lateral malleolus. If the joint position is normal, removal of articular cartilage of tibia and talus. If axial correction is necessary, wedge resection of articular surfaces with underlying bone. Opening of proximal tibial medullary canal, insertion of compression nail into tibia and talus. Compression osteosynthesis and cancellous bone grafting. Alternatively, the arthrodesis can be achieved with the dowel technique. Results: Between September 1993 and March 2001,137 patients (43 women, 94 men, average age 49 years [2179 years]) were operated. Follow-up of 110 patients after 42 months: successful bony fusion in 99 patients (90%). In six patients (5.5%) the goal of treatment was obtained after revision with recompression of the nail and bone grafting. Nonunion in five patients (4.5%). Complications: one tibial shaft fracture one hematoma needing evacuation, three superficial infections, and eight deep infections. Three patients developed an osteoarthritis of the subtalar joint. 70 patients (63.6%) reported an improvement, 37 (33.6%) no notable change of symptoms, and three (2.7%) a deterioration.
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U2 1
PU SPRINGER HEIDELBERG
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PA TIERGARTENSTRASSE 17, D-69121 HEIDELBERG, GERMANY
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PT J
AU Xu, JW
Rogers, MB
AF Xu, Junwang
Rogers, Melissa B.
TI Modulation of Bone Morphogenetic Protein (BMP) 2 gene expression by Sp1 transcription factors
SO GENE
LA English
DT Article
DE transcription; retinoids; evolution; embryonal carcinoma cells
ID embryonal carcinoma-cells; beta family members; retinoic acid; candidate genes; osteoporotic fracture; knee osteoarthritis; mineral density; apoptosis; receptor; growth
AB Changes in Bone Morphogenetic Protein (BMP) 2 gene expression and activity have been linked to many pathological conditions including cancer, osteoarthritis, and birth defects. BMP2 gene polymorphisms have been linked to osteoporosis and osteoarthritis. Sp1 and related proteins are widely expressed regulators of gene expression whose transcription activating abilities vary in different cells and on different genes. We present data indicating that the ratio of Sp1 and Sp3 isoforms varies in cells that express or do not express BMP2. Furthermore, the orientation of Sp1 sites conserved between four orders of mammals influences BMP2 expression. Together our data indicate that the stoichiometry and orientation of Sp1 and Sp3 complexes on the BMP2 promoter influence BMP2 expression. (c) 2007 Elsevier B.V. All rights reserved.
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AU Selim, AA
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AF Selim, Abdulhafez A.
Castaneda, Julian L.
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TI The role of osteoactivin-derived peptides in osteoblast differentiation
SO MEDICAL SCIENCE MONITOR
LA English
DT Article
DE osteoactivin-derived peptides; osteoblast differentiation; RGD domain; casien kinase II
ID signal-transduction; extracellular-matrix; in-vitro; expression; integrins; kinase; phosphorylation; bioinformatics; proliferation; osteoporosis
AB Bacground In our previous studies, we found that osteoactivin (OA) plays an important role in the regulation of osteoblast differentiation in vitro. Our studies

also suggested that the region of OA protein that contains an RGD motif might play a vital role in the function of OA in osteoblast differentiation. In this study, we examined the functional role of OA-derived peptide containing the RGD motif (OA-D) in osteoblast differentiation. Material/Methods: For this purpose, we designed another peptide, termed OA-E, that has sequence similar to OA-D but with glutamic acid (E) instead of aspartic acid (D). The effect of OA-E peptide on osteoblast differentiation was exmined. Interestingly , OA-E peptide induced osteoblast differentiation in a manner similar to OA-D peptide. These data suggested that the effect of OA-derived peptides is RGD independent and it could be dependent on other features in the amino acid sequence of these peptides. Results OA-D peptide treatment markedly induced osteoblast differentiation markers in vitro compared to cultures treated with negative control peptide (NCP). Interestingly, OA-E peptide induced osteoblast differentiation in a manner similar to OA-D peptide. These data suggested that the effect of OA-derived peptides is RGD independent and it could be dependent on other features in the amino acid sequence of these peptides. Since phosphorylation of amino acid residues in proteins aiid peptides plays a major role in biological systems, the phosphorylation pattern of amino acid sequences of OA-derived peptides and OA protein family members were examined using bioinformatic analysis tools. We found that OA-derived peptides and OA protein family members have serine residue, close to c-terminus and might be phosphorylated with casein kinase II. Casein kinase II is known to phosphorylate many osteoblast-related proteins that regulate osteoblast development and differentiation such as osteopontin and vitronectin. Conclusions Collectively, these data showed both OA-D and OA-E peptides significantly induced osteoblast differentiation in vitro and that effect is RGD independent.
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PT J
AU Rabenda, V
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Mariani, Anne-Marie
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TI Prevalence and impact of osteoarthritis and osteoporosis on health-related quality of life among active subjects
SO AGING CLINICAL AND EXPERIMENTAL RESEARCH
LA English
DT Article
DE osteoarthritis; osteoporosis; prevalence; quality of life; workplace
ID survey sf-36; arthritis; questionnaire; reliability; validation; disability; fractures; diseases; burden

AB Background and aims: To assess the prevalence and impact of osteoarthritis (OA) and osteoporosis (OP) on health-related quality of life (HRQOL) among active subjects employed in the public workforce in Belgium. Methods: A cohort of 3440 subjects employed by the Liege City Council was prospectively followed for 6 months. The employees were asked to fill in a monthly log in a health record book, of data regarding their healthcare consumption due to OA and OP. HRQOL was assessed using the Medical Outcomes Study Short Form-36 (SF-36). Results: 1811 subjects (52.6%) filled in at least one questionnaire. The mean duration of follow-up was 3.46 months. The self-reported prevalence of OA and OP at entry to the study were respectively 34.1% and 5.3%. 3.6% of subjects reported suffering from both OA and OP. Subjects with OA and both OA and OP had significantly lower scores on all SF-36 dimensions compared with normal subjects, reflecting a worse HRQOL. The OP group had significantly lower mean scores for physical functioning and pain compared with controls. Subjects with both OA and OP had significantly lower values for physical functioning, physical role and pain when compared with the OA and OP groups. Conclusions: The results of this survey of a large sample of active subjects show that self-reported osteoarthritis and osteoporosis are common in the workplace. Both diseases have a major impact on health-related quality of life compared with that of people without self-reported musculoskeletal diseases.
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Rueger, David C.
TI OP-1/BMP-7 in cartilage repair
SO INTERNATIONAL ORTHOPAEDICS
LA English
DT Review
ID bone morphogenetic protein-7; human articular chondrocytes; human osteogenic protein-1; nucleus pulposus; disc height; defects; proteoglycan; op-1; insulin-like-growth-factor-1; interleukin-1
AB Three years ago we published a book chapter on the role of bone morphogenetic proteins (BMPs) in cartilage repair. Since that time our understanding of the function of osteogenic protein-1 (OP-1) or BMP-7 in cartilage homeostasis and repair has substantially improved and therefore we decided to devote a current review solely to this BMP. Here we summarise the information accumulated on OP-1 from in vitro and ex vivo studies with cartilage cells and tissues as well as from in vivo studies of cartilage repair in various animal models. The primary focus is on articular chondrocytes and cartilage, but data will also be presented on nonarticular cartilage, particularly from the intervertebral disc. The data show that OP-1 is a unique growth factor which, unlike other members of the same BMP family, exhibits in addition to its strong pro-anabolic activity very prominent anti-catabolic properties. Animal studies have demonstrated that OP-1 has the ability to repair cartilage in vivo in various models of articular cartilage degradation, including focal osteochondral and chondral defects and osteoarthritis, as well as models of degeneration in intervertebral disc cartilage. Together our findings indicate a significant promise for OP-1 as therapeutic in cartilage repair.
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PT J
AU Johnson, ML
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Kamel, Mohamed A.
TI The Wnt signaling pathway and bone metabolism
SO CURRENT OPINION IN RHEUMATOLOGY
LA English
DT Review
DE beta-catenin; arthritis; low-density lipoprotein receptor related protein 5; sclerostin; Wnt
ID frizzled-related protein-1; parathyroid-hormone; controls osteoblast; stem-cells; receptor; lrp5; gene; expression; mass; inhibition
AB Understanding the role that the Writ signaling pathways play in the regulation of bone metabolism offers great promise for the developmental of new paradigms and pharmaceutical strategies for the treatment of various 1 diseases such as osteoporosis, rheumatoid arthritis and osteoarthritis. Progress in this regard has already been made.
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TI Morphology, mechanisms and pathology of musculoskeletal ageing
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LA English
DT Review
DE musculoskeletal; ageing; bone; cartilage; intervertebral disc; ligament; matrix; cell biology
ID age-related-changes; human articular-cartilage; growth-factor-i; primary immunolocalization; chondrocyte senescence; matrix biosynthesis; target-cells; bone-density; stem-cells; expression
AB In general terms, the recognized alterations in circulating Immoral factors (hormones, cytokines, growth factors) that occur in ageing, coupled with innate cellular senescence exaggerated by the slow turnover of many connective tissue cell populations and the age-associated alterations in matrix molecule cross-linking, predispose the elderly to altered connective tissue biology. These changes can be profound, leading to poor mobility, altered ability to withstand cold, weakness and an increased risk of falls, fractures and age-associated

'degenerative' diseases, such as osteoarthritis and osteoporosis. As understanding of the causes of altered connective tissue function with age increases, it is becoming clearer that many of the predisposing factors (growth hormone, cytokines, load/life style) are potential targets for improving quality of life in the elderly. Copyright (c) 2007 Pathological Society of Great Britain and Ireland. Published by John Wiley & Sons, Ltd.
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NR 87

TC 89
Z9 118
U1 0
U2 18
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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J9 J PATHOL
JI J. Pathol.
PD JAN 15
PY 2007
VL 211
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BP 252
EP 259
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WC Oncology; Pathology
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GA 133JH
UT WOS:000244008700015
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PT J
AU Haugen, IK
Slatkowsky-Christensen, B
Orstavik, R
Kvien, TK
AF Haugen, I. K.
Slatkowsky-Christensen, B.
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Kvien, T. K.
TI Bone mineral density in patients with hand osteoarthritis compared to population controls and patients with rheumatoid arthritis
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID radiographic knee osteoarthritis; estrogen-receptor gene; elderly-men; vitamin-d; osteoporotic fractures; iliac crest; women; association; hip; classification
AB Objectives: Several studies have revealed increased bone mineral density (BMD)

in patients with knee or hip osteoarthritis, but few studies have addressed this issue in hand osteoarthritis (HOA). The aims of this study were to compare BMD levels and frequency of osteoporosis between female patients with HOA, rheumatoid arthritis (RA) and controls aged 50-70 years, and to explore possible relationships between BMD and disease characteristics in patients with HOA. Methods: 190 HOA and 194 RA patients were recruited from the respective disease registers in Oslo, and 122 controls were selected from the population register of Oslo. All participants underwent BMD measurements of femoral neck, total hip and lumbar spine (dual-energy x ray absorptiometry), interview, clinical joint examination and completed self-reported questionnaires. Results: Age- ,weight- and height-adjusted BMD values were significantly higher in HOA versus RA and controls, the latter only significant for femoral neck and lumbar spine. The frequency of osteoporosis was not significantly different between HOA and controls, but significantly lower in HOA versus RA. Adjusted BMD values did not differ between HOA patients with and without knee OA, and significant associations between BMD levels and symptom duration or disease measures were not observed. Conclusion: HOA patients have a higher BMD than population-based controls, and this seems not to be limited to patients with involvement of larger joints. The lack of correlation between BMD and disease duration or severity does not support the hypothesis that higher BMD is a consequence of the disease itself.
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NR 55
TC 29
Z9 32
U1 0
U2 3
PU BMJ PUBLISHING GROUP
PI LONDON
PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR, ENGLAND
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EI 1468-2060
J9 ANN RHEUM DIS
JI Ann. Rheum. Dis.
PD DEC 15
PY 2007
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IS 12
BP 1594
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DI 10.1136/ard.2006.068940
PG 5
WC Rheumatology
SC Rheumatology
GA 230UW
UT WOS:000250902600008
PM 17502356
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PT J
AU Sah, AP
Thornhill, TS
LeBoff, MS
Glowacki, J

AF Sah, A. P.
Thornhill, T. S.
LeBoff, M. S.
Glowacki, J.
TI Correlation of plain radiographic indices of the hip with quantitative bone mineral density
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE bone density; cortical thickness; femoral geometry; osteoarthritis; osteoporosis; radiographs
ID vitamin-d deficiency; singh index; femoral-neck; trabecular pattern; osteoporosis; geometry; osteoarthritis; fractures; femur; women
AB Radiographic parameters of the hip can be useful as an indication of bone mineral density at the femoral neck. Measurements available from routine hip radiographs were correlated with DXA values. Although radiographs are not a test for osteoporosis, measurements of cortical thickness provide information useful for referral for osteoporosis assessment. Introduction Plain hip radiographs are widely used for evaluation of hip pathology in osteoarthritis. A purpose of this study was to determine whether there are relationships between radiographic parameters of bone structure and bone mineral density T-scores, as assessed by dual energy x-ray absorptiometry (DXA). Methods Pre-operative radiographs of 32 postmenopausal, osteoarthritic women undergoing hip arthroplasty were evaluated. Radiographic parameters including the Singh index, Dorr classification, canal-to-calcar ratio, and cortical thickness indices (CTI) were measured and compared with T-score, serum 25 hydroxyvitamin D levels, body mass index (BMI), and body weight. Results The T-score at the femoral neck for type C bone was significantly lower than that of type A (p= 0.041). The CTIs were correlated positively with T-scores for anteroposterior radiographs (r= 0.5814, p= 0.0005), and for lateral radiographs (r= 0.571, p= 0.0006). A threshold for lateral CTI set at a value of <== 0.40 results in sensitivity of 0.85 and specificity of 0.79 to segregate the osteoporotic and non-osteoporotic patients. Conclusion Femurs with small radiographic cortical thickness indices had lower T-scores. Finding a radiographic hip cortical thickness index (LAT) with a value of <= 0.40 should be an alert for referral for osteoporosis evaluation and bone mineral density testing.
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NR 21
TC 103
Z9 123
U1 0
U2 5
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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BP 1119
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 186NY
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PT J
AU Javier, RM
Hachulla, É
AF Javier, Rose-Marie
Hachulla, Eric
TI Osteoarticular manifestations of Gaucher disease in adults:: pathophysiology and treatment
SO PRESSE MEDICALE
LA English
DT Article
ID enzyme replacement therapy; bone-marrow involvement; skeletal involvement; mineral density; type-1; scintigraphy; miglustat; crisis; complications; cytokines
AB Gaucher disease frequently has severe osteoarticular manifestations that may be disabling. Ischemic phenomena cause the most serious complications and lead to irreversible lesions. Aseptic osteonecrosis of the hip is the most disabling complication; it causes intense early bone pain and often joint collapse and secondary osteoarthritis in young adults. Localized or systemic bone fragility explains osteopenia, osteoporosis, and fractures (vertebral collapse with irreversible kyphosis causing chronic morbidity). Although no double-blind randomized studies hove assessed the bone effects of enzyme replacement therapy it has been shown effective in reducing bone pain in about half of all treatment-naive patients within 1 to 2 years and in improving bone mineral density after 3 years. In open-label trials, substrate reduction therapy (miglustat) reduced both bone pain and bone morrow infiltration. Specific treatment for bone fragility, with bisphosphonates for example, should be considered after rigorous individualized evaluation and assessment of other risk factors.
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NR 78
TC 9
Z9 9
U1 1
U2 2
PU MASSON EDITEUR
PI MOULINEAUX CEDEX 9
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SN 0755-4982
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J9 PRESSE MED
JI Presse Med.
PD DEC 15
PY 2007
VL 36
IS 12
BP 1971
EP 1984
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PG 14
WC Medicine, General & Internal
SC General & Internal Medicine
GA 249YA
UT WOS:000252265500010
PM 17498916

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ER

PT J
AU Sampsel, SL
MacLean, CH
Pawlson, LG
Scholle, SH
AF Sampsel, S. L.
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TI Methods to develop arthritis and osteoporosis measures: a view from the National Committee for Quality Assurance (NCQA)
SO CLINICAL AND EXPERIMENTAL RHEUMATOLOGY
LA English
DT Article
DE arthritis; osteoporosis; performance measurement; accountability; quality improvement
AB Objective. Performance measurement at various levels of the health care system promotes improved processes that can result in the provision of more consistent and effective care. This chapter articulates the methodology and criteria utilized in measures development to ensure accountability and serve the itformation needs of physicians, health care systems, health plans and consumers, using arthritis and osteoporosis as example conditions. Methods. Observational studies conducted to assess the validity and feasibility of performance measures focused oil arthritis and osteoporosis. Clinical expert panels were convened to develop measure specifications based on guidelines and evidence supporting critical aspects of care. The aspects of care that were assessed included: DMARD utilization for patients with rheumatoid arthritis; appropriate gastrointestinal prophylaxis for patients utilizing NSAIDS: comprehensive osteoarthritis care; comprehensive symptom assessment and medical management of Woman over 65 years who experienced a bone fracture. Results. The implementation of performance measures for key aspects of arthritis and osteoporosis care is challenged by the availability of administrative data. However, potential for improvement is evident in each of the areas studied. Conclusions. The key challenge to the feasibility of arthritis performance measures is the lack of administrative data to identify the eligible population. Administrative data capture suffers as a result of under-coding and under-recognition of arthritis. Consensus around a single set of measures creates a powerful tool for focusing on key components of care as a basis for quality improvement and allows,for a valid comparison of care within and across health care settings.
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NR 4
TC 10
Z9 10
U1 0
U2 0
PU CLINICAL & EXPER RHEUMATOLOGY
PI PISA
PA VIA SANTA MARIA 31, 56126 PISA, ITALY
SN 0392-856X
EI 1593-098X
J9 CLIN EXP RHEUMATOL
JI Clin. Exp. Rheumatol.
PD NOV-DEC 15
PY 2007
VL 25
IS 6
BP S22
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DI
PG 6
WC Rheumatology
SC Rheumatology
GA 235QA
UT WOS:000251248200006
PM 18021503
DA 2026-02-10
ER

PT J
AU Newman, AM
AF Newman, Ann Mabe
TI Arthritis and sexuality
SO NURSING CLINICS OF NORTH AMERICA
LA English
DT Article
ID rheumatoid-arthritis
AB More than 120 kinds of arthritis exist. This article focuses on the more common types of musculoskeletal disorders, which are osteoarthritis, rheumatoid arthritis,

and osteoporosis. Because of the pain, fatigue, and joint stiffness associated with arthritis, physical intimacy may be difficult. These symptoms can be ameliorated during sexual activity by good communication between the partners, timing medication, and experimenting with different positions. Clients may need to be taught to be creative and to be willing to experiment. Learning the relaxation response, in addition to fantasizing and guided imagery, can enhance the sexual experience for people who have arthritis.
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PU W B SAUNDERS CO-ELSEVIER INC
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J9 NURS CLIN N AM
JI Nurs. Clin. North Am.
PD DEC 15
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BP 621
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WC Nursing
SC Nursing
GA 241TX
UT WOS:000251679800009
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ER

PT J
AU Alexandersen, P
Karsdal, MA
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AF Alexandersen, Peter
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TI Strontium ranelate reduces the urinary level of cartilage degradation biomarker CTX-II in postmenopausal women
SO BONE
LA English
DT Article
DE strontium ranelate; postmenopausal women; CTX-II; type II collagen degradation; RCT
ID estrogen replacement therapy; cynomolgus monkeys; subchondral bone; osteoarthritis; osteoporosis
AB Objective: Strontium ranelate significantly decreases the risk of osteoporotic fractures. The objective of the present study was to investigate whether strontium ranclate (2 g/day) also affects cartilage brakedown as measured by urinary marker

of cartilage degradation, designated CTX-II. Methods: A subgroup of 2617 postmenopausal osteoporotic women (aged 75.7 +/- 4.4 years) were selected from the TROPOS phase III study on the basis of a urinary sampling reported at each visit during the first three years of the study. When included in TROPOS, they were randomized to strontium ranelate or placebo in a double-blind fashion for 3 years. A calcium and vitamin D supplement was also provided to the subjects during the study. A marker of collagen type II degradation (CTX-II) corrected for urinary creatinine (CTX-II/cr.) was assessed at regular intervals throughout the study in 1310 patients in strontium ranelate group and 1307 patients in placebo group. Results: The response in CTX-II depended on time ($p < 0.0001$), and this time dependency differed statistically significantly between groups (time x treatment) ($p < 0.0003$). In addition, there was a statistically significant difference between treatments ($p < 0.0001$). The difference in the response of CTX-II/cr. appeared already after three months, with the strontium ranelate-treated subjects having approximately 15-20% lower values than the placebo-treated subjects for the remaining study period ($p < 0.0001$). Conclusion: Treatment with strontium ranelate significantly decreases urinary excretion of CTX-II, a marker of cartilage destruction. Further studies are warranted to investigate an effect on cartilage formation and symptoms of osteoarthritis. (c) 2006 Elsevier Inc. All rights reserved.
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U1 0
U2 8
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA
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J9 BONE
JI Bone
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Scutellari, PN
Galeotti, R
Leprotti, S
Ridolfi, M
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AF Scutellari, P. N.
Galeotti, R.
Leprotti, S.
Ridolfi, M.
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TI The crowned dens syndrome. Evaluation with CT imaging
SO RADIOLOGIA MEDICA

LA English
DT Article
DE crowned dens syndrome; CPPD crystal deposition disease; transverse ligament of the atlas; computed tomography
ID dihydrate deposition disease; crystal deposition; transverse ligament; pyrophosphate arthropathy; rheumatoid-arthritis; calcium; identification; calcification; myelopathy; flavum
AB Purpose. The purpose of this study was to verify the value of computed tomography (CT) in the diagnosis of the "crowned dens" syndrome, not only in crystal deposition diseases, but also in other rheumatic or nonrheumatic conditions. Materials and methods. Thirty-eight patients (15 men and 23 women; mean age 55 years; age range 35-79) with neck pain were examined and divided into two groups: (1) patients already identified as rheumatic and referred for further investigation of the atlantoaxial region; (2) patients with symptoms confined to the cervical spine, with inconclusive radiographic findings. Unenhanced CT of the cervical spine (Tomoscan SR 7000 Philips, Eindhoven, Netherlands) was performed in all patients. There were 11 cases of rheumatoid arthritis (ten women and one man), two calcium pyrophosphate dihydrate crystal deposition disease (both women), one of systemic sclerosis (a woman), one of osteoarthritis (a man), one of seronegative arthritis (a man), four of neoplasm (one woman and three men) with suspected cervical involvement, one (a man) of haematological disease (lymphoma), one (a woman) of menopausal osteoporosis, ten (five men and five women) of recent or previous trauma with suspected involvement of the skull base and first cervical vertebrae and six of unknown painful cervical dysfunction (three men and three women). Results. CT demonstrated calcific deposits around the dens in 12 patients (three men and nine women), in the transverse and alar ligaments, and in the anterior atlantooccipital membrane. CT revealed horseshoe- or crown-like calcification surrounding the odontoid process. In our series, other rheumatic diseases, especially rheumatoid arthritis, showed similar irregular calcifications of the atlantoaxial joint. Discussion. In calcium pyrophosphate dihydrate (CPPD) crystal deposition disease, the spine may be the only site of involvement, generally asymptomatic. Crystals located in the transverse ligament of the atlas give rise to the crowned dens syndrome, usually in patients affected by severe degenerative lesions of the atlantoaxial joint and peripheral chondrocalcinosis. Symptoms may be absent, or a neurological compressive syndrome may develop. Symptoms tend to worsen with age. The diagnosis is not always easy, as the symptoms are similar to those of other diseases, such as meningitis, cervicobrachial pain, occipitotemporal headache, calcific tendinitis of the longus colli muscle, spondylodiscitis and retropharyngeal abscess. Conclusion. CT is the gold standard in identifying crowned dens syndrome, as it is able to depict the shape and site of calcification and any bone erosions. Radiography of other joints (wrist, knee, pubic symphysis) may help to ascertain whether the disease is due to calcium pyrophosphate dehydrate or hydroxyapatite crystals, and is therefore recommended for routine patient management. Magnetic resonance

imaging (MRI) is indicated for the study of neurological complications.
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NR 40
TC 47
Z9 54
U1 0
U2 3
PU SPRINGER-VERLAG ITALIA SRL
PI MILAN
PA VIA DECEMBRIO, 28, MILAN, 20137, ITALY
SN 0033-8362
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J9 RADIOL MED
JI Radiol. Med.
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WC Radiology, Nuclear Medicine & Medical Imaging
SC Radiology, Nuclear Medicine & Medical Imaging
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PT J
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Dominguez, J.
TI Histomorphometric study of femoral heads in hip osteoarthritis and osteoporosis
SO HISTOLOGY AND HISTOPATHOLOGY
LA English
DT Article
DE bone histomorphometry; femoral heads; osteoarthritis; osteoporosis
ID trabecular bone; upper end; femur; fractures; density; age
AB During the period from 2000 to 2003, ninety eight samples of femoral heads were collected. In these pieces, two zones were analyzed: a high- load zone (the hard core of the head) and a low- load zone (the round ligamentum teres zone). As control group, 6 femoral heads (3 of women and 3 of men), proceeding from autopsy in peoples without pathological antecedents and youngs, were studied. After the samples had been embedded in methylmethacrylate and stained, they were subjected to an histomorphometric study. By means of histomorphometry, trabecular bone volume (TBV) and osteoid substance (OSV) was determined. Statistically significant differences were found as for peripheral osteoid volume (low- load zone) (p= 0.036) and trabecular bone volume, both peripheral and central. Both volumes decreased in osteoporotic samples and in those from women (p= 0.000), in comparison with control group. Regarding the relationship between the high- load and low- load zone, significant data were obtained. The high- load zone had a greater trabecular bone volume than the low- load zone, regardless of the pathology and sex, but this increase was more pronounced in the arthrosic samples and in those from men. Additionally, this trabecular bone volume in the high- load zone decreased with increasing age of the donor (p= 0.037), when the control group is compared. In sum, we observed a reduction in the formation of TBV and OSV in osteoporosis but also a decrease in the arthrosic, in samples from older subjects, in women, and in the low- load zone of the samples, when the control group is compared. These data suggest the coexistence of both

pathologies, which is more pronounced in older subjects and women.
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PU F HERNANDEZ
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WC Cell Biology; Pathology
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AU Ayhan, F
Sqyupek, F
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AF Ayhan, Figen
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Tonuk, Burak
Gokoglu, Figen
Yorgancioglu, Rezan
TI Decreased handgrip strength and increased hip osteoporosis in patients with Alzheimer's disease
SO NEUROSCIENCES

LA English
DT Article
ID elderly-women; risk-factors; depression; fracture; muscle; mass; deficiency; exercise; dementia; people
AB Objectives: To evaluate the causes of disability in the musculoskeletal system, and depression in patients with Alzheimer's disease (AD) and healthy controls. Methods: A case-controlled study in which healthy elderly patients (n=56) and patients with AD (n=75) attending the Geriatric Rehabilitation Unit of Ankara Education and Research Hospital, Department of Physical Medicine and Rehabilitation were compared on several measures of disability including handgrip strength, knee x-rays graded for osteoarthritis, dual-energy x-ray absorptiometry results for osteoporosis, and depression scores in the training period of 2003-2004. Results: Handgrip strength values were significantly lower in patients with AD compared to the controls (19.4 versus 37 pounds force). Osteoporosis in the femoral neck was also more prominent in patients with AD compared to controls (T-scores: -2.1 versus -1.2). Handgrip strength was moderately correlated with femoral neck T-scores (r=0.6, p=0.001). Conclusion: Strategies should be developed to protect patients with AD from osteoporosis and reduced muscle strength.
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NR 32
TC 4
Z9 6
U1 0
U2 8
PU RIYADH ARMED FORCES HOSPITAL
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TI Arthroscopic collagen meniscus implant results at 6 to 8 years follow up
SO KNEE SURGERY SPORTS TRAUMATOLOGY ARTHROSCOPY
LA English
DT Article
DE meniscus; collagen; arthroscopic; implant; DJD (degenerative joint disease)
ID partial meniscectomy; allograft transplantation; contact area; knee; regeneration; replacement; cartilage; ligament
AB Meniscal substitution is a fundamental procedure to prevent osteoarthritis of the knee after massive meniscectomy. Stone, Steadman and Rodkey have developed a bioreadsorbable collagen matrix (CMI) which acts as a scaffold to restore the original medial meniscal. The objective of this study was to prospectively evaluate the results of CMI implantation at a follow up from a minimum of 6 to a maximum of 8 years. Eight patients (mean age 25) were

evaluated at a final observation point from 6 to 8 years after CMI implantation. Inclusion criteria were an irreparable meniscal tear or a previous meniscectomy involving the medial meniscus. Follow up evaluation included Cincinnati Knee Rating Scale (CKRS), IKDC, subjective evaluation and X-ray and MRI control. There were no complications related to the device. All patients were able to return to day activities without limitations 3 months after surgery. Both subjective CKRS score and objective IKDC score showed improvement in all cases except one patient with an ACL re-injury. In two cases scores were slightly worse from 2 years after surgery to the final observation point. The other five cases obtained maximum score at final follow-up. In four cases the absence of pain remained until the final observation point, while in four cases a low entity of pain was described at long term follow-up. MRI showed in five cases mixoid degeneration signal, two had normal signal with reduced size, while one patient had no recognizable implant. Six patients had preserved cartilage and articular space, with no changes respect to pre-op control. Arthroscopic second look evaluation has been performed in three cases, revealing in two cases the presence of the implant, although with a reduced size respect to the original one, while in one case the CMI was almost disappeared. Our small series of eight patients prospectively followed from 6 to 8 years of follow-up has shown highly satisfactory results. Although the aspect of the implant was mostly abnormal, the implant may have helped reduce the deterioration of the knee joint at final observation time.
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NR 50
TC 107
Z9 127
U1 0
U2 16
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0942-2056
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J9 KNEE SURG SPORT TR A
JI Knee Surg. Sports Traumatol. Arthrosc.
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TI Validity and reliability of the Italian version of the ECOS-16 questionnaire in postmenopausal women with prevalent vertebral fractures due to osteoporosis
SO CLINICAL AND EXPERIMENTAL RHEUMATOLOGY
LA English
DT Article
DE osteoporosis; ECOS-16; vertebral fractures; quality of life; questionnaire
ID quality-of-life; low-back-pain; health-status; cultural-adaptation; european foundation; knee osteoarthritis; pulmonary-function; validation; disability; euroqol
AB Objective To investigate the reliability and validity of the Italian version of ECOS-16 (Assessment of health related quality of life in osteoporosis) in comparison to other questionnaires in postmenopausal women with osteoporosis. Methods A cross-sectional multicentre study was carried out among postmenopausal women with osteoporosis who were attending primary care centres and hospital outpatient clinics. The patient group included 234 females (mean age 69 years, range 4889) who presented vertebral fractures due to osteoporosis. The control group consisted of 24 asymptomatic osteoporotic subjects matched for age with the patient group. The psychometric properties of the questionnaires were evaluated in terms of feasibility, validity (construct validity and discriminant validity) and internal consistency. Test-retest reliability was analysed for 196 outpatients who reported that their general health status due to osteoporosis had not changed after one week. In all patients the ECOS-16, the SF-36 (Medical Outcomes Study Short Form-36), EUROQoL (EQ-5D), mini-OQLQ (mini-Osteoporosis Quality of Life Questionnaire), and RMDQ (Roland-Morris Disability Questionnaire) were administered, and all clinical variables and sociodemographic variables were taken into account. Construct and discriminant

validity were assessed by Spearman's correlations, the Wilcoxon rank sum test, the Kruskal Wallis test and by receiver operating characteristic (ROC) curves. Internal consistency was evaluated using Cronbach's alpha and the test-retest reliability was evaluated by intra-class correlation coefficients (ICCs). Results 96.9% of the patients answered all items of the ECOS-16 questionnaires. The mean administration time was 10 minutes. Factor analysis yielded two factors that accounted for 88.4% of the explained variance in the ECOS-16 questionnaire. The first factor was the ECOS-16 Physical Component Score (PCS) (45.9% of the explained variance) and the second factor was the ECOS-16 Mental Component Score (MCS) (42.4% of the explained variance). The inter-item correlation between the two factors was 0.48. Significant correlations were found between the scores of similar domains or subscales of the ECOS-16 and SF-36, EQ-5D and mini-OQLQ, supporting the concept of convergent construct validity. The total ECOS-16 score progressively increased with the number of prevelant vertebral fractures ($p < 0.001$) and the effect of the first fracture was already statistically significant ($p < 0.01$). On ROC curve analysis the total ECOS- 16 score showed the highest performance among the different questionnaires in discriminating between patients with vertebral fractures and controls with no fractures. In the reliability study, internal consistency within the domain of ECOS-16 was generally good, with Chronbach's alpha values ranging from 0.81 to 0.89. Test-retest reliability was 0.87 for the total ECOS-16 score. Conclusions The Italian version of the ECOS-16 questionnaire was demonstrated to have good psychometric properties and could offer a useful tool in research and routine clinical practice to evaluate HRQoL in post-menopausal women with osteoporosis. A full validation of the psychometric properties will require data on its sensitivity to change.

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PU CLINICAL & EXPER RHEUMATOLOGY
PI PISA
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PT J

AU Darmawan, J
AF Darmawan, John
TI Recommendations from the Community Oriented Program for Control of Rheumatic Disease for data collection for the measurement and monitoring of health in developing countries
SO CLINICAL RHEUMATOLOGY
LA English
DT Review
DE COPCORD; education; epidemiology; risk factors; treatment
ID arthritis
AB The history of the World Health Organization-International League of Associations for Rheumatology Community Oriented Program for Control of Rheumatic Disease (COPCORD) for developing countries is described. Due to lack of funding and manpower, the COPCORD concept is designed in three stages for execution. Stage I is a community-based epidemiology of rheumatism in three phases by rheumatologist but non-epidemiologist to save time, money, and costs. Stage II is education of treatment of rheumatism. Stage III is the identification of environmental and genetic risk factors of musculoskeletal disorders to prevent or minimize rheumatism. Since 1980, COPCORD has collected valid community-based epidemiological data, which are published in 42 papers since 1985 in various international rheumatology journals. The publications were from 19 developing countries in the Asia Pacific region, South America, Europe, and Africa. Stage II education is deemed to be more appropriate handled by allied rheumatology health professionals. Low back pain, osteoarthritis, osteoporosis, and rheumatoid arthritis (RA) are the priority. The projected prevalence of RA in > 4 billion people in countries of the South are between 8 and 12 million patients and urgently require adequate control. After 5-15 years, the consequences of RA are disability, reduced productivity, loss of career and income, lowered quality of life, and early mortality notwithstanding existing therapy. The application of the Biologic DMARDs in RA in the Third World for reasons of treatment costs from $15,000 to $25,000 per patient per year is not feasible. The majority of the Third World population has an income of less than US$1.00 per day to less than US$2,000.00 per capita. The COPCORD has designed and applied successfully the step-down bridge guidelines of intravenous and oral combination of five generic immunosuppressants in prospective observational studies of rheumatoid factor positive RA in Indonesia, China, and Iran. Recommendations of the COPCORD stages are submitted.
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AU Pérez-López, FR
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TI Vitamin D and its implications for musculoskeletal health in women:: An update

SO MATURITAS
LA English
DT Review
DE vitamin D; vitamin D insufficiency; menopause; osteopenia; osteoporosis; osteoarthritis; neuromuscular function; fracture; secondary hyperparathyroidism; inadequate diet; aging; sun exposure; bisphosphonates; vitamin D and falls; postmenopausal women; musculoskeletal health
ID bone-mineral density; randomized controlled-trial; parathyroid-hormone levels; white premenopausal women; postmenopausal women; d deficiency; d supplementation; d inadequacy; secondary hyperparathyroidism; hypovitaminosis-d
AB Vitamin D is a hormone that controls phosphorus, calcium, and bone metabolism and neuromuscular function. Vitamin D synthesis is a process in which the skin, liver, and kidney are sequentially involved. The vitamin D pool is completed by the amount taken with food and supplements. Vitamin D deficiency causes osteopenia, precipitates and exacerbates osteoporosis, causes a painful disease, osteornalacia, and increases muscle weakness, which worsens the risk of falls and fractures. A high prevalence of vitamin D insufficiency exists in the apparently healthy population, osteoporotic patients, and patients with prior fractures. Factors contributing to low vitamin D levels include low sunlight exposure, decreased skin synthesis and intestinal absorption, and inadequate diet. The simplest way to correct hypovitaminosis is adequate nutrition and supplements. However, few patients with osteoporosis and/or fractures, receive adequate supplements. Vitamin D insufficiency may alter the regulatory mechanisms of parathyroid hormone and may induce a secondary hyperparathyroidism that increases the risk of osteoporosis and fractures, although the necessary degree of this is not established. Monitoring of serum 25-hydroxyvitamin D levels is the only way to assess vitamin D status. The ideal healthy blood levels of 25-hydroxyvitamin D are controversial, although a range from 30 to 60 ng/mL is widely accepted. The role of vitamin D supplementation is to provide humans with the nutrient in an amount closer to the biological norm for our species. This amount of vitamin D results in optimal function of many aspects of health, including balance and muscle strength, thus reducing the risk of fracture beyond what is possible via the quality and quantity of bone itself. (c) 2007 Published by Elsevier Ireland Ltd.
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PT J
AU Alvarez-Nemegyei, J
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TI Risk factors for pes anserinus tendinitis/bursitis syndrome - A case control study
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DT Article
DE bursitis; knee; risk factors; tendinitis; pes anserinus
ID diabetes-mellitus; tendino-bursitis; knee; osteoarthritis
AB Background: Pes anserinus tendinitis/bursitis (PATB) is a frequent cause of knee pain. Its predisposing factors are still controversial. Objectives: Assess the effect of a set of demographic, clinical, somatometric, and biomechanical factors on the risk for PATB. Methods: A case control design was used to evaluate the association between clinically diagnosed PATB and the presence of diabetes; knee osteoarthritis (and its radiographic severity); obesity; knee collateral, and anteroposterior instability; and knee or hindfoot malalignment. Results: Twenty-two consecutive, incident PATB patients were included; all were females 62.1 +/- 11.5-year-old (limits 45-82). Thirty-eight sex- and age-matched (59.8 +/- 9.4-year-old; P = 0.41) subjects were used as controls-, these had asymptomatic osteoporosis (20) and a series of rheumatic syndromes (18). There was no difference in prevalence of diabetes, knee osteoarthritis, obesity, knee instability, varus knee deformity, and hindfoot malalignment between cases and controls. Furthennore, no difference in overall, lateral, medial, and patellofemoral knee osteoarthritis radiographic severity mean score was found between study groups. The presence of vaigus knee deformity alone (OR: 5.2; 95% CI: 1.1-25.5), or in combination with collateral instability (OR: 6.0; 95% CI: 1.4 26.0), was identified as associated with PATB. Conclusions: Valgus knee deformity, alone or in association with collateral instability, seems to be a risk factor for PATB. No association was found between PATB and some conditions previously reported as predisposing factors such as diabetes, knee osteoarthritis, and obesity. PATB should be kept in mind as a highly probable diagnosis in mature women with medial knee pain and valgus knee deformity.
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U1 0
U2 19
PU LIPPINCOTT WILLIAMS & WILKINS
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PT J
AU Schneider, S
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Schiltenwolf, M
Rau, C
AF Schneider, Sven
Mohnen, Sigrid M.
Schiltenwolf, Marcus
Rau, Christoph
TI Comorbidity of low back pain: Representative outcomes of a national health study in the Federal Republic of Germany
SO EUROPEAN JOURNAL OF PAIN
LA English
DT Article
DE back pain; etiology; morbidity; prevalence; theoretical models
ID musculoskeletal pain; working population; general-population; united-states; older-adults; prevalence; disability; morbidity; community; impact
AB Background: Unlike other biopsychosocial risk factors, the role of comorbidity in low back pain is largely unknown. Aims: The purpose is (1) to generate prevalence data on back pain in the total adult population and (2) to identify the most common physical comorbidities in subjects with back pain. This paper also (3) analyses the gender-specific and age-specific comorbidity structure. Methods: The National German Health Survey is the first study to provide the basis for a representative nationwide analysis of back pain prevalence and the associated comorbidities. The net sample comprises a total of 7124 Germans aged 18-79. Results: One in three Germans (34%) experienced back pain during the seven days prior to being interviewed. The one-year prevalence rate is 59%. All the morbidities investigated by us are more common in subjects with back pain than in individuals without back pain. The most common comorbidities associated with back pain are musculoskeletal disorders like rheumatoid arthritis, osteoarthritis and osteoporosis, followed by cardiovascular and cerebrovascular disease. Conclusions: The present study investigating 31 physical diseases is the most extensive analysis to date oil the topic of back pain and comorbidity. This is an attempt to cast light on the tangled relationships involved in developing and coping with back pain. In view of the large percentage of unspecific back pain, we believe it is important for physicians treating back pain to extend their history and diagnostic analysis skills to embrace comorbidities related to the back pain. (C) 2006 European Federation of Chapters of the International Association for the Study of Pain. Published by Elsevier Ltd. All rights reserved.

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TC 90
Z9 102
U1 0
U2 5
PU W B SAUNDERS CO LTD
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J9 EUR J PAIN
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SC Anesthesiology; Neurosciences & Neurology
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PT J
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TI Effects of boron poisoning on thymus development in Gushi chickens
SO INDIAN VETERINARY JOURNAL
LA English
DT Article
AB Boron is important for mineral metabolism, brain functioning and performance, and prevention of both osteoporosis and osteoarthritis. It is also anti-inflammation and antitumor and it lowers fat content (Lulin and Yuan Ying, et al., 2003). Boron poisoning can cause special pathological changes in the stomach, kidney, liver, brain, skin, lung, and other parts (Wang, 1996). Research has shown that high boron levels has detrimental effects on animal health and production performance. At present, there are no reports yet of the influence of boron poisoning on an animal's immune system. The effects of boron poisoning on thymus development in chickens were studied and reported in this paper.
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Z9 14
U1 0
U2 0
PU INDIAN VETERINARY JOURNAL
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PA 11 CHAMIERS RD, CHENNAI 600 035, INDIA
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PT J
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TI Digital X-ray radiogrammetry better identifies osteoarthritis patients with a low bone mineral density than quantitative ultrasound
SO EUROPEAN RADIOLOGY
LA English
DT Article
DE bone mineral density; osteoarthritis; quantitative ultrasound; dual energy x-ray absorptiometry; digital x-ray radiogrammetry

ID age-related-changes; rheumatoid-arthritis; osteoporotic fractures; postmenopausal women; elderly-women; radiographic absorptiometry; knee osteoarthritis; population; risk; hand
AB This study assessed the ability of quantitative ultrasound (QUS) and digital X-ray radiogrammetry (DXR) to identify osteopenia and osteoporosis in patients with knee osteoarthritis (OA). One hundred and sixty-one patients with painful knee OA (81 men, 80 women; age 62.6 +/- 9.2 years, range 40-82 years) were included in this cross-sectional study and underwent dual-energy X-ray absorptiometry (DXA) of both hips and the lumbar spine, QUS of the phalanges and calcanei of both hands and heels, and DXR using radiographs of both hands. Unpaired t-test, Mann-Whitney U test, ROC analysis and Spearman's rank correlation were used for comparisons and correlation of methods. Using DXA as the reference standard, we defined a low bone mineral density (BMD) as a T-score <=-1.0 at the lumbar spine or proximal femur. In contrast to phalangeal or calcaneal QUS, DXR was able to discriminate patients with a low BMD at the lumbar spine ($p < 0.0001$) or hips ($p < 0.0001$). ROC analysis showed that DXR had an acceptable predictive power in identifying OA patients a low hip BMD (sensitivity 70%, specificity 71%). Therefore, DXR used as a screening tool could help in identifying patients with knee OA for DXA.
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U2 1
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PI NEW YORK
PA 233 SPRING STREET, NEW YORK, NY 10013 USA
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PT J
AU Chubinskaya, S
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AF Chubinskaya, S.
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TI Synergistic effect of IGF-1 and OP-1 on matrix formation by normal and OA

chondrocytes cultured in alginate beads
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE human normal chondrocytes; human OA chondrocytes; growth factors; extracellular matrix
ID human articular chondrocytes; growth-factor-i; osteogenic protein-1 promotes; vi collagen; gene-expression; factor-beta; bovine cartilage; oncostatin-m; adult; insulin-like-growth-factor-1
AB Objective: Growth factor therapy may be useful for stimulation of cartilage matrix synthesis and repair. Thus, the purpose of our study was to further understand the effect of combined insulin-like growth factor-1 (IGF-1) and osteogenic protein-1 (OP-1) treatment on the matrix synthesized by human adult normal and osteoarthritic (OA) chondrocytes. Design: Chondrocytes were isolated post-mortem from articular cartilage from tali of normal human donors and femoral condyles of OA patients undergoing knee replacement surgery. Cells were cultured in alginate beads for 21 days in four experimental groups: (1) "mini-ITS" control; (2) 100 ng/ml IGF-1; (3) 100 ng/ml OP-1; (4) IGF-1 + OP-1, each at 100 ng/ml. Beads were processed for histological (Safranin O and fast green), morphometrical and immunohistochemical (aggrecan, decorin, type I, II, VI, and X collagens, and fibronectin accumulation) analyses. Results: Histology showed that IGF-1 alone did not induce substantial matrix production. OP-1 alone caused a considerable matrix formation, but the highest matrix accumulation by normal and OA chondrocytes was found when OP-1 and IGF-1 were added together. Morphometrical analysis indicated larger matrices produced by OA chondrocytes than by normal cells under the combined treatment. All tested matrix proteins were more abundant in the combination group. Type X collagen was detected only under the combined OP-1 and IGF-1 treatment and was present at very low levels. Type I collagen was found only in OA chondrocytes. Conclusions: The results obtained in the current study suggest that combined therapy with IGF-1 and OP-1 may have a greater potential in treating cartilage defects seen in OA than use of either growth factor alone. (C) 2006 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 52
TC 66
Z9 79
U1 0
U2 6
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584
EI 1522-9653
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD APR 15
PY 2007
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IS 4
BP 421
EP 430
DI 10.1016/j.joca.2006.10.004
PG 10
WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 153KE
UT WOS:000245431500009
PM 17126570
DA 2026-02-10
ER

PT J
AU [Anonymous]
AF [Anonymous]
TI Selected abstracts of the 5th osteoporosis and osteoarthritis congress
SO EKLEM HASTALIKLARI VE CERRAHISI-JOINT DISEASES AND RELATED SURGERY
LA English
DT Article
NR 0
TC 0
Z9 0
U1 0
U2 0
PU TURKISH JOINT DISEASES FOUNDATION
PI KAVAKLIDERE
PA BUGDAY SOKAK 6-27, KAVAKLIDERE, ANKARA 06700, TURKEY
SN 1305-8282
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J9 EKLEM HAST CERRAHISI
JI Eklem Hast. Cerrahisi
PD JUN 15
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BP 156
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WC Orthopedics; Surgery
SC Orthopedics; Surgery
GA 279EQ
UT WOS:000254338200011

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ER

PT J
AU Vanhoenacker, FM
Snoeckx, A
AF Vanhoenacker, F. M.
Snoeckx, A.
TI Bone marrow edema in sports: General concepts
SO EUROPEAN JOURNAL OF RADIOLOGY
LA English
DT Article
DE bone marrow edema; MRI; sport injury
ID transient osteoporosis; knee osteoarthritis; fracture; bruises; injury; ankle; mechanism; runners; pattern; lesions
AB This paper will discuss the value of medical imaging in the detection and follow-up of bone marrow edema (BME), resulting from acute and chronic trauma in sports. MR imaging is the only imaging technique that allows direct evaluation of bone marrow edema in sports medicine. The use of fat Suppressed T2-weighted or STIR images is particularly appropriate to detect bone marrow edema. The extent of bone marrow edema reflects the biomechanics of trauma. Compressive forces between two bony structures will result in extensive areas of bone marrow edema, whereas distraction forces provoke more subtle areas of bone marrow edema at the insertion of supporting structures of joints. In most clinical situations, a combination of compression and distraction forces is present, causing a complex pattern of bone marrow edema. A meticulous pattern approach of the distribution of these bone marrow changes around a joint can reveal in most instances the underlying mechanism of trauma. This may be helpful to analyze which joint supporting structures may be at risk. In the acute setting, plain radiography and CT scan may have an additional role in the detection of small avulsion fractures occurring at the site of minor areas of bone marrow edema. The clinical significance and natural history of bone marrow edema is still a matter of debate.
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NR 35
TC 34
Z9 43
U1 0
U2 8
PU ELSEVIER IRELAND LTD
PI CLARE
PA ELSEVIER HOUSE, BROOKVALE PLAZA, EAST PARK SHANNON, CO, CLARE, 00000, IRELAND
SN 0720-048X
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J9 EUR J RADIOL
JI Eur. J. Radiol.
PD APR 15
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WC Radiology, Nuclear Medicine & Medical Imaging
SC Radiology, Nuclear Medicine & Medical Imaging
GA 162IG
UT WOS:000246079700003
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PT J
AU van den Akker-Scheek, I
Zijlstra, W
Groothoff, JW
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Bulstra, SK
Stevens, M
AF van den Akker-Scheek, Inge
Zijlstra, Wiebren
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Bulstra, Sjoerd K.

Stevens, Martin
TI Groningen orthopaedic exit strategy: Validation of a support program after total hip or knee arthroplasty
SO PATIENT EDUCATION AND COUNSELING
LA English
DT Article
DE total hip arthroplasty; total knee arthroplasty; validation; support program; rehabilitation outcome
ID osteoporosis prevention; social support; self-efficacy; rehabilitation; community; discharge; impact; osteoarthritis; interventions; translation
AB Objective: Validation of the program theory of the Groningen orthopaedic exit strategy (GOES), a theory-driven program aiming to improve the rehabilitation of total hip and knee arthroplasty patients after shortened hospital stay. First part of the program theory is the action theory, hypothesising that the GOES treatment positively influences the mediating variables (self-efficacy, social support, pain-coping). The second part, the conceptual theory, hypothesis a positive relationship between these variables and the outcome variables (ADL functioning, physical activity behaviour, quality of life). Methods: Patients were randomly assigned to the GOES or control groups. Questionnaires were used to assess mediating and outcome variables in 103 patients (50 GOES, 53 controls) pre-operatively, and 6 and 26 weeks post-operatively. Results: No difference was seen between the two groups in terms of changes between pre-operative and post-operative mediating variables (action theory). Moderate-to-large correlations explaining reasonable amount of variance (22%, 25%, 56%) were found between the mediating and outcome variables (conceptual theory). Conclusion: The conceptual theory is supported; however, as the treatment did not influence the mediating variables (action theory), it has no added value in its current form. Practice implications: The treatment needs to be adjusted; it is discussed that individualised treatment could be more effective. (c) 2006 Elsevier Ireland Ltd. All rights reserved.
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WEINBERGER M, 1991, J RHEUMATOL, V18, P849
NR 37
TC 12
Z9 12
U1 1
U2 13
PU ELSEVIER IRELAND LTD
PI CLARE
PA ELSEVIER HOUSE, BROOKVALE PLAZA, EAST PARK SHANNON, CO, CLARE, 00000, IRELAND
SN 0738-3991
EI 1873-5134
J9 PATIENT EDUC COUNS
JI Patient Educ. Couns.
PD FEB 15
PY 2007
VL 65
IS 2
BP 171
EP 179
DI 10.1016/j.pec.2006.07.004
PG 9
WC Public, Environmental & Occupational Health; Social Sciences, Interdisciplinary
SC Public, Environmental & Occupational Health; Social Sciences - Other Topics
GA 138MB
UT WOS:000244365600005
PM 16965889
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ER

PT J
AU Hanna, F
Teichtahl, AJ
Bell, R

Davis, SR
Wluka, A
O'Sullivan, R
Cicuttini, FM
AF Hanna, Fahad
Teichtahl, Andrew J.
Bell, Robin
Davis, Susan R.
Wluka, Anita
O'Sullivan, Richard
Cicuttini, Flavia M.
TI The cross-sectional relationship between fortnightly exercise and knee cartilage properties in healthy adult women in midlife
SO MENOPAUSE-THE JOURNAL OF THE NORTH AMERICAN MENOPAUSE SOCIETY
LA English
DT Article
DE osteoarthritis; cartilage; physical activity; knee exercise
ID early radiographic osteoarthritis; physical-activity; surface-area; volume; risk; association; defects; age; hip
AB Objective: Exercise has been strongly promoted for the prevention of the major diseases of aging in women, such as cardiovascular disease and osteoporosis. However, conflicting data exist as to whether exercise benefits joint health and thus helps protect against degenerative processes such as knee osteoarthritis. The aim of this study was to examine the cross-sectional relationship between exercise and knee joint cartilage in women at midlife. Design: A total of 176 women aged 40 to 67 years with no clinical knee osteoarthritis or history of significant knee injury were recruited from the community and had magnetic resonance imaging performed on their dominant knee to assess tibial cartilage volume and defects. The women completed a questionnaire to determine fortnightly exercise participation and frequency. Results: Fortnightly participation in exercise at an intensity that caused tachypnea and an increased pulse rate for at least 20 minutes was positively associated with the volume of the medial tibial cartilage (P = 0.02). There was a tendency for the frequency of exercise at this intensity to be positively associated with medial tibial cartilage volume (P = 0.07). Exercise participation was not significantly associated with the presence of knee cartilage defects. Conclusions: Participation in exercise that causes tachypnea and an increased pulse rate for at least 20 minutes was associated with greater medial tibial cartilage volume, but not knee cartilage defects in non-healthcareseeking women at midlife. More frequent exercise also tended to be associated with greater medial tibial cartilage volume. Although our findings need to be confirmed longitudinally, they provide further support for a beneficial effect of regular exercise on diseases related to aging.
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CR ALTMAN R, 1986, ARTHRITIS RHEUM-US, V29, P1039, DOI 10.1002/art.1780290816
Cicuttini FM, 2003, ARTHRITIS RHEUM-US, V48, P682, DOI 10.1002/art.10840
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*PUBL HLTH DIV, 2004, VICT BURD DIS STUD M, V0, P0
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Wluka A, 2002, ARTHRITIS RHEUM-US, V46, P2065, DOI 10.1002/art.10460
NR 24
TC 31
Z9 33
U1 0
U2 4
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 1072-3714
EI 1530-0374
J9 MENOPAUSE
JI Menopause-J. N. Am. Menopause Soc.
PD SEP-OCT 15
PY 2007
VL 14
IS 5
BP 830
EP 834
DI 10.1097/gme.0b013e31802f316b
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WC Obstetrics & Gynecology
SC Obstetrics & Gynecology
GA 209LB
UT WOS:000249388900008
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PT J
AU Glaser, C
Tins, BJ
Trumm, CG
Richardson, JB
Reiser, MF
McCall, IW
AF Glaser, C.
Tins, B. J.
Trumm, C. G.
Richardson, J. B.
Reiser, M. F.
McCall, I. W.
TI Quantitative 3D MR evaluation of autologous chondrocyte implantation in the knee: feasibility and initial results

SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE autologous chondrocyte implantation; MRI; knee; cartilage volume; quantification
ID articular-cartilage volume; focal chondral defects; joint cartilage; rheumatoid-arthritis; gender-differences; image data; thickness; osteoarthritis; repair; reproducibility
AB Objective: To evaluate the feasibility of quantitative magnetic resonance imaging (MRI) based follow-up of cartilage volumetric data in patients after autologous chondrocyte implantation (ACI). To provide results from a 1-year follow-up study. Methods: From 21 ACI patients sagittal FS 3D FLASH (50/11/30; 0.6 x 0.6 x 1.5 mm(3)) MRI knee data sets were obtained pre and 1 -year post-ACI surgery in the femoral condyles. After semi-automated segmentation and 3D reconstruction of the cartilage plates, cartilage volume, mean thickness and size of the cartilage-bone interface were calculated. Susceptibility artifacts were evaluated in all, intra-observer reproducibility was evaluated in six of the patients. Volumetric parameters were compared during follow-up and sensitivity to change was assessed for the total femur vs the separately evaluated medial/lateral portions of the femur. Results: Reproducibility error (coefficient of variation %) was 3.9%/4.4% for the med./lat. tibial and 5.1 % for the femoral cartilage volume. Susceptibility artifacts led to the exclusion of three out of the 21 patients, but were moderate in the remaining 18 patients, not preventing reproducible segmentation. In contrast to lack of significant change in the (non-operated) tibiae, a mean 6% increase of volume and thickness in the treated femora ($P < 0.001$ Wilcoxon) relative to the pre-OP data was observed. Sensitivity to change for the femur ranged from 0.74 to 2.60 for cartilage volume and thickness and was improved when evaluating only the treated portion of the femur in contrast to the total femur. Conclusion: Our data indicate that despite postoperative susceptibility artifacts quantitative evaluation of cartilage volumetric parameters can be performed in ACI patients. The technique is able to describe changes of these parameters over 1 year. Volumetric follow-up may help to identify altered disease progression. (c) 2007 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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Z9 13
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U2 4
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
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WC Orthopedics; Rheumatology
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GA 190JL
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TI Musculoskeletal conditions - What's new from Cochrane and how might this affect your practice?
SO AUSTRALIAN FAMILY PHYSICIAN
LA English
DT Article
ID children; density

AB Many general practitioners would suspect from their every day practice that musculoskeletal conditions such as osteoarthritis, rheumatoid arthritis and osteoporosis are common general practice clinical problems. This has been confirmed by research - an estimated 16.7/100 GP-patient encounters are for a musculoskeletal condition.(1) The costs to the community of these conditions are high, both economically and because they are a significant cause of morbidity and mortality.(2,3) Due to the high impact of musculoskeletal disorders, the World Health Organisation designated 2001-2010 as the 'bone and joint decade' and, since 2002, arthritis and related conditions have been an Australian National Health Priority Area.(4).
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TC 1
Z9 1
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U2 2
PU ROYAL AUSTRALIAN COLLEGE GENERAL PRACTITIONERS
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WC Primary Health Care; Medicine, General & Internal
SC General & Internal Medicine
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AU Min, LC
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AF Min, Lillian C.
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Reuben, David B.
TI Multimorbidity is associated with better quality of care among vulnerable elders
SO MEDICAL CARE
LA English
DT Article
DE multimorbidity; comorbidity; vulnerable elders; quality of care; quality indicators
ID older patients; medical conditions; functional status; blood-pressure; womens health; mortality; community; people; comorbidity; population
AB Background: Older patients with multiple chronic conditions may be at higher

risk of receiving poorer overall quality of care compared with those with single or no chronic conditions. Possible reasons include competing guidelines for individual conditions, burden of numerous recommendations, and difficulty implementing treatments for multiple conditions. Objectives: We sought to determine whether coexisting combinations of 8 common chronic conditions (hypertension, coronary artery disease, chronic obstructive pulmonary disease, osteoarthritis, diabetes mellitus, depression, osteoporosis, and having atrial fibrillation or congestive heart failure) are associated with overall quality of care among vulnerable older patients. Materials and Methods: Using an observational cohort study, we enrolled 372 community-dwel ling persons 65 years of age or older who were at increased risk for death or functional decline within 2 years. We included (1) a comprehensive measure (% of quality indicators satisfied) of quality of medical and geriatric care that accounted for patient preference and appropriateness in light of limited life expectancy and advanced dementia, and (2) a measure of multimorbidity, either as a simple count of conditions or as a combination of specific conditions. Results: Multimorbidity was associated with greaer overall quality scores: mean proportion of quality indicators satisfied increased from 47% for elders with none of the prespecified conditions to 59% for those with 5 or 6 conditions ($P < 0.0001$), after controlling for number of office visits. Patients with greater multimorbidity also received care that was better than would be expected based on the specific set of quality indicators they triggered. Conclusions: Among older persons at increased risk of death or functional decline, multimorbidity results in better, rather than worse, quality of care.
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NR 50
TC 116
Z9 129
U1 0
U2 16
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
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SC Health Care Sciences & Services; Public, Environmental & Occupational Health
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PT J
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AF Ameye, L. G.
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TI The chemical biomarkers C2C, Coll2-1, and Coll2-1NO2 provide complementary information on type II collagen catabolism in healthy and osteoarthritic mice
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID articular-cartilage; biochemical markers; synovial-fluid; in-vivo; joint; degradation; urinary; denaturation; osteoporosis; chondrocytes
AB Objective. Compared with wild-type (WT) mice, biglycan/fibromodulin double-deficient mice develop severe knee osteoarthritis. We undertook this study to compare type 11 collagen catabolism in the 2 genotypes and to compare the usefulness of 3 biomarkers of collagen degradation (C2C [also known as Col23/4C(long mono)] as well as the peptide Coll2-1 and its nitrated form, Coll2-1NO(2)) for evaluating collagen catabolism in vivo. Methods. In 15 WT mice and 15 biglycan/ fibromodulin double-deficient mice, we determined serum levels

of C2C at ages 66 and 141 days, and we determined serum levels of Coll2-1 and Coll2-1NO(2) at ages 49, 81, 95, and 141 days. Expression of the biomarkers in knee sections was examined using immunohistochemistry. Results. The mean concentrations of C2C and Coll2-1 were higher in biglycan/fibromodulin double-deficient mice at all time points. For C2C and Coll2-1, the ratio of the serum concentration in biglycan/ fibromodulin double-deficient mice to that in WT mice (the double-deficient:WT ratio) was constant over time and was similar to 1.63 and similar to 1.15, respectively. In contrast, the double-deficient:WT ratio for Coll2-1NO(2) varied and, depending on age, was >1 or <1. No significant correlation was found between the expression of the different biomarkers, except for a weak, negative correlation between Coll2-1NO(2) and C2C. In both genotypes, antibodies to each biomarker labeled some fibroblasts in the tendons and menisci as well as chondrocytes above the tidemark in articular cartilage. Growth plates were unstained. For each biomarker, extracellular staining was limited to fibrocartilage areas in the tendons and menisci in all mice and was limited to some focal lesions of the cartilage in biglyean/fibromodulin double-deficient mice. Conclusion. The different double-deficient:WT ratios observed with C2C, Coll2-1, and Coll2-1NO(2) in the absence of any correlation between the expression of the 3 biomarkers indicate that these biomarkers give complementary, rather than redundant, information about in vivo type 11 collagen catabolism.
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Yelin E, 2003, OSTEOARTHRITIS, V2nd, P17
NR 40
TC 28
Z9 31
U1 0
U2 5
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0004-3591
EI 1529-0131

J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
PD OCT 15
PY 2007
VL 56
IS 10
BP 3336
EP 3346
DI 10.1002/art.22875
PG 11
WC Rheumatology
SC Rheumatology
GA 221ZB
UT WOS:000250264800021
PM 17907187
DA 2026-02-10
ER

PT J
AU Geiger, F
Zimmermann-Stenzel, M
Heisel, C
Lehner, B
Daecke, W
AF Geiger, Florian
Zimmermann-Stenzel, Monique
Heisel, Christian
Lehner, Burkhard
Daecke, Wolfgang
TI Trochanteric fractures in the elderly: the influence of primary hip arthroplasty on 1-year mortality
SO ARCHIVES OF ORTHOPAEDIC AND TRAUMA SURGERY
LA English
DT Article
DE mortality risk; trochanteric femoral fractures; total hip replacement
ID unstable intertrochanteric fractures; bipolar prosthetic replacement; failed internal-fixation; proximal femoral nail; pertrochanteric fractures; intramedullary fixation; screw; femur; complications; morbidity
AB Introduction The aim of the study was to compare the mortality risk and complication rate after operative treatment of pertrochanteric fractures with primary arthroplasty, dynamic hip screw (DHS) or proximal femoral nail (PFN). Patients and methods Clinical records including X-rays of all patients with trochanteric femoral fractures, except pathologic fractures and a minimum age of 60 years, which were treated between 1992 and 2005 were entered in this

retrospective study. Of these 283 patients, 132 were treated by primary arthroplasty, 109 with a DHS and 42 with a PFN. Survival after 1 year and complications, which had to be treated within this period were our main outcome measurement. Influencing cofactors such as age, gender and comorbidities were reduced by multivariate logistic regression analysis. Results Mortality was significantly influenced by age, gender and amount of comorbidities but not by fracture classification. Primary hip arthroplasty did not bear a higher 1-year mortality risk than osteosynthesis in a multiple regression analysis. The main complication with DHS and PFN were cutting out of the hip screw and non-union with a revision rate of 12.8%. With the introduction of hemiarthroplasty, the postoperative dislocation rate decreased from 12 to 0%. Conclusion For stable fractures a dynamic hip screw (DHS) and for unstable fractures a short proximal femoral nail (PFN) can be recommended. The mortality risk of primary cemented arthroplasty did not differ significantly from the other treatment groups and because of its low complication rate it is a viable treatment option for trochanteric fractures if osteoporosis prevents from full weight bearing or if osteoarthritis makes further operations likely. Primary total hip replacement should be handled with care due to its significantly higher dislocation rate compared with hemiarthroplasty especially in unstable fractures.
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Zuckerman JD, 1996, NEW ENGL J MED, V334, P1519, DOI 10.1056/NEJM199606063342307
NR 35
TC 75
Z9 103
U1 0
U2 5
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0936-8051
EI 1434-3916
J9 ARCH ORTHOP TRAUM SU
JI Arch. Orthop. Trauma Surg.
PD DEC 15
PY 2007
VL 127
IS 10

BP 959
EP 966
DI 10.1007/s00402-007-0423-7
PG 8
WC Orthopedics; Surgery
SC Orthopedics; Surgery
GA 221NM
UT WOS:000250234600017
PM 17899138
DA 2026-02-10
ER

PT J
AU Charles, J
Britt, H
Fahridin, S
AF Charles, Janice
Britt, Helena
Fahridin, Salma
TI Chronic musculoskeletal problems managed in general practice
SO AUSTRALIAN FAMILY PHYSICIAN
LA English
DT Article
AB To identify chronic musculoskeletal (CM) problems we used a chronic conditions list(1) classified according to ICPC-2.(2) Conditions included: congenital anomalies, musculoskeletal syndromes, osteoarthritis, osteoporosis, malignant neoplasms, and other less common conditions such as lupus erythematosus and scleroderma. Among the 101 993 encounters recorded in BEACH between April 2005 and March 2006, there were 7389 at which 7597 CM problems were managed. Encounters at which CM problems were managed made up 7.3% of all encounters. These problems accounted for 5.0% of all problems managed and 43.3% of all musculoskeletal problems managed.
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RP Charles, J (通讯作者)，Univ Sydney, AIHW Australian GP Stat & Classificat Ctr, Sydney, NSW 2006, Australia.
CR Classification Committee of the World Organization of Family Doctors, 1998, ICPC2 INT CLASS PRIM, V0, P0
OHalloran J, 2004, FAM PRACT, V21, P381, DOI 10.1093/fampra/cmh407
NR 2
TC 6
Z9 6
U1 0

U2 1
PU ROYAL AUSTRALIAN COLLEGE GENERAL PRACTITIONERS
PI SOUTH MELBOURNE
PA 1 PALMERSTON CRESCENT, SOUTH MELBOURNE, VICTORIA 3205, AUSTRALIA
SN 0300-8495
EI
J9 AUST FAM PHYSICIAN
JI Aust. Fam. Physician
PD JUN 15
PY 2007
VL 36
IS 6
BP 392
EP 393
DI
PG 2
WC Primary Health Care; Medicine, General & Internal
SC General & Internal Medicine
GA 278LL
UT WOS:000254287100004
PM 17565393
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ER

PT J
AU Gordon, A
Southam, L
Loughlin, J
Wilson, AG
Stockley, I
Hamer, AJ
Eastell, R
Wilkinson, JM
AF Gordon, Andrew
Southam, Lorraine
Loughlin, John
Wilson, Anthony Gerard
Stockley, Ian
Hamer, Andrew J.
Eastell, Richard
Wilkinson, Jeremy Mark
TI Variation in the secreted frizzled-related protein-3 gene and risk of osteolysis and heterotopic ossification after total hip arthroplasty
SO JOURNAL OF ORTHOPAEDIC RESEARCH

LA English
DT Article
DE osteolysis; heterotopic ossification; total hip arthroplasty; genetic polymorphism; secreted frizzled-related protein-3
ID high-bone-mass; ectopic ossification; follow-up; in-vitro; osteoarthritis; osteoporosis; association; replacement; component; revision
AB Secreted frizzled-related protein-3 (sFRP3) antagonizes ligands that promote new bone formation in adult tissues. We examined whether variation in the FRZB gene that encodes sFRP3 is associated with development of osteolysis or heterotopic ossification (HO) after total hip arthroplasty (THA). Genomic DNA was extracted from 609 subjects (osteolysis group n = 268) at a mean of 11 years following cemented THA for idiopathic osteoarthritis and genotyped for the FRZB Arg200Trp and Arg324Gly polymorphisms. The Brooker classification was used to assess HO following primary THA in 563 of the subjects. The carriage rate of the FRZB 200Trp allele was 14.2% in subjects with osteolysis versus 21.0% in controls (p 0.041). The carriage rate of this allele was 21.7% in subjects with HO (n = 299) versus 12.0% in those without HO (p = 0.063). The odds ratio for osteolysis with carriage of FRZB 200Trp was 0.62 (95% CI 0.38 to 0.99; p = 0.049) and for HO was 1.64 (1.05 to 2.54;p 0.028), after adjustment for the effects of other risk factors associated with the development of osteolysis or HO. Variants in the FRZB 324 locus alone were not associated with osteolysis or HO. However, the most frequent haplotype (FRZB 200Arg:324Arg) was associated with osteolysis (OR 1.50,95% CI 1.09 to 2.07;p = 0.014). Our data suggest that the FRZB Arg200Trp locus may be a marker for pro-osteoblastic activity after THA. Carriage of the FRZB 200Trp allele is associated with a "positive" bone balance phenotype (osteolysis -: HO+). (C) 2007 Orthopaedic Research Society.
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Wilkinson JM, 2002, J ARTHROPLASTY, V17, P910, DOI 10.1054/arth.2002.34530
NR 25
TC 31
Z9 36
U1 0
U2 2
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0736-0266
EI 1554-527X
J9 J ORTHOP RES
JI J. Orthop. Res.
PD DEC 15
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WC Orthopedics
SC Orthopedics
GA 234QR
UT WOS:000251179300016
PM 17600823
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ER

PT J
AU Perilli, E
Baleani, M
Öhman, C
Baruffaldi, F
Viceconti, M
AF Perilli, E.
Baleani, M.
Ohman, C.
Baruffaldi, F.
Viceconti, M.
TI Structural parameters and mechanical strength of cancellous bone in the femoral head in osteoarthritis do not depend on age
SO BONE
LA English
DT Article
DE cancellous bone microarchitecture; osteoarthritis; strength; age variation; MicroCT scanning
ID coxarthrosis hip osteoarthritis; tibial trabecular bone; proximal femur; iliac crest; compressive property; morphometric-analysis; genetic-determinants; inverse relationship; computed-tomography; specimen geometry
AB For normal bone, aging has been associated with a decrease of both density and failure strength, and with the development of pathologies such as osteoporosis. Conversely, it has been reported that another common disease, osteoarthritis, may alter these age-related changes in cancellous bone, suggesting that it may have a protective role against osteoporosis and the correspondent fracture risk. It was reported that in the principal compressive region of the femoral head in osteoarthritis the bone density does not depend on age. However, it is not clear if this independence on age of the cancellous bone density corresponds also to a reduced dependence on age of the strength to failure. The present work examined cancellous bone from the principal compressive region of the femoral head of 37 patients having severe osteoarthritis. The aim was (1) to investigate the

dependence on age of both the structural parameters and the ultimate stress and (2) to investigate the relationships between the ultimate stress and the structural parameters. Using X-ray microcomputed tomography, three-dimensional structural parameters, such as bone volume fraction, direct trabecular thickness and structure model index were calculated. Then the specimens were compressed to failure to determine the ultimate stress. It was found that none of the investigated structural parameters did depend on age, and also the ultimate stress did not depend on age ($p > 0.05$ for all regressions on age). In addition, the ultimate stress was significantly correlated with the structural parameters, primary with the minimum bone volume fraction and the average bone volume fraction ($R-2 = 0.95$ and $R-2 = 0.84$, respectively). These findings show that severe osteoarthritis or a related factor may change the age dependences of both the structural parameters and the mechanical proper-ties usually reported for normal cancellous bone. These results suggest for this pathology to have a protective role against the age-related decrease in density, the age-related deterioration of the microarchitecture and the age-related decrease of the failure strength for the cancellous bone in the principal compressive region of the human femoral head. (c) 2007 Elsevier Inc. All rights reserved.
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Z9 79
U1 3
U2 16
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PI NEW YORK
PA 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA

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EI
J9 BONE
JI Bone
PD NOV 15
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VL 41
IS 5
BP 760
EP 768
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 225PD
UT WOS:000250528900003
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PT J
AU Trangerud, C
Meuwissen, T
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Grondalen, J
Moe, L
AF Trangerud, C.
Meuwissen, T.
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Indrebo, A.
Grondalen, J.
Moe, L.
TI Risk factors affecting metaphyseal irregularities in the radius and ulna of growing Newfoundland dogs
SO JOURNAL OF ANIMAL SCIENCE
LA English
DT Article
DE alkaline phosphatase; body weight; canine; growth curve; metaphyseal irregularities
ID german-shepherd dogs; canine hip-dysplasia; heritability; growth; osteoarthritis; osteoporosis; disease; breeds
AB The main objective of this study was to study risk factors affecting metaphyseal irregularities (MI) in the distal radius and ulna of growing Newfoundland dogs.

Risk factors studied included the genetic effects, effects of litters, BW, circumferences of the distal radius and ulna (CDRU), and total serum alkaline phosphatase (ALP) concentrations. The study included 118 Newfoundland dogs (60 females, 58 males), derived from 32 litters. Body weight, separated on sex and MI, was fitted to the Gompertz function. Occurrence of MI differed significantly between sexes, with 55% of males and 35% of females affected (P = 0.03). Growth curves for the 2 groups of dogs, with and without MI, diverged after 60 to 70 d, and dogs with irregularities were heavier at maturity than dogs of the same sex without irregularities. In univariate analysis, the litter effect was a significant predictor of MI, explaining 32% of total variability of the MI incidence, but the genetic effects were not significant. However, the latter were significant in bivariate analysis of MI and BW. In the bivariate analysis, the effects of litter on MI and BW were significantly correlated at all observational points except at birth, 180 d, and 536 d. Total ALP concentrations decreased with increasing age, and differences between groups diminished with increasing age, indicating a negative effect of total ALP on MI. Correlation between MI and total ALP concentrations of litters was estimated in a bivariate analysis. This correlation was significant and ranged between - 0.34 and - 0.62. Similarly, the genetic relationship between total ALP and MI from 120 d of age onward varied between - 0.31 to - 0.60. However, correlations were only significant at 356 d of age (genetic correlation = 0.60; P = 0.01). The mean CDRU increased from 90 d of age toward a peak at 180 d. Thereafter, CDRU declined and stabilized at about 1 yr of age. The mean CDRU between the groups of dogs with and without MI diverged most at 90 d of age, then was nearly stable until 180 d and gradually declined until 356 d, when the CDRU began to equalize. Metaphyseal irregularities and CDRU levels of litter were significantly correlated. Litter effect was a significant predictor of MI. The effects of litters and the genetic effects on BW and MI were correlated at most phases of the growth of the dog. Similar, but lower, correlations were found for CDRU and MI, and total ALP and MI.

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NR 21
TC 6
Z9 6
U1 0
U2 8
PU AMER SOC ANIMAL SCIENCE
PI SAVOY
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SN 0021-8812
EI
J9 J ANIM SCI
JI J. Anim. Sci.
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WC Agriculture, Dairy & Animal Science
SC Agriculture
GA 211XT
UT WOS:000249557700009
PM 17565053
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ER

PT J
AU Pritchett, JW
AF Pritchett, James W.
TI Statins and dietary fish offs improve lipid composition in bone marrow and joints
SO CLINICAL ORTHOPAEDICS AND RELATED RESEARCH
LA English
DT Article
ID clearing agents; fat-embolism; osteonecrosis; surfactant; risk
AB There have been numerous efforts to alter the lipid content of cardiovascular tissues. Although equally important, only limited information is available about musculoskeletal tissues. I characterized joint and bone marrow lipids in patients having joint replacement surgery and explored the effects of fish oils and statins on lipid composition in bone marrow and joint fluid. Joint drainage catheters were used to collect marrow lipids from 84 patients having 128 hip and knee replacements for osteoarthritis, osteonecrosis, and femoral neck fractures (osteoporosis). Statins reduced the amount of lipid by 22% in patients with osteoporosis, 26% in patients with osteoarthritis, and 41% in patients with osteonecrosis compared with pretreatment lipid levels in the same patients. Taking fish oils reduced the amount of lipid in bone marrow by 20%. Lipid profiles of disturbed marrow and joint fluid from patients who took statins or dietary fish oil showed an increase in the proportion of unsaturated fatty acids and longer-chain fatty acids relative to pretreatment profiles. The ability to change the amount and character of bone and joint lipids may have major importance for strengthening bone, reducing the severity or preventing osteonecrosis, and enhancing joint lubrication.
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10.1001/jama.283.24.3211
NR 20
TC 15
Z9 16
U1 0
U2 1
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 0009-921X
EI 1528-1132
J9 CLIN ORTHOP RELAT R
JI Clin. Orthop. Rel. Res.
PD MAR 15
PY 2007
VL 0
IS 456
BP 233
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DI 10.1097/BLO.0b013e31802cfa9e
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WC Orthopedics; Surgery
SC Orthopedics; Surgery
GA 142UN
UT WOS:000244675800039
PM 17496750
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PT J
AU Snelling, S
Sinsheimer, JS
Carr, A
Loughlin, J
AF Snelling, S.
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Loughlin, J.
TI Genetic association analysis of LRCH1 as an osteoarthritis susceptibility locus
SO RHEUMATOLOGY
LA English
DT Article
DE osteoarthritis; LRCH1; genetic susceptibility; SNP
ID single-nucleotide polymorphism; hip osteoarthritis; knee osteoarthritis; asporin; risk; osteoporosis; variants; repeat
AB Objective. A genetic association with knee osteoarthritis (OA) of a single nucleotide polymorphism (SNP) in intron 1 of the LRCH1 gene was recently reported in a UK Caucasian case-control sample and confirmed in a Newfoundland Caucasian sample. Our objective was to assess whether the SNP was associated with OA in our large UK Caucasian sample. Methods. The SNP was genotyped in 1521 cases that had undergone elective joint replacement of the hip (1098 cases), of the knee (340 cases) or of the hip and knee (83 cases) due to end-stage primary OA. The SNP was also genotyped in 736 controls of similar ages in the cases. Results. There was no significant difference (all P-values > 0.05) in genotype or allele frequencies between our cases and our controls. There was also no significant difference when the cases were stratified by sex, by joint replaced or by sex combined with joint replaced. Conclusion. Our data on 2257 individuals implies that the LRCH1 intron 1 SNP is not a risk factor for OA aetiology of the knee or of the hip in our UK Caucasian sample.
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TC 18
Z9 22
U1 0
U2 1
PU OXFORD UNIV PRESS
PI OXFORD
PA GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND
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J9 RHEUMATOLOGY
JI RHEUMATOLOGY
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VL 46
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PG 3
WC Rheumatology
SC Rheumatology
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PT J
AU Pye, SR
Reid, DM
Lunt, M
Adams, JE
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O'Neill, TW
AF Pye, Stephen R.
Reid, David M.
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Adams, Judith E.
Silman, Alan J.
O'Neill, Terence W.
TI Lumbar disc degeneration: association between osteophytes, end-plate sclerosis and disc space narrowing
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID bone-mineral density; vertebral osteoporosis; radiographic features; osteoarthritis; women; men
AB Background: Lumbar disc degeneration is characterised radiologically by the presence of osteophytes, end-plate sclerosis and disc space narrowing. Aim: To determine the strength of the association between increasing severity of combinations of these features in a population sample of men and women. Methods: Men and women aged >= 50 years were recruited from a primary care-based community health index in Aberdeen, UK. Participants had lateral spinal radiographs performed according to a standard protocol. The intervertebral disc spaces (L1/2-L4/5) were evaluated for the presence of anterior osteophytes, end-plate sclerosis and disc space narrowing using a graded semiquantitative score (grade 0-3). Log linear modelling was used to determine the associations (pairwise) between increasing severity of these features, with the results expressed as beta coefficients and 95% confidence intervals (CIs). Results: There were 286 men (mean age 65.3 years) and 299 women (mean age 65.2 years) with spinal radiographs, yielding a total of 2340 assessable lumbar vertebral levels. In all, 73% of vertebral levels had evidence of osteophytes, 26% of sclerosis and 37% of disc space narrowing. Increasing severity of osteophyte grade was associated with an increasing severity both of sclerosis and of disc space narrowing, whereas the severity of sclerosis was associated with the severity of narrowing. This was true at all vertebral levels. The strongest association, however, was between osteophytes and sclerosis (beta coefficient =2.7, 95% CI 2.4 to 3.1). For sclerosis and narrowing the beta coefficient was 1.9 (95% CI 1.7 to 2.1), whereas for osteophytes and narrowing the beta coefficient was much weaker at 1.2 (95% CI 1.1 to 1.3). There was no important influence of vertebral level on any of these associations. Conclusion: The association between increasing severity of osteophytes and

end-plate sclerosis is stronger than for other combinations of radiographic features of lumbar disc degeneration.
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PI LONDON
PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR, ENGLAND
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J9 ANN RHEUM DIS
JI Ann. Rheum. Dis.
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PT J
AU Vasiljeva, O
Reinheckel, T
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Turk, V
Turk, B
AF Vasiljeva, Olga
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Peters, Christoph
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Turk, Boris
TI Emerging roles of cysteine cathepsins in disease and their potential as drug targets
SO CURRENT PHARMACEUTICAL DESIGN
LA English
DT Review
ID dipeptidyl peptidase-i; ketoamide-based inhibitors; human procathepsin b; human coronavirus nl63; t-cell selection; bone-resorption; crystal-structure; proteinase-inhibitors; invariant chain; matrix-metalloproteinase
AB The general view on cysteine cathepsins, which were long believed to be primarily involved in intracellular protein turnover, has dramatically changed in last 10 to 15 years. The discovery of new cathepsins, such as cathepsins K, V, X, F and 0, and their tissue distribution suggested that at least some of them are involved in very specific cellular processes. Moreover, gene ablation experiments revealed that cathepsins play a vital role in numerous physiological processes, such as antigen processing and presentation, bone remodelling, prohorinone processing and wound healing. Their involvement in several pathologies, including osteoporosis, rheurnatoid arthritis, osteoarthritis, bronchial asthma and cancer have also been confirmed and today several of them have been validated as relevant targets for therapies. Compounds targeting cathepsins S and K are already in clinical evaluation, whereas others are in experimental phases. The cathepsin K inhibitor AAE-581 (balicatib) as the most advanced of them passed Phase 11 clinical trials in 2005. In this review, we discuss the current view on cathepsins as an emerging group of targets for several diseases and the development of cathepsin K and S

inhibitors for treatment ofosteoporosis and various immune disorders.
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DT Article
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ID biological evaluation; aggrecanase; osteoarthritis; potent
AB A series of 5-((1H-pyrazol-4-yl)methylene)-2-thioxothiazolidin-4-one inhibitors of ADAMTS-5 (aggrecanase-2) is described. These compounds show mu M functional inhibition of ADAMTS-5, and represent a new class of agents with the potential of inhibiting degradation of aggrecan, a major component of cartilage which is lost in osteoporosis. Compound 12 is noteworthy in that it has an ADAMTS-5 IC50: 1.1 mu M and shows > 40-fold functional selectivity over ADAMTS-4 (aggrecanase-1). (c) 2006 Elsevier Ltd. All rights reserved.
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NR 13
TC 61
Z9 65
U1 0
U2 6
PU PERGAMON-ELSEVIER SCIENCE LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND
SN 0960-894X
EI 1464-3405
J9 BIOORG MED CHEM LETT
JI Bioorg. Med. Chem. Lett.
PD MAR 1
PY 2007
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BP 1189
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WC Chemistry, Medicinal; Chemistry, Organic

SC Pharmacology & Pharmacy; Chemistry
GA 146OG
UT WOS:000244943300010
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ER

PT J
AU Bjornsson, GL
Thorsteinsson, L
Gudmundsson, KO
Jonsson, H
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AF Bjornsson, G. L.
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TI Inflammatory cytokines in relation to adrenal response following total hip replacement
SO SCANDINAVIAN JOURNAL OF IMMUNOLOGY
LA English
DT Article
ID tumor-necrosis-factor; total joint replacement; c-reactive protein; rheumatoid-arthritis; knee arthroplasty; diseases; surgery; immune; interleukin-8; activation
AB Our objective was to investigate the initiation and course of pro- and anti-inflammatory cytokines in early inflammatory response and to elucidate the cytokine system in relation to the adrenal response caused by stress. Seven blood samples were collected, pre- and postoperatively (0-72 h) after total hip replacement (THR) due to osteoarthritis. The following cytokines were measured using Cytometric Bead Array: interleukin-1 beta (IL-1 beta), IL-6, tumour necrosis factor-alpha, IL-8, IL-12 and IL-10 (B&D). Thirteen patients took part in the study (67 +/- 9 years). C-reactive protein increased from < 6 to over 200 mg/l on the second post-op day. The concentration of IL-6 increased 10-fold just 3 h post-op (4-47 pg/ml) and reached its maximum value 6 h post-op (77 pg/ml; Wilcoxon test $P < 0.01$) Repeated measurements were also significant (Friedman $P < 0.05$). The concentration of IL-8 doubled the day of surgery but did not reach a significant level (Friedman test =0.069). None of the other cytokines showed any significant changes. The diurnal cortisol rhythm was interrupted after the surgery and there was a significant correlation between the cortisol secretion and IL-6 response. This study demonstrates an isolated elevation in IL-6 levels with only a minor elevation

in IL-8 following THR. This pro-inflammatory response seemed to decline without activation of anti-inflammatory cytokines (IL-10), but cortisol seemed to play a complicated role in halting the acute inflammatory response.
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Z9 43
U1 0
U2 4
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0300-9475
EI 1365-3083
J9 SCAND J IMMUNOL
JI Scand. J. Immunol.
PD JAN 15
PY 2007
VL 65
IS 1
BP 99
EP 105
DI 10.1111/j.1365-3083.2006.01872.x
PG 7
WC Immunology
SC Immunology
GA 117XS
UT WOS:000242907200014
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PT J
AU Lutgens, SPM
  Cleutjens, KBJM
  Daemen, MJAP
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AF Lutgens, Suzanne P. M.
  Cleutjens, Kitty B. J. M.
  Daemen, Mat J. A. P.
  Heeneman, Sylvia
TI Cathepsin cysteine proteases in cardiovascular disease
SO FASEB JOURNAL
LA English
DT Review
DE atherosclerosis; extracellular matrix; lipid metabolism; diagnostic tool; therapeutic potential
ID abdominal aortic-aneurysms; low-density-lipoprotein; cystatin-c deficiency; smooth-muscle-cells; matrix metalloproteinases; antigen presentation; invariant chain; bone-resorption; reduces atherosclerosis; proteolytic activity

AB Extracellular matrix (ECM) remodeling is one of the underlying mechanisms in cardiovascular diseases. Cathepsin cysteine proteases have a central role in ECM remodeling and have been implicated in the development and progression of cardiovascular diseases. Cathepsins also show differential expression in various stages of atherosclerosis, and in vivo knockout studies revealed that deficiency of cathepsin K or S reduces atherosclerosis. Furthermore, cathepsins are involved in lipid metabolism. Cathepsins have the capability to degrade low-density lipoprotein and reduce cholesterol efflux from macrophages, aggravating foam cell formation. Although expression studies also demonstrated differential expression of cathepsins in cardiovascular diseases like aneurysm formation, neointima formation, and neovascularization, in vivo studies to define the exact role of cathepsins in these processes are lacking. Evaluation of the feasibility of cathepsins as a diagnostic tool revealed that serum levels of cathepsins L and S seem to be promising as biomarkers in the diagnosis of atherosclerosis, whereas cathepsin B shows potential as an imaging tool. Furthermore, cathepsin K and S inhibitors showed effectiveness in (pre) clinical evaluation for the treatment of osteoporosis and osteoarthritis, suggesting that cathepsin inhibitors may also have therapeutic effects for the treatment of atherosclerosis.
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NR 100
TC 265
Z9 319
U1 1
U2 34
PU FEDERATION AMER SOC EXP BIOL
PI BETHESDA
PA 9650 ROCKVILLE PIKE, BETHESDA, MD 20814-3998 USA
SN 0892-6638
EI 1530-6860
J9 FASEB J
JI Faseb J.

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VL 21
IS 12
BP 3029
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DI 10.1096/fj.06-7924com
PG 13
WC Biochemistry & Molecular Biology; Biology; Cell Biology
SC Biochemistry & Molecular Biology; Life Sciences & Biomedicine - Other Topics; Cell Biology
GA 215BE
UT WOS:000249781600005
PM 17522380
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PT J
AU Salaffi, F
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AF Salaffi, Fausto
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TI The burden of prevalent fractures on health-related quality of life in postmenopausal women with osteoporosis: The IMOF study
SO JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE vertebral fracture; postmenopausal osteoporosis; health-related quality of life; questionnaire
ID incident vertebral fractures; low-back-pain; rheumatoid-arthritis; italian version; validation; questionnaire; validity; impact; reliability; osteoarthritis
AB Objective. Vertebral fractures are a common complication of osteoporosis and may have a negative effect on health-related quality of life (HRQOL). We investigated the effect of prevalent vertebral fractures on HRQOL in patients with

osteoporosis. Methods. A cross-sectional multicenter study was carried out among postmenopausal women with primary osteoporosis attending primary care centers and hospital outpatient clinics: 234 women with vertebral fractures and 244 asymptomatic women. Women with secondary osteoporosis or taking medications that affect bone metabolism were excluded. All patients were questioned using the mini-Osteoporosis Quality of Life Questionnaire (mini-OQLQ), Medical Outcomes Study Short Form-36 (SF-36), and the EuroQuol-5D, after assessment of all clinical variables and anthropometric data. To assess comorbidity we used the Self-Administered Comorbidity Questionnaire (SCQ). Diagnosis of osteoporosis was confirmed in all patients by bone mineral density using dual energy x-ray absorptiometry. Radiographic evaluation was performed by a musculoskeletal radiologist. A total of 483 postmenopausal women, randomly matched for age out of 1579 healthy controls, were chosen to compare the SF-36 scores with respect to patients with and without vertebral fractures due to osteoporosis. A multivariable regression analysis was conducted to identify the strongest determinant for low HRQOL, adjusted for potential confounding variables such as comorbid conditions, education level, and psychosocial status. Results. The vertebral fracture group had significantly lower scores than patients without fractures and controls in all domains of the generic and specific questionnaires. Women with only 1 prevalent fracture had statistically significantly lower HRQOL scores than those without fractures on SF-36 measures of bodily pain, physical functioning, and role function physical (all $p < 0.01$). HRQOL scores were lower in women with lumbar fractures compared with women with thoracic fractures only when the physical functioning and bodily pain dimensions approached statistical significance. Based on the multivariate analysis, the strongest determinant for low HRQOL was physical functioning (explained by number of vertebral fractures) followed by comorbidity score and age. Adjusted R-2 in the final model was 35.9%. Using the SF-36 summary scales, comorbid conditions predominantly affected either mental or physical health ($p < 0.0001$). A significant correlation ($p < 0.0001$) was found between total score on the mini-OQLQ and the mean SCQ comorbidity score. Conclusion. Our results confirm previous findings that HRQOL, assessed by generic and osteoporosis-specific instruments, is decreased in patients with vertebral fractures due to osteoporosis as a function of the number of vertebral fractures, presence of comorbid conditions, and age.

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NR 42
TC 112
Z9 119
U1 0
U2 7
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PI TORONTO
PA 365 BLOOR ST E, STE 901, TORONTO, ONTARIO M4W 3L4, CANADA
SN 0315-162X
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J9 J RHEUMATOL
JI J. Rheumatol.
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WC Rheumatology
SC Rheumatology
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PT J
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TI Articular cartilage and biomechanical properties of the long bones in Frzb-knockout mice
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID frizzled-related protein-3; wnt signaling pathway; hip osteoarthritis; antagonist; growth; expression; association; modulation; variants; netrins
AB Objective. Ligands and antagonists of the WNT pathway are linked to osteoporosis and osteoarthritis. In particular, polymorphisms in the FRZB gene, a secreted WNT antagonist, have been associated with osteoarthritis. The aim of this study was to examine cartilage and bone in Frzb(-/-) mice. Methods. The Frzb gene in mice was inactivated using a Cre/loxP strategy. Three models of osteoarthritis were used: collagenase, papain, and methylated bovine serum albumin induced. Bone biology was studied using density measurements and microfocal computed tomography. Bone stiffness and mechanical loading-induced bone adaptation were studied by compression of the ulnae. Results. Targeted deletion of the Frzb gene in mice increased articular cartilage loss during arthritis triggered by instability, enzymatic injury, or inflammation. Cartilage damage in Frzb(-/-) mice was associated with increased WNT signaling and matrix metalloproteinase 3 (MMP-3) expression and activity. Frzb(-/-) mice had increased cortical bone thickness and density, resulting in stiffer bones, as demonstrated by stressstrain relationship analyses. Moreover, Frzb(-/-) mice had an increased periosteal anabolic response to mechanical loading as compared with wild-type mice. Conclusion. The genetic association between osteoarthritis and FRZB polymorphisms is corroborated by increased cartilage proteoglycan loss in 3 different models of arthritis in Frzb(-/-) mice. Loss of Frzb may contribute to cartilage damage by increasing the expression and activity of MMPs, in a WNT-dependent and WNT-independent manner. FRZB

deficiency also resulted in thicker cortical bone, with increased stiffness and higher cortical appositional bone formation after loading. This may contribute to the development of osteoarthritis by producing increased strain on the articular cartilage during normal locomotion but may protect against osteoporotic fractures.
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NR 41
TC 232
Z9 259
U1 0
U2 16
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0004-3591
EI 1529-0131
J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
PD DEC 15
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WC Rheumatology
SC Rheumatology
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PT J
AU Baranyay, FJ
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AF Baranyay, Ferencz J.
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TI Association of bone marrow lesions with knee structures and risk factors for bone marrow lesions in the knees of clinically healthy, community-based adults
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE bone marrow lesions; cartilage defects; bone size; osteoarthritis
ID tibial cartilage volume; early radiographic osteoarthritis; subchondral bone; surface-area; edema; joint; pain; osteoporosis; determinants; progression
AB Objectives: Subchondral bone marrow lesions (BML) are involved in pain and progression of knee osteoarthritis (OA). Little is known about their role in the knee in those without clinical OA. Our aim was to examine the prevalence and risk factors for BML, and their relationship with other knee structures in community-based adults without clinical OA. Methods: Two hundred ninety-seven healthy subjects without knee pain or injury were recruited from an existing community-based cohort recruited at baseline in 1990-1994. Subjects with a single magnetic resonance imaging (MRI) of their dominant knee at follow-up were studied in 2003-2004. BML, cartilage defects, cartilage volume, and bone area of the knee were assessed using MRI. Results: Thirty-nine subjects (13%) had evidence of BML. BML were associated with the presence of cartilage defects in the medial (odds ratio (OR) 1.80, P = 0.004) and lateral (OR 1.45, P = 0.04) tibiofemoral compartments, but not cartilage volume. BML were positively associated with total tibial bone area (OR 1.22, P = 0.02). Increasing age (OR 1.10, P < 0.001), male gender (OR 3.86, P = 0.01), and increasing body height (OR 1.07, P = 0.03) were independently associated with BML in the total tibiofemoral compartment. Conclusions: BML are present in the knees of community-based adults without clinical OA and are strongly associated with tibiofemoral cartilage defects. Risk

factors for BML were age, male gender, and body height. Longitudinal studies will be needed to clarify the role of BML in structural change of the knee and how this relates to the pathogenesis of symptomatic knee OA. (C) 2007 Elsevier Inc. All rights reserved.
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NR 32
TC 65
Z9 84
U1 0
U2 3
PU W B SAUNDERS CO-ELSEVIER INC
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JI Semin. Arthritis Rheum.
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WC Rheumatology
SC Rheumatology
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PT J
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TI Expression of bone resorption genes in osteoarthritis and in osteoporosis
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE cathepsin K; MMP-9; TRAP; RANKL; osteoprotegerin
ID kappa-b ligand; cathepsin-k; messenger-rna; receptor activator; trabecular bone; matrix metalloproteinases; osteoprotegerin ligand; cysteine-proteinases; protease expression; cancellous bone
AB Cathepsin K and MMP-9 are considered to be the most abundant proteases in osteoclasts. TRAP is a marker for osteoclasts, and there is increasing evidence of its proteolytic role in bone resorption. RANKL is a recently discovered regulator of osteoclast maturation and activity and induces expression of many genes. This study compared cathepsin K, MMP-9, TRAP, RANKL, OPG, and osteocalcin gene expression in the proximal femur of patients with osteoarthritis with that of patients with femoral neck fracture. Fifty-six patients undergoing arthroplasty because of osteoarthritis or femoral neck fracture were included in the study. Total mRNA was extracted from the bone samples obtained from the intertrochanteric region of the proximal femur. Real-time RT-PCR was used to quantify CTSK (cathepsin K), MMP-9 (matrix metalloproteinase 9), ACP5 (TRAP), TNFSF11 (RANKL), TNFRSF11B (OPG), and BGLAP (osteocalcin) mRNAs. The levels of mRNAs coding for MMP-9 and osteocalcin indicated higher expression in the osteoarthritic group ($P = 0.011$, $P = 0.001$, respectively), whereas RANKL expression and the ratio RANKL/OPG were both significantly lower in the osteoarthritic group than in the fracture group. Expression of cathepsin K, MMP-9, and TRAP relative to RANKL was significantly higher in the osteoarthritic group. Ratios of all three proteolytic enzymes relative to formation marker osteocalcin were higher in the fracture group. Gene expression of cathepsin K, MMP-9, TRAP, RANKL, OPG, and osteocalcin and the association between their mRNA levels pointed to higher bone resorption and bone formation in osteoarthritis, differences in balance between them, and differences in regulation of bone resorption in osteoarthritic and osteoporotic bone.
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NR 34
TC 124
Z9 146
U1 1
U2 25
PU SPRINGER JAPAN KK
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PA SHIROYAMA TRUST TOWER 5F, 4-3-1 TORANOMON, MINATO-KU, TOKYO, 105-6005, JAPAN
SN 0914-8779
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J9 J BONE MINER METAB
JI J. Bone Miner. Metab.
PD JUL 15
PY 2007
VL 25
IS 4
BP 219
EP 225
DI 10.1007/s00774-007-0753-0
PG 7
WC Endocrinology & Metabolism; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Research & Experimental Medicine
GA 184PC
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PT J
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TI Relative bone mineral density measured by metacarpal index (MCI) and chronic spinal syndromes:: an epidemiological study
SO SCANDINAVIAN JOURNAL OF RHEUMATOLOGY
LA English
DT Article
ID low-back-pain; idiopathic skeletal hyperostosis; postmenopausal women; chronic neck; follow-up; determinants; osteoarthritis; osteoporosis; spondylosis; prevalence
AB Objectives: The results of previous studies on the association between bone mineral density (BMD) and chronic spinal syndromes have been contradictory. Therefore, we studied relative BMD measured by the metacarpal index (MCI) and its associations with chronic neck and low-back syndromes and diffuse idiopathic skeletal hyperostosis (DISH). Methods: A population sample of 8000 Finns aged 30 years and over was invited to a comprehensive health examination in 1978-1980; 90% complied. In the clinical phase, a trained physician diagnosed chronic neck and low-back syndromes. Hand and chest radiographs were taken from 3568 participants to determine the MCI and to diagnose DISH. Of these, 340 subjects were re-examined clinically in 2000. Results: After adjusting for potential confounding factors, a high MCI showed a significant cross-sectional association with chronic neck syndrome and DISH. The odds ratio (OR) per increment of one standard deviation (0.1) of MCI for chronic neck syndrome was 1.33 [95% confidence interval (CI) 1.21-1.47] and for DISH 1.29 (95% Cl 1.04-1.60). No association was found between MCI and chronic low-back syndrome. In the follow-up setting, however, baseline MCI did not predict the incidence of chronic neck or low-back syndromes. Conclusions: Relative BMD is directly proportional to the prevalence of chronic neck syndrome. Further studies are needed to clarify the mechanisms of the association. The close association found between high relative BMD and DISH suggests a joint metabolic factor, which needs to be studied further to determine its effects on bones and intervertebral discs.
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NR 19
TC 10
Z9 10
U1 0
U2 2
PU TAYLOR & FRANCIS AS
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J9 SCAND J RHEUMATOL
JI Scand. J. Rheumatol.
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WC Rheumatology
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ER

PT J
AU Osborne, RH
Nikpour, M
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AF Osborne, Richard H.
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Wicks, Ian P.
TI Prevalence and cost of musculoskeletal disorders: A population-based, public hospital system healthcare consumption approach
SO JOURNAL OF RHEUMATOLOGY

LA English
DT Article
DE musculoskeletal diseases; healthcare costs; burden of illness; rheumatic diseases; orthopedics; cost of illness
ID quality-of-life; knee osteoarthritis; joint replacement; chronic diseases; risk-factors; vitamin-d; arthritis; hip; osteoporosis; disability
AB Objective. To use a population-level, public-hospital approach to compare the prevalence and cost of musculoskeletal diseases (MSD) with other clinical specialties. Methods. A healthcare utilization survey of 4 million individual records over 4 years, from all major public hospitals in the state of Victoria (estimated population 4.8 million residents in 2000/01) from 1997/98 to 2000/01. Main outcome measures were inpatient episodes of care, bed-days, and outpatient clinic encounters. MSD was defined as the combination of orthopedics and rheumatology. Results. After obstetrics, MSD was the most frequent outpatient service, with orthopedics accounting for 9.9% of all visits in 2000/01. The proportion of MSD outpatient encounters (on average 11.6% of the total) was constant over the study period. Among 26 medical specialties, MSD had the sixth highest number of inpatient episodes (6.2% in 2000/01), following renal dialysis (14.6%), general surgery (8.2%), obstetrics (7.6%), gastroenterology (7.1%), and general medicine (6.7%). MSD was the fifth highest consumer of bed-days, occupying on average 7.7% of all beds per annum in the period 1997/98 to 2000/01, behind psychiatry (10.1%), respiratory medicine (8.5%), rehabilitation (8.3%), and general medicine (7.8%). MSD was the third most-costly discipline in 2000/01, with total costs of over A$169 million (9.7% of total inpatient costs that year), behind respiratory medicine (11.6%) and general surgery (11.5%). Conclusion. Compared to other diseases, MSD consumes a substantial proportion of healthcare resources in Victorian public hospitals. These data have important implications for allocation of healthcare resources, clinical care pathways, and prevention strategies.
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ER

PT J
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TI The incidence of osteopenia and osteoporosis in women with hip osteoarthritis scheduled for cementless total joint replacement
SO BONE
LA English
DT Article
DE hip arthroplasty; DXA; osteoarthritis; osteoporosis; metabolic bone markers
ID bone-mineral density; vitamin-d; femoral-neck; fracture; quality; risk; arthritis; strength; mass; age
AB Introduction: The co-existence of osteoporosis (OP) and osteoarthritis (OA) remains obscure. No systematic studies have been carried out to exclude the possibility that especially female osteoarthritic patients selected for cementless total hip arthroplasty (THA) suffer from primary or secondary OP. Methods: A subgroup of fifty-three female patients (average age, 64.7 years) with advanced primary hip OA scheduled for cementless THA were recruited for DXA and laboratory screening. Before surgery, bone mineral density (BMD) of the lumbar spine, the proximal femurs and the distal forearm were measured. The serum concentrations of calcium, 25-hydroxyvitamin D, parathyroid hormone and biochemical markers of bone resorption and formation were determined to exclude secondary OP. Results: The prevalence of OP (T score <-2.5) and osteopenia (- 1.0 > T score >-2.5) were 28% and 45%, respectively. Statistically, OP was related to patient's age, low BMI, postmenopausal status and not having estrogen replacement therapy. Five patients (9%) had laboratory findings of secondary OP. Two of them were found to have a parathyroid adenoma. The prevalence of vitamin D insufficiency [S-25(OH)D levels <= 50 nmol/l] was 36% (n - 19). As a sign of high bone turnover, the patients with reduced BMD values showed significantly increased serum levels of osteocalcin (p=0.049), intact procollagen type I N propeptide (p=0.040) and N-terminal crosslinking telopeptide of type I collagen (p=0.046). The BMC of the femoral necks of the osteoarthritic hips were significantly higher (p < 0.001) and the BMC of the trochanter regions significantly lower (p=0.005) compared to the contralateral hips. Conclusion: Against a general belief, OA does not seem to protect a patient from generalized primary OP. The

majority (74%) of the female hip OA patients were osteopenic or osteoporotic with signs of increased bone turnover. The observed prevalence of reduced BNID corresponds with the published data of age-matched population. An unexpectedly high number of patients required preoperative consultation with an endocrinologist. The altered distribution of BNID observed in the proximal femurs may explain the lower prevalence of fractures reported in the femoral necks of osteoarthritic hips. (c) 2006 Elsevier Inc. All rights reserved.
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JI Bone
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PT J
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TI Association of the F352V variant of the Klotho gene with bone mineral density
SO BIOGERONTOLOGY
LA English
DT Article
DE Klotho; osteoporosis; fractures; estradiol; bone mineral density
ID functional variant; hip fracture; polymorphisms; osteoporosis; homocysteine; risk; identification
AB Klotho gene codes for a protein with glucuronidase activity and is thought to influence bone and vascular homeostasis. We studied the relationship of a common T/G polymorphism, resulting in a phenylalanine (F) to valine (V) substitution at aminoacid position 352, with bone mineral density (BMD) and osteoporotic fractures. The study group comprised 914 Spanish women, including 438 control subjects, 190 patients with osteoporosis, 198 with hip fractures, and 88 patients with severe osteoarthritis. BMD was measured by DEXA in 540 women from the control and osteoporosis groups. Allele frequencies were 86% and 14%, for the F and V alleles, respectively. In comparison with the most common FF genotype, postmenopausal women with FV/VV genotypes had higher hip BMD (femoral neck: 0.673 +/- 0.011 vs. 0.644 +/- 0.006 g/cm(2); P = 0.02; total hip: 0.807 +/- 0.014 vs. 0.774 +/- 0.008 g/cm(2); P = 0.03). Klotho alleles explained about 1.5% of BMD variance, but were not associated to the risk of osteoporotic spine or hip fractures. The Klotho genotype was not associated to BMD in premenopausal women. In conclusion, the F352V Klotho polymorphism is associated with BMD in postmenopausal women, suggesting that Klotho gene variants influence skeletal aging.
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Yamashita T, 2000, ENDOCRINOLOGY, V141, P438, DOI 10.1210/en.141.1.438
NR 33
TC 36
Z9 39
U1 0
U2 3
PU SPRINGER
PI NEW YORK
PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
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J9 BIOGERONTOLOGY
JI Biogerontology
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WC Geriatrics & Gerontology
SC Geriatrics & Gerontology
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UT WOS:000245105000006
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ER

PT J
AU Hansen, KE
Binkley, N
Blank, RD
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AF Hansen, Karen E.
Binkley, Neil
Blank, Robert D.
Krueger, Diane C.
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TI An atlas improves Interobserver agreement regarding application of the ISCD vertebral body exclusion criteria
SO JOURNAL OF CLINICAL DENSITOMETRY
LA English
DT Article
DE agreement; bone densitometry; diagnosis; exclusion; osteoporosis; T-score; vertebrae
AB Coexisting conditions such as osteoarthritis and compression fracture may spuriously elevate the dual-energy Xray absorptiometry (DXA)-measured lumbar spine bone mass. To improve the diagnostic utility of lumbar spine DXA to diagnose osteoporosis, the International Society for Clinical Densitometry (ISCD) suggests excluding vertebrae affected by focal structural anomalies or unusual T-score discrepancies. However, we previously demonstrated only moderate agreement between physicians regarding vertebral body exclusion. We hypothesized that an atlas containing examples of vertebrae to exclude would improve interobserver agreement. Subsequently, we developed an interactive web-based atlas of lumbar spine DXA images with options to exclude vertebrae and compare one's answers to those derived by group consensus. Before and after review of the atlas, 5 ISCD-certified physicians applied the exclusion criteria to 90 DXA scans, recording the indications for vertebral exclusion on a standardized worksheet. After development and review of the atlas, interobserver agreement regarding vertebral body exclusion improved significantly ($p < 0.0001$). We plotted the deviation of each physician's reported T-score vs the mean T-score for each of 90 scans, and demonstrated that the scatter from the mean is decreased after atlas review. Furthermore, correlations in T-score improved in 7 of 10 physician pairs after atlas review. We conclude that an interactive atlas promotes uniform lumbar spine DXA interpretation.
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*ISCD, 2005, ISCD POS DEV C, V0, P0
Liu G, 1997, OSTEOPOROSIS INT, V7, P564, DOI 10.1007/BF02652563
NR 5
TC 5
Z9 6
U1 0
U2 1
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA
SN 1094-6950
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J9 J CLIN DENSITOM
JI J. Clin. Densitom.
PD OCT-DEC 15
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IS 4
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EP 364
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Calvo, E
Castañeda, S
Largo, R
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Herrero-Beaumont, G
AF Calvo, E.

Castaneda, S.
Largo, R.
Fernandez-Valle, M. E.
Rodriguez-Salvanes, F.
Herrero-Beaumont, G.
TI Osteoporosis increases the severity of cartilage damage in an experimental model of osteoarthritis in rabbits
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE osteoporosis; osteoarthritis; bone mineral density; cartilage
ID bone-mineral density; estrogen replacement therapy; radiographic osteoarthritis; knee osteoarthritis; articular-cartilage; risk; hip; receptors; incident; women
AB Objective: To evaluate the effect of osteoporosis (OP) in cartilage damage developed in an experimental model of osteoarthritis (OA) in mature female rabbits in order to investigate the relationship between OP and OA. Methods: OA was experimentally induced by anterior cruciate section and partial medial meniscectomy in the left knee of 12 rabbits. OP was experimentally induced prior to CA in six rabbits by bilateral ovariectomy (OVX) and systemic corticosteroid administration during 4 weeks. Knees were evaluated with high resolution magnetic resonance imaging (MRI) before knee surgery to rule out any detrimental effect of corticosteroids on cartilage. Gross and microscopic cartilage changes were assessed 16 weeks after surgery in bilateral knees. Left knees were considered osteoarthritic or osteoarthritic plus osteoporotic. Right knees were used as osteoporotic and healthy controls, respectively. Bone mineral density (BMD) was measured with dual energy X-ray absorptiometry (DXA) at the lumbar spine, global knee and subchondral knee bone, and its variations correlated with cartilage abnormalities. Results: MRI before knee surgery disclosed no cartilage or bone abnormalities in any of the studied groups. OP increased the severity of cartilage abnormalities in experimental knee OA significantly ($P < 0.05$). Cartilage damage was inversely correlated with BMD variations measured at the lumbar spine ($r= -0.74$; $P = 0.015$). BMD changes in global and subchondral knee bone also showed a trend to correlate inversely with cartilage damage. Conclusions: Prior induction of OP increases the severity of cartilage damage in experimental OA. Increase in cartilage damage correlates with bone loss. These findings suggest a direct relationship between OP and OA. (C) 2006 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 36
TC 107
Z9 125
U1 0
U2 15
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD JAN 15
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IS 1
BP 69
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DI 10.1016/j.joca.2006.06.006
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WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 135VV
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ER

PT J
AU Musacchio, E
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AF Musacchio, Estella
Priante, Giovanna
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TI Effects of unsaturated free fatty acids on adhesion and on gene expression of extracellular matrix macromolecules in human osteoblast-like cell cultures
SO CONNECTIVE TISSUE RESEARCH
LA English
DT Article
DE bone metabolism; cell adhesion; extracellular matrix; fatty acids; osteoblasts
ID messenger-rna expression; nitric-oxide; arachidonic-acid; bone-resorption; growth-factors; collagen; differentiation; osteoporosis; fibronectin; phenotype
AB To investigate the possible role for unsaturated free fatty acids in osteoblast adhesion, the effects of two polyunsaturated fatty acids (PUFAs), arachidonic (AA) and eicosapentaenoic (EPA) acids, and of one monounsaturated fatty acid, oleic acid (OA), on adhesion to the substrate and on gene expression of three extracellular matrix macromolecules were investigated in an in vitro model system-cultured osteoblast-like human cells. AA, but neither EPA nor OA, diminished bone cell adhesion, whereas both EPA and OA, but not AA, increased gene expression of type I collagen and fibronectin via a transforming growth factor-beta-independent mechanism. These results extend previous evidence for unsaturated fatty acids in bone cell metabolism.
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NR 25
TC 21
Z9 28
U1 0
U2 5
PU TAYLOR & FRANCIS INC
PI PHILADELPHIA
PA 530 WALNUT STREET, STE 850, PHILADELPHIA, PA 19106 USA
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J9 CONNECT TISSUE RES
JI Connect. Tissue Res.
PD JUN 15
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WC Cell Biology; Orthopedics
SC Cell Biology; Orthopedics
GA 140TK
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ER

PT J
AU Nixon, M
Taylor, G
Sheldon, P
Iqbal, SJ
Harper, W
AF Nixon, M.
Taylor, G.
Sheldon, P.
Iqbal, S. J.
Harper, W.
TI Does bone quality predict loosening of cemented total hip replacements?
SO JOURNAL OF BONE AND JOINT SURGERY-BRITISH VOLUME
LA English
DT Article
ID osteoporotic fractures; polyethylene particles; femoral components; arthroplasty; osteoarthritis; osteolysis; resorption; pressure; model; inhibition
AB We matched 78 patients with a loose cemented Charnley Elite Plus total hip replacement (THR) by age, gender, race, prosthesis and time from surgery with 49 patients with a well-fixed stable hip replacement, to determine if poor bone quality predisposes to loosening. Clinical, radiological, biomechanical and bone mineral density indicators of bone quality were assessed. Patients with loose replacements had more pain, were more likely to have presented with atrophic arthritis and to have a history of fragility fracture, narrower femoral cortices and lower peri-prosthetic or lumbar spine bone mineral density (all t-test, $p < 0.01$). They also tended to be smokers (chi-squared test, $p = 0.08$). Vitamin-D deficiency was common, but not significantly different between the two groups (t-test, $p = 0.31$) In this series of cemented hip replacements performed between 1994 and 1998, aseptic loosening was associated with poor bone quality. Patients with a THR should be screened for osteoporosis and have regular radiological surveillance.
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CR Arden NK, 1999, ARTHRITIS RHEUM, V42, P1378, DOI 10.1002/1529-0131(199907)42:7<1378::AID-ANR11>3.0.CO;2-I
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Wroblewski BM, 1999, J BONE JOINT SURG BR, V81B, P427, DOI 10.1302/0301-620X.81B3.9521
NR 36
TC 62
Z9 67
U1 1
U2 4
PU BRITISH EDITORIAL SOC BONE JOINT SURGERY
PI LONDON
PA 22 BUCKINGHAM STREET, LONDON WC2N 6ET, ENGLAND
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J9 J BONE JOINT SURG BR
JI J. Bone Joint Surg.-Br. Vol.
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WC Orthopedics; Surgery
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ER

PT J
AU Hopwood, B
Tsykin, A
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Fazzalari, NL
AF Hopwood, Blair
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TI Microarray gene expression profiling of osteoarthritic bone suggests altered bone remodelling, WNT and transforming growth factor-β/bone morphogenic

protein signalling
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Review
ID mesenchymal stem-cells; cruciate ligament transection; frizzled-related protein-3; human trabecular bone; osteoblasts in-vitro; subchondral bone; factor-beta; tgf-beta; osteoclast differentiation; transcription factors
AB Osteoarthritis (OA) is characterized by alterations to subchondral bone as well as articular cartilage. Changes to bone in OA have also been identified at sites distal to the affected joint, which include increased bone volume fraction and reduced bone mineralization. Altered bone remodelling has been proposed to underlie these bone changes in OA. To investigate the molecular basis for these changes, we performed microarray gene expression profiling of bone obtained at autopsy from individuals with no evidence of joint disease (control) and from individuals undergoing joint replacement surgery for either degenerative hip OA, or fractured neck of femur (osteoporosis [OP]). The OP sample set was included because an inverse association, with respect to bone density, has been observed between OA and the low bone density disease OP. Compugen human 19K-oligo microarray slides were used to compare the gene expression profiles of OA, control and OP bone samples. Four sets of samples were analyzed, comprising 10 OA-control female, 10 OA-control male, 10 OA-OP female and 9 OP-control female sample pairs. Print tip Lowess normalization and Bayesian statistical analyses were carried out using linear models for microarray analysis, which identified 150 differentially expressed genes in OA bone with t scores above 4. Twenty-five of these genes were then confirmed to be differentially expressed ($P < 0.01$) by real-time PCR analysis. A substantial number of the top-ranking differentially expressed genes identified in OA bone are known to play roles in osteoblasts, osteocytes and osteoclasts. Many of these genes are targets of either the WNT (wingless MMTV integration) signalling pathway (TWIST1, IBSP, S100A4, MMP25, RUNX2 and CD14) or the transforming growth factor (TGF)-beta/bone morphogenic protein (BMP) signalling pathway (ADAMTS4, ADM, MEPE, GADD45B, COL4A1 and FST). Other differentially expressed genes included WNT (WNT5B, NHERF1, CTNNB1 and PTEN) and TGF-beta/BMP (TGFB1, SMAD3, BMP5 and INHBA) signalling pathway component or modulating genes. In addition a subset of genes involved in osteoclast function (GSN, PTK9, VCAM1, ITGB2, ANXA2, GRN, PDE4A and FOXP1) was identified as being differentially expressed in OA bone between females and males. Altered expression of these sets of genes suggests altered bone remodelling and may in part explain the sex disparity observed in OA.
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CR Abe Y, 2004, J BONE MINER RES, V19, P1302, DOI 10.1359/JBMR.040408
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NR 121
TC 162
Z9 188
U1 0
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PU BIOMED CENTRAL LTD
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AU Volpi, P
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TI Lateral unicompartimental knee arthroplasty: indications, technique and short-medium term results
SO KNEE SURGERY SPORTS TRAUMATOLOGY ARTHROSCOPY
LA English
DT Article
DE lateral knee arthritis; unicompartmental lateral arthroplasty; arthritic genu valgum; unicondylar arthroplasty; unicompartimental knee arthroplasty (UKA)
ID anterior cruciate ligament; 10-year follow-up; unicompartmental arthroplasty; clinical-experience; replacement; osteoarthritis; osteonecrosis; survivorship; deformity; osteotomy
AB Lateral unicompartmental knee arthroplasty (UKA) is a valid alternative treatment in the event of arthritis confined to the lateral compartment. This paper examines its indications, technique and short to medium-term results. A total of 159 Miller-Galante cemented UKA prostheses (Zimmer, Warsaw, Indiana) were implanted consecutively (131 medial and 28 lateral) by the same surgeon. This study investigates 28 lateral UKAs in 27 patients. Twenty-five implants in 24 patients (including a subject operated bilaterally) were followed up for 12-60 months. Three patients were discarded on account of to short a follow-up period. The Hospital for Special Surgery (HSS) knee score was used to compare the pre-and post-operative results of the lateral UKA patients. The HSS score improved from a pre-op mean of 59.92 (range 48-68) to 88.04 (range 71-95) at the last follow-up. There was a positive increase in the pain, function and ROM components of the score. The lateral UKA prosthesis can be regarded as a sound alternative to total knee replacement. Correct patient selection on the basis of optimum surgical indications, however, is essential.
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NR 33
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Z9 19
U1 0
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PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0942-2056
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JI Knee Surg. Sports Traumatol. Arthrosc.
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AF Im, Hee-Jeong
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TI Basic fibroblast growth factor stimulates matrix metalloproteinase-13 via the molecular cross-talk between the mitogen-activated protein kinases and protein kinase Cδ pathways in human adult articular chondrocytes
SO JOURNAL OF BIOLOGICAL CHEMISTRY
LA English
DT Article
ID bronchial epithelial-cells; receptor tyrosine kinases; factor-kappa-b; gene-expression; rheumatoid-arthritis; factor-i; osteoarthritic cartilage; interleukin-8 secretion; osteogenic protein-1; promoter activity
AB Excessive release of basic fibroblast growth factor (bFGF) during loading and/or injury of the cartilage matrix may contribute to the onset or progression of osteoarthritis. This pathological role may be related to the ability of bFGF to decrease proteoglycan synthesis and to antagonize the activity of anabolic growth factors in cartilage such as insulin-like growth factor-1 and bone morphogenetic protein 7 (BMP7 or OP-1). Matrix metalloproteinase-13 (MMP-13), a catabolic cartilage-degrading enzyme, is dramatically up-regulated by inflammatory cytokines or by fibronectin fragments in articular chondrocytes. In this study, we investigated MMP-13 production by bFGF using human articular chondrocytes. Endogenous concentration of bFGF in synovial fluids collected from arthritis patients and asymptomatic subjects showed a good linear correlation with the endogenous levels of MMP-13. bFGF stimulation of MMP-13 was mediated at the transcriptional level and, at least in part, by stimulation of interleukin-1 production. Also, our findings suggest that bFGF stimulation of MMP-13 required the activation of multiple MAPKs (ERK, p38, and JNK) by bFGF, and more importantly, bFGF activation of protein kinase C (PKC) delta played a key role in the MMP-13 stimulation. Indeed, PKC delta is the only isoform associated with MMP-13 stimulation among the PKC isoforms tested. PKC delta controls the bFGF response by regulating multiple MAPK pathways. Our results suggest that PKC delta activation is a principal rate-limiting event in the bFGF-dependent stimulation of MMP-13 in human adult articular chondrocytes. We propose that deregulation of cross-talk between MAPK and PKC delta signaling may contribute to the etiology of osteoarthritis in human patients.
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TC 151
Z9 175
U1 0
U2 16
PU AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC
PI BETHESDA
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SN
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J9 J BIOL CHEM
JI J. Biol. Chem.
PD APR 13
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IS 15
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DI 10.1074/jbc.M609040200
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WC Biochemistry & Molecular Biology
SC Biochemistry & Molecular Biology
GA 160LG
UT WOS:000245941500032
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ER

PT J
AU Corrado, A
Santoro, N
Cantatore, FP
AF Corrado, Addolorata
Santoro, Nella
Cantatore, Francesco Paolo
TI Extra-skeletal effects of bisphosphonates
SO JOINT BONE SPINE
LA English
DT Review
DE bisphosponates; osteoclasts; inflammation; osteoarthritis; arthritis
ID acute-phase response; active rheumatoid-arthritis; bone-resorption; intravenous pamidronate; double-blind; etidronate therapy; induced apoptosis; zoledronic acid; single infusion; lining cells
AB Bisphosphonates are pharmacological agents which are currently used both in osteoporosis than in other pathological conditions characterised by an increased

bone resorption, such as Paget's disease of bone, malign hypocalcaemia during myeloma, osteolytic bone metastasis and fibrous dysplasia of bone. The most important biological effect of bisphosphonates is the reduction of bone remodelling through the inhibition of osteoclastic activity, but there are many clinical and experimental evidences of extra-skeletal biological effects of bisphosphonates. It has been shown that bisphosphonates exert their effects not only on bone tissue cells, but also on those of the immune system with an "immunomodulating" effect, influencing the production of pro- and anti-inflammatory cytokines and changing the molecular expression involved in the immune processes and anti-inflammatory response. Although the available data are conflicting, there are several reports concerning the beneficial effects of bisphosphonates in controlling the progression of chronic joint inflammatory diseases, suggesting a wider use for these therapeutic agents in clinical practice. (C) 2006 Elsevier Masson SAS. All rights reserved.
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NR 61
TC 62
Z9 71
U1 0
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PU ELSEVIER FRANCE-EDITIONS SCIENTIFIQUES MEDICALES ELSEVIER
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PA 65 RUE CAMILLE DESMOULINS, CS50083, 92442 ISSY-LES-MOULINEAUX, FRANCE
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J9 JOINT BONE SPINE
JI Joint Bone Spine
PD JAN 15
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IS 1
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WC Rheumatology
SC Rheumatology
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PT J
AU Mosca, M
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TI Occurrence of organ-specific and systemic autoimmune diseases among the first- and second-degree relatives of Caucasian patients with connective tissue diseases: report of data obtained through direct patient interviews
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE autoimmune thyroid disease; connective tissue diseases; familial aggregation; organ-specific autoimmune diseases
ID lupus-erythematosus; familial aggregation; increased prevalence; disorders
AB Studies have demonstrated a familial aggregation of systemic and organ-specific autoimmune diseases. The aim of the present survey was to obtain, by patient interviews, a preliminary estimate of the prevalence of systemic and organ-specific autoimmune diseases among the first- and second-degree relatives of Caucasian patients with connective tissue diseases (CTD) or inflammatory arthritis followed at our unit. Between June 2007 and January 2008, 626 patients and 85 controls (patients with osteoarthritis, osteoporosis, or fibromyalgia) were interviewed. Three hundred ten patients (50%) versus 21 controls (25%) were found to have at least one relative affected with an autoimmune condition ($p < 0.0001$). The most common conditions were organ-specific autoimmune diseases: 160 (34%) autoimmune thyroid (AT) disease, 112 (24%) psoriasis, 21 vitiligo, and 19 insulin-dependent diabetes mellitus. Systemic autoimmune diseases were reported in 126 relatives: rheumatoid arthritis (66 cases, 14%), 16 sacroileitis, and CTD (43 cases). A significant difference was observed in the prevalence of AT disease between the relatives of the patients and controls (3% versus 0.5%). In conclusion, these data confirm the high prevalence of autoimmune conditions, particularly of AT disease, among the relatives of patients.
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NR 16
TC 10
Z9 12
U1 0
U2 2
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0770-3198
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J9 CLIN RHEUMATOL
JI Clin. Rheumatol.
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WC Rheumatology
SC Rheumatology
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PT J
AU Wang, Y
Wluka, A
Hodge, AM
English, DR
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O'Sullivan, R
Cicuttini, FM
AF Wang, Y.
Wluka, Anita
Hodge, A. M.
English, D. R.
Giles, G. G.
O'Sullivan, R.
Cicuttini, Flavia M.
TI Effect of fatty acids on bone marrow lesions and knee cartilage in healthy, middle-aged subjects without clinical knee osteoarthritis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE fatty acids; bone marrow lesions; cartilage; cartilage defects
ID dietary habits; cohort; association; density; volume; determinants; osteoporosis; degradation; progression; thickness
AB Objective: There is evidence that omega-3 polyunsaturated fatty acids alleviate the progression of osteoarthritis (OA). However, little work has been done to investigate the effect of fatty acids on bone marrow lesions and knee cartilage in healthy subjects. We examined this in a cohort of healthy middle-aged subjects without clinical knee OA. Methods: Two hundred and ninety-three healthy adults without knee pain or injury were recruited from an existing community-based cohort. Intakes of fatty acids and food sources of these were estimated from a food frequency questionnaire at baseline. Tibial cartilage volume, tibial plateau bone area, tibiofemoral cartilage defects and bone marrow lesions were assessed

approximately 10 years later using magnetic resonance imaging. Results: In multivariate analyses, higher intakes of monounsaturated fatty acids (OR = 2.14, 95% CI 1.04-4.39, P = 0.04), total (OR = 1.77, 95% CI 1.13-2.77, P = 0.01) and n-6 polyunsaturated fatty acids (OR = 1.69, 95% CI 1.10-2.61, P = 0.02) were associated with an increased risk of bone marrow lesions. Intake of fatty acids was not significantly associated with cartilage volume or cartilage defects. Conclusion: These findings support the dietary recommendation towards a shift to foods rich in n-3 polyunsaturated fatty acids in order to maintain an optimal balance between dietary n-3 and n-6 polyunsaturated fatty acids, which is also important in the prevention of atherosclerosis. Although our findings will need to be confirmed in longitudinal studies, they suggest the potential of fatty acids to adversely effect the knee joint. (C) 2007 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 38
TC 36
Z9 40
U1 0

U2 5
PU ELSEVIER SCI LTD
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SN 1063-4584
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD MAY 15
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WC Orthopedics; Rheumatology
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PT J
AU Jiang, LS
Zhang, ZM
Jiang, SD
Chen, WH
Dai, LY
AF Jiang, Lei-Sheng
Zhang, Zi-Ming
Jiang, Sheng-Dan
Chen, Wei-Hua
Dai, Li-Yang
TI Differential bone metabolism between postmenopausal women with osteoarthritis and osteoporosis
SO JOURNAL OF BONE AND MINERAL RESEARCH
LA English
DT Article
DE osteoarthritis; osteoporosis; menopause; bone metabolism; leptin
ID soluble leptin receptor; dose micronized 17-beta-estradiol; mineral density; adolescent girls; body-composition; stromal cells; older women; upper end;

turnover; index
AB A comparative study of bone metabolism between postmenopausal women with osteoarthritis and osteoporosis showed that differential levels of bone remodeling markers, leptin, free leptin index, and osteoprotegerin might partly contribute to the proposed inverse relationship in bone mass between postmenopausal women with osteoarthritis and osteoporosis. Introduction: Osteoarthritis (OA) and osteoporosis (OP) are two common disorders affecting the quality of life in the elderly. The association between OA and OP has always been debated. The objective of this study was to compare bone metabolism between postmenopausal women with OA and OP. Materials and Methods: A total of 120 postmenopausal women with OA and OP (n = 60, respectively) were included in this comparative study. Anthropometric parameters and BMD at the spine and the proximal femur were measured. Serum leptin, soluble leptin receptor (sLR), osteoprotegerin (OPG), and bone remodeling markers, including bone-specific alkaline phosphatase (BALP), osteocalcin (OC), deoxypyridinoline cross-links (DPD), and cross-linked N-telopeptides of type I collagen (NTX), were quantified with commercial ELISA or EIA kits. Free leptin index (FLI) was also calculated by the ratio between serum leptin and sLR levels. Results: Postmenopausal women with OA had higher body weight, body mass index, fat mass, and percentage of fat than those suffered from OP. Compared with the patients in OP group, the patients in OA group had significantly higher BMD values at all sites measured. Higher serum leptin and FLI and lower OPG levels were shown in the OA group (leptin: 31.22 +/- 6.4 versus 26.50 +/- 9.27 ng/ml, $p < 0.001$; FLL 3.20 +/- 1.02 versus 2.50 +/- 0.95, $p < 0.05$; OPG: 4.75 +/- 1.97 versus 6.96 +/- 2.75 pM, $p < 0.001$), whereas lower serum OC and higher urine DPD were noted in the OP group (OC: 16.45 +/- 8.45 versus 13.06 +/- 6.25 ng/ml, $p < 0.05$; DPD: 10.83 +/- 7.12 versus 15.29 +/- 6.65 nM BCE/mM Cr, $p < 0.001$). Serum OPG levels negatively correlated with BMD at all sites assessed. However, no correlation was found between leptin and BMD. Only in the OA group di positive correlations exist between FLI and Z-score at the femoral neck and Ward's triangle region. After stepwise regression analysis, it was found that differential factors were able to predict the variance of BMD at different sites to a certain extent. Conclusions: Our study suggests that there are significant differences in bone metabolism between postmenopausal women with OA and OP and provides evidence for the inverse relationship between OA and OP. Differential levels of bone remodeling markers, leptin, FLI, and OPG may partly contribute to the proposed inverse relationship. Roles of leptin and its soluble receptor in bone metabolism regulation should be explored further.
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TC 39
Z9 45
U1 0
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Liu-Léage, S
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AF Roux, C.
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TI Inverse relationship between vertebral fractures and spine osteoarthritis in postmenopausal women with osteoporosis
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID bone-mineral density; intervertebral disc degeneration; radiographic osteoarthritis; hip; osteophytosis; association; population; chingford; risk; men
AB Background: Although the coexistence of osteoarthritis and osteoporosis is considered as uncommon, it has been suggested that, in postmenopausal women, disc space narrowing increases the risk of vertebral fracture. The aim of this study was to check this hypothesis in postmenopausal women with osteoporosis. Objective: We analysed the relationship between vertebral fractures and spine osteoarthritis in 410 postmenopausal women with osteoporosis: in this population both disc space narrowing and osteophytes are inversely related to vertebral fractures. Patients and methods: This study is based on baseline data collected in a multicentre, prospective and 6-month longitudinal observational study. 410

postmenopausal women (74 +/- 5 years) were enrolled who had consulted for back pain, and had osteoporosis (according to WHO definition). Spine x-rays were performed according to standardised procedures. Vertebral fractures were evaluated from T4 to L4 using the Genant's semiquantitative method; osteoarthritis was evaluated by scoring osteophytes and disc space narrowing at all levels of the thoracic and lumbar spine, and by a qualitative assessment of facet joint arthritis. Results: The prevalence of vertebral fractures was 52.4%. At least one osteophyte, one disc space narrowing and one facet arthritis were present in 90.2, 64.6 and 77.8% of patients respectively. There was an inverse association between vertebral fractures and osteoarthritis: odds ratios adjusted for age and weight (95% CI) were 0.38 (0.17 - 0.86), p = 0.02 and 0.27 (0.16 - 0.46), p, 1024 for the presence of at least one osteophyte, and of at least three disc space narrowings respectively. In a cluster analysis, it was possible to identify a subgroup of patients without any disc space narrowing, and another subgroup with all patients having at least one disc space narrowing; the proportion of patients having more than three vertebral fractures was 25.2 and 15.9% in these two clusters respectively. Conclusions: Disc space narrowing and osteophytes are associated with a decreased vertebral fracture prevalence in postmenopausal women with osteoporosis.
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TI Salmon calcitonin: a review of current and future therapeutic indications
SO OSTEOPOROSIS INTERNATIONAL
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DT Review
ID bone-mineral density; osteoporotic vertebral fractures; pagets-disease; postmenopausal women; nasal spray; double-blind; established osteoporosis; randomized-trial; antiresorptive treatment; nonvertebral fractures
AB Salmon calcitonin, available as a therapeutic agent for more than 30 years, demonstrates clinical utility in the treatment of such metabolic bone diseases as osteoporosis and Paget's disease, and potentially in the treatment of osteoarthritis. This review considers the physiology and pharmacology of salmon calcitonin, the evidence based research demonstrating efficacy and safety of this medication in postmenopausal osteoporosis with potentially an effect on bone quality to explain its abilities to reduce the risk of spine fracture, the development of an oral salmon calcitonin preparation, and the therapeutic rationale for this preparation's chondroprotective effect in osteoarthritis.
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J9 OSTEOPOROSIS INT
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PT J
AU Bolbos, RI
Zuo, J
Banerjee, S
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Majumdar, S
AF Bolbos, R. I.
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TI Relationship between trabecular bone structure and articular cartilage morphology and relaxation times in early OA of the knee joint using parallel MRI at 3 T
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Trabecular bone; Cartilage; Magnetic resonance imaging; T1 rho; T2
ID subchondral bone; mechanical-property; osteoarthritic knee; degeneration; interrelationship; reproducibility; osteoporosis; precision; images; tesla
AB Objective: To evaluate trabecular bone structure in relationship with cartilage parameters in distal femur and proximal tibia of the human knee at 3 Tesla (3 T) using high-resolution magnetic resonance imaging (MRI) with parallel imaging. Method: Sixteen healthy controls and 16 patients with mild osteoarthritis (OA) were studied using a 3 T magnetic resonance (MR) scanner and an eight-channel phased-array knee coil. Axial 3D GeneRalized Autocalibrating Partially Parallel Acquisition (GRAPPA)-based phase cycled Fast Imaging Employing Steady State Acquisition (FIFSTA-c) images were acquired in order to quantify the trabecular bone structure. For assessing cartilage morphology (thickness, volume), sagittal high-resolution 3D spoiled gradient echo (SPGR) images were acquired. In a subset of the subjects. sagittal images were acquired for measuring T1 rho and T2 relaxation times, using 3D T1 rho and T2 mapping techniques. Results: Good measurement reproducibility was observed for bone parameters, the coefficients of variations (CVs) ranging from 1.8% for trabecular number (app. Tb-N) to 5.5% for trabecular separation (app. Tb.Sp). Significant differences between control and CA groups were found for bone volume fraction bone volume over total volume (app. BV/TV) and app. Tb.Sp in all compartments. Significantly increased values in T1 rho and T2 were demonstrated in CA patients compared with controls at the femur, but not at the tibia. Tip was negatively correlated with app. BV/TV, app. Tb.N and app. Tb.Sp both at the medial femoral condyle (MFC) and lateral tibia (LT), while T2 was only correlated at the LT. Also, medial tibia (MT) T1 rho was negatively correlated with app. BV/TV (R-2 - 0.49, $P < 0.05$) and app. Tb.N (R-2 = -0.42, $P < 0.05$) from the opposite side of lateral femoral condyle (LFC). Significant correlations were found between trabecular bone parameters and cartilage thickness and normalized volume, mainly at LT, tibia (T) and femur (F). Conclusion: At this early stage of CA, an overall decrease in bone structure parameters and an increase in cartilage

parameters (T1 rho, T2) were noticed in patients. Trabecular bone structure correlated with articular cartilage parameters suggesting that loss of mineralized bone is associated with cartilage degeneration. Published by Elsevier Ltd on behalf of Osteoarthritis Research Society International.
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PA 32 JAMESTOWN RD, LONDON NW1 7BY, ENGLAND
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PT J
AU Hoffman, DL
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AF Hoffman, D. L.
Dukes, E. M.
TI The health status burden of people with fibromyalgia: a review of studies that assessed health status with the SF-36 or the SF-12
SO INTERNATIONAL JOURNAL OF CLINICAL PRACTICE
LA English
DT Review
ID quality-of-life; systemic-lupus-erythematosus; double-blind; musculoskeletal diseases; rheumatoid-arthritis; widespread pain; classification; criteria; population; exercise
AB Objective: The current review describes how the health status profile of people with fibromyalgia (FM) compares to that of people in the general population and patients with other health conditions. Methods: A review of 37 studies of FM that measured health status with the 36-item Medical Outcomes Study Short-Form Health Survey (SF-36) or the 12-item Short-Form Health Survey (SF-12). Results: Studies performed worldwide showed that FM groups were significantly more impaired than people in the general population on all eight health status domains assessed. These domains include physical functioning, role functioning difficulties caused by physical problems, bodily pain, general health, vitality (energy vs. fatigue), social functioning, role functioning difficulties caused by emotional problems and mental health. FM groups had mental health summary scores that fell 1 standard deviation (SD) below the general population mean, and physical health summary scores that fell 2 SD below the general population mean. FM groups also had a poorer overall health status compared to those with other specific pain conditions. FM groups had similar or significantly lower (poorer) physical and mental health status scores compared to those with rheumatoid arthritis, osteoarthritis, osteoporosis, systemic lupus erythematosus, myofacial pain syndrome, primary Sjogren's syndrome and others. FM groups scored significantly lower than the pain condition groups mentioned above on domains of bodily pain and vitality. Health status impairments in pain and vitality are consistent with core features of FM. Conclusions: People with FM had an overall health status burden that was greater in magnitude compared to people with other specific pain conditions that are widely accepted as impairing.

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AU Pareta, RA
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TI Increased osteoblast density in the presence of novel calcium phosphate coated magnetic nanoparticles
SO NANOTECHNOLOGY
LA English
DT Article
ID bisphosphonates; bone; iron; expression; gene; size
AB Bone diseases (including osteoporosis, osteoarthritis and bone cancer) are of great concern to the medical world. Drugs are available to treat such diseases, but often these drugs are not specifically targeted to the site of the disease and, thus, lack an immediate directed therapeutic effect. The optimal drug delivery system should enhance healthy bone growth with high specificity to the site of bone disease. It has been previously shown that magnetic nanoparticles can be directed in the presence of a magnetic field to any part of the body, allowing for site-specific drug delivery and possibly an immediate increase in bone density. The objective of the present study was to build off of this evidence and determine the density of osteoblasts (bone forming cells) in the presence of various uncoated and coated magnetic nanoparticles that could eventually be used in drug delivery applications. Results showed that some magnetic nanoparticles (specifically, gamma Fe2O3) significantly promoted osteoblast density (that is, cells per well) after 5 and 8 days of culture compared to controls (no particles). These magnetic

nanoparticles were further coated with calcium phosphate (CaP; the main inorganic component of bone) to tailor them for treating various bone diseases. The coatings were conducted in the presence of either bovine serum albumin (BSA) or citric acid (CA) to reduce magnetic nanoparticle agglomeration, a common problem resulting from the use of nanoparticles which decreases their effectiveness. Results with these coatings showed that magnetic nanoparticles, specifically (gamma-Fe2O3), coated in the presence of BSA significantly increased osteoblast density compared to controls after 1 day. In this manner, this study provided unexpected evidence that CaP-coated gamma-Fe2O3 magnetic nanoparticles increased osteoblast density (compared to no particles) and, thus, should be further studied to treat numerous bone diseases.
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WC Nanoscience & Nanotechnology; Materials Science, Multidisciplinary; Physics, Applied
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TI Bone marrow edema pattern in advanced hip osteoarthritis: quantitative assessment with magnetic resonance imaging and correlation with clinical examination, radiographic findings, and histopathology
SO SKELETAL RADIOLOGY
LA English
DT Article
DE hip; osteoarthritis; bone marrow edema; MRI; histopathology
ID subchondral bone; knee osteoarthritis; destructive osteoarthritis; transient osteoporosis; core decompression; cartilage; lesions; joint; pain; microfractures
AB Objective To correlate the amount of bone marrow edema (BME) calculated by magnetic resonance imaging(MRI) with clinical findings, histopathology, and radiographic findings, in patients with advanced hip osteoarthritis(OA). Materials and methods The study was approved by The Institutional Human Subject Protection Committee. Coronal MRI of hips was acquired in 19 patients who underwent hip replacement. A spin echo (SE) sequence with four echoes and separate fast spin echo (FSE) proton density (PD)-weighted SE sequences of fat (F) and water (W) were acquired with water and fat suppression, respectively. T2 and water:fat ratio calculations were made for the outlined regions of interest. The calculated MRI values were correlated with the clinical, radiographic, and histopathologic findings. Results Analyses of variance were done on the MRI data for W/(W + F) and for T2 values (total and focal values) for the symptomatic and contralateral hips. The values were significantly higher in the study group. Statistically significant correlations were found between pain and total W/(W + F), pain and focal T2 values, and the number of microfractures and calculated BME for the focal W/(W + F) in the proximal femora. Statistically significant correlations were found between the radiographic findings and MRI values for total W/(W + F), focal W/(W + F) and focal T2 and among the radiographic findings, pain, and hip movement. On histopathology, only a small amount of BME was seen in eight proximal femora. Conclusion The amount of BME in the OA hip, as measured by MRI, correlates with the severity of pain, radiographic findings, and number of microfractures.
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NR 27
TC 177
Z9 200
U1 0
U2 10
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0364-2348
EI 1432-2161
J9 SKELETAL RADIOL
JI Skeletal Radiol.
PD MAY 15
PY 2008
VL 37
IS 5
BP 423
EP 431
DI 10.1007/s00256-008-0446-3
PG 9
WC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
SC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
GA 278CV
UT WOS:000254262000005
PM 18274742
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ER

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AF Ragab, Yasser
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TI Bone marrow edema syndromes of the hip: MRI features in different hip disorders
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE avascular necrosis of the hip; bone marrow edema syndromes; magnetic resonance imaging of hip disorders; transient bone marrow edema syndrome of the hip joint
ID femoral-head; transient osteoporosis; rheumatoid-arthritis; avascular necrosis; ankylosing-spondylitis; core decompression; osteonecrosis; spine
AB The objectives of this study were to describe the essential magnetic resonance imaging (MRI) features of bone marrow edema syndromes affecting the hip joint. In addition, to evaluate the role of MRI in the assessment of hip joint involvement in different clinical settings that may share similar clinical findings. Thirty-four patients who complained of hip pain were studied consecutively. Of these, 21 were men (61.8%) and 13 were women (38.2%). After clinical assessment of possible hip disease, plain radiograph and MRI study of both hips were performed. The literature was searched using keywords: bone marrow edema, hip, and MRI. All patients had antalgic gait and limping. Initial clinical examination revealed painful limited internal and external rotation of the affected hip/hips suspect for hip disease. Unilateral hip involvement was identified in 31 patients (91.2%), and bilateral hip involvement was found in three patients (8.8%), with a total of 37 hips evaluated by MRI. The final diagnoses in our patients were: reactive arthritis (1), transient osteoporosis (7), avascular necrosis (10), osteoarthritis (2), tuberculous arthritis (4), septic arthritis (2), osteomyelitis (2), sickle cell anemia (2), lymphocytic leukemia (1), and femoral stress fracture (3). Bone marrow edema affecting the hip is neither a specific MR imaging finding nor a specific diagnosis and may be encountered in a variety of hip disorders due to different etiologies. MR imaging is the modality of choice when clinical examination is suspect for hip disease and plain radiographs are normal or equivocal. Early diagnosis and treatment is important in many of the disorders. The literature is reviewed regarding bone marrow edema of the hip.
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NR 33
TC 39
Z9 49
U1 1
U2 7
PU SPRINGER LONDON LTD
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J9 CLIN RHEUMATOL
JI Clin. Rheumatol.
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WC Rheumatology
SC Rheumatology
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PT J
AU Wang, H
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TI Association of bone morphogenetic protein-2 gene polymorphisms with susceptibility to ossification of the posterior longitudinal ligament of the spine and its severity in Chinese patients
SO EUROPEAN SPINE JOURNAL
LA English
DT Article
DE OPLL; BMP-2 gene; PCR; polymorphism; case-control study
ID knee osteoarthritis; candidate genes; cervical-spine; collagen; metabolism; receptors; haplotype; linkage; model; npps
AB A case-control study was conducted to examine the association between two single nucleotide polymorphisms (SNPs) in exon 2 of the bone morphogenetic protein-2 gene (BMP-2) and ossification of the posterior longitudinal ligament (OPLL), and to investigate whether SNPs of the Ser37Ala (T/G) and the Ser87Ser (A/G) in the BMP-2 gene are associated with genetic susceptibility to OPLL and its severity in Chinese subjects. The Ser87Ser (A/G) SNP has been implicated in bone mineral density (BMD) and increases the risk of OA in women. The Ser37Ala (T/G) SNP is associated with BMD and the rate of bone loss in osteoporosis and osteoporosis fractures. A total of 57 OPLL patients and 135 non-OPLL controls were studied. Radiographs of the cervical spine were analyzed to determine the presence and the severity of OPLL. The association of two SNPs with the occurrence and the extent of OPLL were statistically evaluated. There was a significant association between the Ser37Ala (T/G) polymorphism and the occurrence of OPLL in the cervical spine. However, no significant association was found between the Ser37Ala (T/G) polymorphism and the more number of ossified cervical vertebrae in OPLL patients. There was a significant association between the Ser87Ser (A/G) polymorphism and the more number of ossified cervical vertebrae in OPLL patients. However, there was no statistical difference between the Ser87Ser (A/G) SNP and the occurrence of OPLL in the cervical spine. In addition, the Ser87Ser (A/G) polymorphism in male patients and in female patients showed no statistical difference between cases and controls. The present results demonstrate that BMP-2 Gene is not only a factor associated with the occurrence of OPLL, but also a factor related to more extensive OPLL. The "G" allele in the Ser37Ala (T/G) polymorphism is associated with the occurrence of OPLL, but not more extensive OPLL in the cervical spine. The "G" allele in the Ser87Ser (A/G) polymorphism promotes the extent of OPLL, whereas the "A" allele in the Ser87Ser (A/G) polymorphism restricts ectopic ossification in the cervical spine at least in Chinese subjects.
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NR 38
TC 51
Z9 67
U1 0
U2 6
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0940-6719
EI
J9 EUR SPINE J
JI Eur. Spine J.
PD JUL 15
PY 2008
VL 17
IS 7
BP 956
EP 964
DI 10.1007/s00586-008-0651-8
PG 9
WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
GA 322RD
UT WOS:000257392100008
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PT J
AU Zhai, G

Hart, DJ
Valdes, AM
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AF Zhai, G.
Hart, D. J.
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Kato, B. S.
Richards, J. B.
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Spector, T. D.
TI Natural history and risk factors for bone loss in postmenopausal Caucasian women: a 15-year follow-up population-based study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE age; bone loss; HRT; weight
ID mineral density; calcium supplementation; general-population; cigarette-smoking; proximal femur; weight change; osteoporosis; fat; osteoarthritis; premenopausal
AB In this 15-year follow-up study, we found that the estimated rate of bone loss at the femoral neck (FN) for women aged 45-68 was linear at a rate of 1.67% per year, but quadratic for lumbar spine (LS) at a rate of 3.12% initially, and slowing down with age. We also confirmed the protective role of HRT, increasing weight, and lean mass in long-term bone loss. Introduction The objective was to describe the natural history of bone loss and explore the role of environmental factors in postmenopausal women over a 15-year period. Methods Bone mineral density (BMD) at the FN and the LS were measured in postmenopausal women from the Chingford Study. Height, weight, HRT status, and calcium/vitamin D supplement were assessed at each visit. Osteoarthritis of hip and spine was assessed by X-ray at baseline and at year 8. Results A total of 955 postmenopausal women with an average age of 54.7 at baseline were included. Both FN and LS BMD decreased significantly with age ($p < 0.0001$). The decline was larger in the LS (-3.12% per year), which showed a quadratic relationship, than in the FN (-1.67% per year) with a linear relationship. The rate of bone loss was reduced by one third annually for the FN and LS respectively in current HRT users. Change in weight was positively associated with both Delta FN and Delta LS BMD (beta = 0.16% and 0.09% change in Delta FN and Delta LS BMD per kilogramme change in weight respectively, $p < 0.0001$ for both sites). Spine OA and progression were positively associated with Delta LS BMD (beta = 1.22% change in Delta LS BMD per grade in spine OA and 0.45% change in Delta LS BMD for patients who progressed, $p < 0.0001$ for spine OA and $p = 0.002$ for spine OA progression). Spine OA (beta = 0.54% change in

Delta FN BMD per grade, p < 0.0001), but not progression, and hip OA were positively associated with Delta FN BMD. Furthermore, both age and body weight at baseline were positively associated with both Delta FN and Delta LS BMD (beta = 0.02-0.04% change in Delta FN and Delta LS BMD per year increase in age at baseline and 0.004-0.007% change in Delta FN and Delta LS BMD per kilogramme increase in weight at baseline, all p < 0.0001). Conclusion This large population-based longitudinal study demonstrated that the decline of BMD over 15 years is linear with age for the FN, but quadratic for the LS. The study confirmed the protective role of HRT, increased weight and lean mass in long-term bone loss.
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NR 24
TC 39
Z9 43
U1 0
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PU SPRINGER LONDON LTD
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PT J
AU Yazdany, J
MacLean, CH
AF Yazdany, Jinoos

MacLean, Catherine H.
TI Quality of care in the rheumatic diseases: current status and future directions
SO CURRENT OPINION IN RHEUMATOLOGY
LA English
DT Review
DE gout; osteoarthritis; osteoporosis; quality of healthcare; rheumatic diseases; rheumatoid arthritis
ID fee-for-service; arthritis care; managed care; gout; osteoporosis; pay; performance; indicators; outcm; osteoarthritis
AB Purpose of review To review the recent literature examining quality of care for several prevalent rheumatic conditions, including rheumatoid arthritis, osteoarthritis, gout and osteoporosis, and to summarize quality measurement and improvement initiatives relevant to rheumatology in the USA. Recent findings In recent years, research has identified a significant gap between ideal and actual clinical practice in the USA. Consistent with trends seen in the US healthcare system as a whole, research suggests deficits in healthcare quality for populations with rheumatic conditions. We review the growing literature on quality of care for rheumatoid arthritis, osteoarthritis, gout and glucocorticoid-induced osteoporosis. Summary Existing evidence suggests suboptimal healthcare quality for four common rheumatic conditions, a finding that parallels trends in the healthcare system as a whole.
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NR 63
TC 25
Z9 29
U1 0
U2 2
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
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PT J
AU Ono, Y
Fukaya, Y
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AF Ono, Yuka
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Imai, Shoji
Yamakuni, Tohru
TI Beneficial effects of Ajuga decumbens on osteoporosis and arthritis
SO BIOLOGICAL & PHARMACEUTICAL BULLETIN
LA English
DT Article
DE osteoporosis; arthritis; Ajuga decumbens; inducible nitric oxide synthase; osteoclast; osteoblast
ID nitric-oxide synthase; neo-clerodane diterpenes; bone loss; ovariectomized mice; postmenopausal osteoporosis; estrogen deficiency; rats; osteoarthritis; isoflavone; activation
AB Extract of the whole plant, Ajuga decumbens (KE) has long been used in China as a medication for the relief of joint pain. Previously, we proved that KE up-regulated the synthesis of collagen in false aged model rats. In this paper we examined the effects of KE on nitric oxide (NO) production, expression of inducible nitric oxide synthase (iNOS), osteoblast and osteoclast activity. We also investigated whether KE had any anti-osteoporosis or anti-arthritic activity by using ovariectmized mice and adjuvant induced arthritic rats. KE exhibited down-regulation of differentiation into osteoclast and up-regulation of mineralization in osteoblast-like MC3T3-E1 cells in a concentration-dependent manner. NO synthesized by iNOS plays important roles in inflammatory disease and imbalance between bone resorption and bone formation caused by estrogen depletion. KE inhibited expression of iNOS which caused concentration dependent inhibition of NO production. Furthermore, KE prevented brittle bones in ovariectomized mice and swelling of the left hind ankle in adjuvant induced arthritic rats. Therefore, KE improved the balance of bone resorption and bone formation, showing anti-inflammatory effects. Consequently, KE is beneficial for sufferers of bone and joint disease.

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TC 31
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PU PHARMACEUTICAL SOC JAPAN
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PA 2-12-15 SHIBUYA, SHIBUYA-KU, TOKYO, 150-0002, JAPAN
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PT J
AU Gupta, S
Singh, RK
Dastidar, S
Ray, A
AF Gupta, Suman
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Dastidar, Sunanda
Ray, Abhijit
TI Cysteine cathepsin S as an immunomodulatory target: present and future trends
SO EXPERT OPINION ON THERAPEUTIC TARGETS
LA English

DT Review
DE autoimmune disorders; cathepsin; cysteine protease; inhibitors
ID dipeptidyl-peptidase-i; t-cell selection; invariant chain; reduces atherosclerosis; antigen presentation; l deficiency; degradation; inhibitor; arthritis; proteases
AB Objective: Antigen presentation is the key to immune response. Cathepsin S plays a major role in the degradation of the invariant peptide chain associated with the major histocompatibility complex and thus affects antigen presentation. This review will focus on the recent developments made in field of cysteine cathepsins especially cathepsin S and their future prospects as a therapeutic target. Methods: Selective cathepsin inhibitors for targeting autoimmune disorders, atherosclerosis, osteoporosis, osteoarthritis and cancer are being pursued by many pharmaceutical companies. Recent publications in this field have been used as references to evaluate the current and future trends in cathepsin S inhibitors as an immunomodulatory target. Conclusions: The temporal and spatial position occupied by cathepsin S in immune presentation, gives rise to the hope that an inhibitor would impart selectivity with a lesser propensity for side effects than other immunosuppressive agents.
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Z9 104
U1 0
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PU TAYLOR & FRANCIS LTD
PI ABINGDON
PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
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AU Sudo, A
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AF Sudo, Akihiro
Miyamoto, Noriki
Horikawa, Kazuhiro
Urawa, Masao
Yamakawa, Toru
Yamada, Tomomi
Uchida, Atsumasa
TI Prevalence and risk factors for knee osteoarthritis in elderly Japanese men and women
SO JOURNAL OF ORTHOPAEDIC SCIENCE
LA English
DT Article
ID bone-mineral density; osteoporosis; population; chingford; joint; association; weight; alpha; age
AB Background. The aims of the present study were to examine the prevalence and risk factors for knee osteoarthritis in elderly Japanese men and women. Methods. We examined 598 of the 1513 inhabitants of Miyagawa village aged >= 65 years (393 women, 205 men). Baseline data, obtained with standard questionnaires, included information on age, past history, sports activity, working, knee pain, smoking, and intakes of alcohol and milk. Bone mineral density of the forearm was measured using dual energy X-ray absorptiometry. Anteroposterior radiographs of both knees were graded for osteoarthritis using the Kellgren-Lawrence grading system. Definite osteoarthritis was defined as a grade of 2 or higher. We used logistic regression analysis by the stepwise method to determine the risk factors for radiographic knee osteoarthritis. Results. The prevalence of definite radiographic knee osteoarthritis was 30.0% overall: 17.7% in men and 36.5% in women. The prevalence of symptomatic knee osteoarthritis was 21.2% overall: 10.7% in men

and 26.7% in women. There were significant differences in the risk of radiographic knee osteoarthritis with body mass index (BMI), sex, age, and bone mineral density (BMD). Conclusions. The prevalence of definite radiographic knee osteoarthritis was 30.0% and that of symptomatic knee osteoarthritis was 21.2%. We found that higher BMI, female sex, older age, and higher BMD were significantly associated with an increased risk for radiographic knee osteoarthritis.
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NR 27
TC 49
Z9 60
U1 0
U2 11
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PT J
AU Weigl, M
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TI Determinants of disability chronic musculoskeletal health conditions: a literature review
SO EUROPEAN JOURNAL OF PHYSICAL AND REHABILITATION MEDICINE
LA English
DT Review
DE risk factors; low back pain; arthritis; disability evaluation
ID united-states adults; quality-of-life; low-back-pain; rheumatoid-arthritis; knee osteoarthritis; risk-factors; self-efficacy; functional disability; socioeconomic-status; psychosocial factors
AB Knowledge of the determinants of disability in musculoskeletal conditions (MSC) is critical for reducing their burden. No epidemiologic studies from a truly comprehensive perspective consider environmental factors (EF) and personal factors (PF) as determinants of disability. However, one can identify candidate EF from the International Classification of Functioning, Disability and Health (ICF) Core Sets for rheumatoid arthritis (RA), osteoporosis (OP), osteoarthritis (OA), low back pain (LBP) and chronic wide spread pain (CWP). The objective of this literature review was to contribute to the validation of the EF from the ICF Core Sets for MSC and the candidate PF from a (ICF) Delphi exercise, as well as from the report of the Bone and joint Decade (BJD) Health Strategy Project. The results of the literature search focus on reviews published between January 1991 and March 2006 that contained information on EF and PF that determine disability in LBP, RA and OA. Many PF and EF included in the ICF Core Sets were confirmed as potential determinants of disability. However, regarding some contextual factors, in particular EF referring to the physical environment, there is a lack of reviews and clinical studies that have investigated their relevance to disability. The predominant medical model in studies-on disability in MSC may explain this lack of evidence. However, the increasing attention given to the integrative model of functioning, disability and health of the World Health Organization (WHO) and the approval of the ICF by the World Health Assembly in 2001 may stimulate future research on the effect of EF and PF on disability.
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PA CORSO BRAMANTE 83-85 INT JOURNALS DEPT., 10126 TURIN, ITALY
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AU Burgin, LV
Aspden, RM
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Aspden, Richard M.
TI Impact testing to determine the mechanical properties of articular cartilage in isolation and on bone
SO JOURNAL OF MATERIALS SCIENCE-MATERIALS IN MEDICINE
LA English
DT Article
ID unconfined compression; tissue inhibitor; joint fluid; modulus; load; osteoarthritis; osteoporosis; fragments; collagen; stress
AB The biomechanical response of cartilage to impact loads, both in isolation and in situ on its bone substrate, has been little studied despite the common occurrence of osteoarthritis subsequent to cartilage injury. An instrumented drop tower was used to apply controlled impact loads of different energies to explants of bovine articular cartilage. Results were compared with a conventional slow stress-strain test. The effects of the underlying bone were investigated by progressively shortening a core of bone removed with the cartilage, and by gluing cartilage samples to substrates of different moduli. The maximum dynamic modulus of isolated samples of bovine articular cartilage, at strain rates between 1100 and 1500 s(-1), was approximately two orders of magnitude larger than the quasistatic modulus and varied non-linearly with applied stress. When attached to a substrate of higher modulus, increasing the thickness of the substrate increased the effective modulus of the combination until a steady value was achieved. A lower modulus substrate reduced the effective modulus of the combination. Severe impacts resulted in damage to the bone rather than to the cartilage. The modulus of cartilage rises rapidly and non-linearly with strain rate, giving the tissue a remarkable ability to withstand impact loads. The presence of cartilage attenuated the peak force experienced by the bone and spread the impact loading period over a longer time.
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TC 68
Z9 78
U1 0
U2 24
PU SPRINGER
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PA VAN GODEWIJCKSTRAAT 30, 3311 GZ DORDRECHT, NETHERLANDS
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AU Gailey, R
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TI Review of secondary physical conditions associated with lower-limb amputation and long-term prosthesis use
SO JOURNAL OF REHABILITATION RESEARCH AND DEVELOPMENT
LA English
DT Review
DE back pain; fracture; leg-length discrepancy; lower-limb amputation; osteoarthritis; osteopenia; osteoporosis; prosthetics; rehabilitation; secondary complications
ID below-knee-amputee; low-back-pain; trans-tibial amputation; leg-length discrepancy; bone-mineral density; lower-extremity amputations; weight-bearing; postural sway; residual limb; sach foot
AB Musculoskeletal imbalances or pathologies often develop into secondary physical conditions or complications that may affect the mobility and quality of life of people with lower-limb amputation. Using one or more prostheses causes people with amputation to alter the biomechanics of their movement. For example, people with lower-limb amputation often favor and stress their intact lower limb more during everyday activities. This can lead to degenerative changes such as osteoarthritis of the knee and/or hip joints of the intact limb. Since people with amputation spend less time on their residual limb, osteopenia and subsequent osteoporosis often occur secondary to insufficient loading through the long bones of the lower limb. A proper prosthetic fit increases the probability of equal force distribution across the intact and prosthetic limbs during ambulation, thus decreasing the risk of osteoarthritis. People with limb loss commonly complain of back pain, which is linked to poor prosthetic fit and alignment, postural changes, leg-length discrepancy, amputation level, and general deconditioning. We review the literature on secondary complications among people with lower-limb loss who are long-term prosthesis wearers.
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AF Yang, X.
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TI Primary human osteoblasts and bone cancer cells as models to study glycodynamics in bone
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LA English
DT Article
DE osteoblastic cells; osteoarthritis; cytokines; apoptosis; cell proliferation; glycoproteins; glycosyltransferases
ID growth-factor-beta; tnf-alpha; tgf-beta; endothelial-cells; human fas; glycosylation; expression; apoptosis; biosynthesis; sialoprotein
AB Bone cells produce many glycoproteins potentially involved in the maintenance of healthy bone tissues. Two cytokines produced in inflamed joints, tumor necrosis factor (TNF)alpha and transforming growth factor (TGF)beta, have previously been

shown to alter cellular glycosylation which may potentially affect the expression and function of glycoproteins. In order to evaluate models to study the glycodynamics of bone cells, we examined primary human osteoblastic cells from osteoarthritis patients, and compared these to human osteosarcoma cells MG63 and SJSA-1. We showed here for the first time that all of the human osteoblastic cells actively synthesize complex N- and O-glycan chains of bone cell glycoproteins, with quantitative differences between cell types. TNF alpha-induced apoptosis or TGF beta-induced cell differentiation and proliferation had significant effects on both cell surface carbohydrates and glycosyltransferase activities of osteoblasts and osteosarcoma cells. The results indicate that cultured human bone-derived osteoblastic cells are good models to examine the glycodynamics of osteoblasts under conditions of cell growth and cell death. The changes induced by cytokines can result in altered cell surface functions which may be of importance in osteoarthritis, osteoporosis and other bone diseases. (c) 2007 Elsevier Ltd. All rights reserved.
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AF Lories, Rik J. U.
TI Joint homeostasis, restoration, and remodeling in osteoarthritis
SO BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY
LA English
DT Article
DE bone morphogenetic protein; bone; cartilage; frizzled related protein; osteoarthritis; synovium; wingless-type (WNT)
ID bone morphogenetic proteins; frizzled-related protein-3; tgf-beta-superfamily; articular-cartilage; osteophyte formation; proteoglycan synthesis; hip osteoarthritis; adenoviral overexpression; mechanical injury; wnt antagonist
AB Osteoarthritis is the major cause of joint failure. The outcome of the disease process is determined by complex interactions between cells and molecules steering homeostasis, destruction, restoration, and remodeling. The articular cartilage has a limited restoration and repair capacity. Genetic studies in humans and the development of mouse models have identified the role of signaling pathways that are important for skeletal development in the postnatal biology and pathology of articular cartilage. These include bone morphogenetic protein, transforming growth factor beta, fibroblast growth factor, wingless-type signaling, and their respective antagonists such as noggin and frizzled related protein. The synovium is prone to inflammation and emerging evidence suggests that innate and adaptive immune responses are important. Bone and cartilage form a biomechanical unit; stiffer bones might impair cartilage homeostasis. The biology of frizzled related protein provides a basis for the hypothesized inverse relationship between osteoarthritis and osteoporosis.
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TC 30
Z9 36
U1 0
U2 3
PU BAILLIERE TINDALL
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PA 24-28 OVAL RD, LONDON NW1 7DX, ENGLAND
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AU Goswami, R
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AF Goswami, R.
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TI Prevalence & potential significance of vitamin D deficiency in Asian Indians
SO INDIAN JOURNAL OF MEDICAL RESEARCH
LA English
DT Review
DE osteomalacia; skeletal health; type 2 diabetes mellitus; vitamin D deficiency
ID bone-mineral density; inflammatory-bowel-disease; northern india; blood-pressure; parathyroid-hormone; multiple-sclerosis; d insufficiency; d-receptor; serum 25-hydroxyvitamin-d; 1,25-dihydroxyvitamin d-3
AB Studies from our center and other parts of India have drawn attention towards wide prevalence of vitamin D deficiency (VDD) in our country. VDD has been reported in all age groups including toddlers, school children, pregnant women and their neonates and adult males and females residing in rural and urban India. We reviewed implications of VDD in our population based on the preliminary data available from Indian studies on skeletal health. Besides, a brief review is made on the importance of VDD in various other disorders prevalent in equivalent proportions among Indians such as type 2 diabetes mellitus (DM), cardiovascular diseases (CVD), immune competence including relation to tuberculosis, malignancy and osteoarthritis. Data from the West have also associated VDD with increased prevalence of type 2DM, CVD, autoimmune disorders, tuberculosis, prostate, breast and colon malignancy and osteoarthritis. Such association has not been studied to date in our country. Overall results of various studies conducted to date in urban and rural Indians indicate that widely prevalent VDD is functionally relevant to skeletal health including osteomalacia and rickets. However, there is a need to

explore its association with osteoporosis related fractures and various other non skeletal disorders linked with VDD.
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PA WOLTERS KLUWER INDIA PVT LTD , A-202, 2ND FLR, QUBE, C T S NO 1498A-2 VILLAGE MAROL, ANDHERI EAST, MUMBAI, 400059, INDIA
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AU Hayashi, M
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AF Hayashi, Masaya
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Ju, Young-Jin
Mochizuki, Tomoyuki
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TI Weekly intra-articular injections of bone morphogenetic protein-7 inhibits osteoarthritis progression
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Article
ID human articular chondrocytes; anterior cruciate ligament; human osteogenic protein-1; proteoglycan synthesis; cartilage defects; rabbit knee; repair; model; op-1; rhbmp-2
AB Introduction We investigated the ability of a weekly intra-articular injection of bone morphogenetic protein (BMP)-7 to prevent osteoarthritis in rabbits with anterior cruciate ligament transections. Methods First, 36 knee joints were randomly divided into four groups: 50, 500, 5,000 ng BMP-7, and control. Knee cartilage was evaluated at 4, 8, and 12 weeks. Then, in order to control for individual differences, 500 ng BMP-7 was injected into one knee and phosphate-buffered saline (PBS) into the other, and the two knees were compared at 4, 8, and 12 weeks (n = 5). For pharmacokinetic analysis, cartilage was harvested at 1 hour and 1, 2, 4, and 7 days after knee injection of 500 ng BMP-7 or PBS (n = 3). Results Histological scores in the 500 and 5,000 ng BMP-7 groups were significantly better than those in the other groups at 12 weeks. Matched pair analysis demonstrated that both macroscopic and histological scores in the 500 ng BMP-7 group were better than those in the control group. Immunohistochemical analysis revealed higher BMP-7 expression by chondrocytes in the BMP-7 injected knees. Histology of whole knee and quantitative micro computed tomography analysis showed that weekly injections of 500 ng BMP-7 did not induce synovial fibrosis, ectopic bone, or osteophyte formation. As detected by enzyme-linked immunosorbent assay, BMP-7 concentration in the cartilage tissue was still higher in the BMP-7 treated group 7 days after the injection. Conclusions Weekly intra-articular injections of BMP-7 inhibited progression of osteoarthritis. Obvious adverse effects were not observed. BMP-7 concentration and expression in cartilage were still higher 7 days after injection.
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Z9 72
U1 0
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PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
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AU Manicourt, DH
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TI Urban tropospheric ozone increases the prevalence of vitamin D deficiency among Belgian postmenopausal women with outdoor activities during summer
SO JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM
LA English
DT Article
ID parathyroid-hormone levels; d insufficiency; bone health; calcium; osteoporosis; 25-hydroxyvitamin-d; metabolism; prevention; exposure; sunlight

AB Context: By absorbing sunlight UVB and thereby reducing cutaneous vitamin D photosynthesis, ozone, a common urban pollutant, could cause hypovitaminosis D. Objectives: The objective of the study was to establish the characteristics and percentage of subjects with serum 25-hydroxyvitamin D [25(OH)D] less than 75 nmol/liter among postmenopausal women engaging in outdoor activities in either Brussels or the countryside. Design/Setting: This was a cross-sectional study conducted in a university research hospital. Patients/Methods: Among 249 women consulting for either shoulder tendonitis or lumbar spine osteoarthritis, 121 free of conditions and drugs affecting bone and calcium metabolism completed two food-frequency questionnaires within 15 d and we selected the 85 subjects with retest scores within the +/- 15% of test scores. Other parameters included sun exposure index (SEI), PTH levels, and femoral neck T-score. Results: Urban residents (n = 38) and rural residents (n = 47) did not differ in mean ages, body mass indices, and vitamin D intakes. When compared with rural inhabitants, urban inhabitants were exposed to ozone levels 3 times higher, and despite a higher mean SEI (113 vs. 87; P < 0.001), they had a higher prevalence of 25(OH)D less than 75 nmol/liter (84 vs. 38%). After adjusting for SEI, 25(OH)D was 2-fold higher in rural residents, and after adjusting for 25(OH)D, SEI was 3-fold higher in urban residents. Femoral neck T-scores correlated positively with 25(OH)D and negatively with PTH levels. Conclusions: Air pollution may be a neglected risk factor for hypovitaminosis D, which is known to compromise several health outcomes. As long as 25(OH)D is greater than 75 nmol/liter, calcium intakes greater than 17.5 mmol/d are unnecessary to prevent elevations in PTH levels.
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NR 34
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PU ENDOCRINE SOC
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J9 J CLIN ENDOCR METAB
JI J. Clin. Endocrinol. Metab.

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PT J
AU Kim, HJ
Lee, HM
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Park, JO
Moon, ES
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AF Kim, Ho-Joong
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Park, Jin-Oh
Moon, Eun-Su
Park, Hoon
Park, Si-Young
Moon, Seong-Hwan
TI Bone Metabolism in Postmenopausal Women With Lumbar Spinal Stenosis Analysis of Bone Mineral Density and Bone Turnover Markers
SO SPINE
LA English
DT Article
DE spinal stenosis; bone turnover rate; bone turnover marker; bone mineral density
ID peripheral arterial-disease; knee osteoarthritis; biochemical markers; hip osteoarthritis; hypovitaminosis-d; elderly-men; osteoporosis; resorption; chingford; common
AB Study Design. A cross-sectional study. Objective. To investigate bone mineral density (BMD) and the change of bone turnover rate in postmenopausal women

with lumbar spinal stenosis (LSS). Summary of Background Data. Symptomatic LSS prevents elderly patients from performing daily activities because of back pain and neurogenic claudication. Walking intolerance due to neurologic claudication might have a negative effect on bone metabolism and BMD. However, there has been no study on the relationship between LSS and bone metabolism, especially on bone turnover rate. Methods. Sixty-seven patients were in the LSS group. As a control group, 67 age- and weight-matched subjects were selected. In both groups, BMD, bone turnover markers, vitamin D, severity of knee osteoarthritis, and demographic data were obtained. In the LSS group, walking distance without rest was also recorded. BMD, bone turnover markers, vitamin D, and severity of knee osteoarthritis were compared between the two groups. In the LSS group, the correlation between walking intolerance and bone turnover markers was also analyzed. Results. In the LSS group, urinary N-terminal telopeptide of type I collagen (u-NTx) and alkaline phosphatase were significantly elevated when compared with those of the control group ($P < 0.05$). However, BMD was significantly low in the control group in all of the measured sites ($P < 0.05$). In the LSS group, neither bone markers nor BMD were correlated with the extent of walking difficulty. Conclusion. Our study highlights the fact that limited physical activity results in high bone turnover rate in patients with LSS.
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Z9 25
U1 0
U2 3
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 0362-2436
EI 1528-1159
J9 SPINE
JI SPINE
PD OCT 15
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IS 22
BP 2435
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DI 10.1097/BRS.0b013e3181829fca
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WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
GA 361FK

UT WOS:000260112700011
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PT J
AU Steel, N
Bachmann, M
Maisey, S
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Melzer, D
AF Steel, Nicholas
Bachmann, Max
Maisey, Susan
Shekelle, Paul
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Melzer, David
TI Self reported receipt of care consistent with 32 quality indicators: national population survey of adults aged 50 or more in England
SO BMJ-BRITISH MEDICAL JOURNAL
LA English
DT Article
ID coronary-heart-disease; health-care; of-care; medical-care; management; uk; pay
AB Objective To assess the receipt of effective healthcare interventions in England by adults aged 50 or more with serious health conditions. Design National structured survey questionnaire with face to face interviews covering medical panel endorsed quality of care indicators for both publicly and privately provided care. Setting Private households across England. Participants 8688 participants in the English longitudinal study of ageing, of whorn 4417 reported diagnoses of one or more of 13 conditions. Main outcome measures Percentage of indicated interventions received by eligible participants for 32 clinical indicators and seven questions on patient centred care, and aggregate scores. Results Participants were eligible for 19082 items of indicated care. Receipt of indicated care varied substantially by condition. The percentage of indicated care received by eligible participants was highest for ischaemic heart disease (83%, 95% confidence interval 80% to 86%), followed by hearing problems (79%, 77% to 81%), pain management (78%, 73% to 83%), diabetes (74%, 72% to 76%), smoking cessation (74%, 71% to 76%), hypertension (72%, 69% to 76%), stroke (65%, 54% to 76%), depression (64%, 57% to 70%), patient centred care (58%, 57% to 60%), poor vision (58%, 54% to 63%), osteoporosis (53%, 49% to 57%), urinary incontinence (51%, 47% to 54%), fails management (44%, 37% to 51%), osteoarthritis (29%, 26% to 32%), and overall

(62%, 62% to 63%). Substantially more indicated care was received for general medical (74%, 73% to 76%) than for geriatric conditions (57%, 55% to 58%), and for conditions included in the general practice pay for performance contract (75%, 73% to 76%) than excluded from it (58%, 56% to 59%). Conclusions Shortfalls in receipt of basic recommended care by adults aged 50 or more with common health conditions in England were most noticeable in areas associated with disability and frailty, but few areas were exempt. Efforts to improve care have substantial scope to achieve better health outcomes and particularly need to include chronic conditions that affect quality of life of older people.
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PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR,
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PT J
AU Lu, V
Lu, C
AF Lu, Vicky
Lu, Christine
TI Managing comorbidity in patients with rheumatoid arthritis
SO INTERNATIONAL JOURNAL OF RHEUMATIC DISEASES
LA English
DT Article
DE clinical aspects (rheumatoid arthritis); comorbidity; rheumatoid arthritis
ID extraarticular disease manifestations; nonsteroidal antiinflammatory drugs; cardiovascular events; risk; predictors; mortality; osteoarthritis; osteoporosis; depression; celecoxib
AB Rheumatoid arthritis (RA) is a chronic inflammatory disease that decreases physical function and imposes substantial medical costs. Comorbid conditions are common in patients with RA and they adversely affect quality of life and RA-related outcomes such as work disability and mortality. Rheumatologists have the important responsibility to consider comorbidities and their risks when treating patients and to adapt therapies to the specific situation of individual patients. This paper discusses the common comorbidities in patients with RA and management approaches.
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Z9 7
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PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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JI Int. J. Rheum. Dis.
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PT J
AU Oka, H
Muraki, S
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Yamamoto, S.

Nakamura, K.
Yoshimura, N.
Kawaguchi, H.
TI Fully automatic quantification of knee osteoarthritis severity on plain radiographs
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Knee; Diagnosis; Computer-aided diagnosis; Imaging; Plain radiograph
ID tibial cartilage volume; osteo-arthritis; bone-marrow; joint; progression; pain; impact; hip; association; symptoms
AB Objective: Although knee osteoarthritis (CA) is a major public health issue causing chronic disability, there is no objective or accurate method for measurement of the structural severity in general clinical practice. Here we have established a fully automatic program KOACAD (knee OA computer-aided diagnosis) to quantify the major OA parameters on plain knee radiographs, validated the reproducibility and reliability, and investigated the association of the parameters with knee pain. Methods: KOACAD was programmed to measure joint space narrowing at medial and lateral sides, osteophyte formation, and joint angulation. Anteroposterior radiographs of 1979 knees of a large-scale cohort population were analyzed by KOACAD and conventional categorical grading systems. Results: KOACAD automatically measured all parameters in less than 1 s without intra- or interobserver variability. All parameters, especially medial joint space narrowing, were significantly correlated with the conventional gradings. In the parameters, osteophyte formation was associated with none of the joint space parameters, suggesting different etiologic mechanisms between them. Multivariate logistic regression analysis after adjustment for age and confounding factors revealed that medial joint space narrowing and varus angulation of knee joints were risk factors for the presence of pain (594/1979 knees), while neither lateral joint space nor osteophyte area was. Conclusion: KOACAD was shown to be useful for objective, accurate, simple and easy evaluation of the radiographic knee OA severity in daily clinical practice. This system may also serve as a surrogate measure for the development of disease-modifying drugs for OA, just as bone mineral density does in osteoporosis. (C) 2008 Osteoarthritis Research Society International, Published by Elsevier Ltd. All rights reserved.
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FU Japanese Ministry of Education, Culture, Sports, Science and Technology [A18689031]; Ministry of Health, Labor and Welfare, and Research Aid from the Japanese Orthopaedic Association [H17-Men-eki-009]
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NR 43
TC 91
Z9 101
U1 0
U2 5
PU W B SAUNDERS CO LTD
PI LONDON
PA 32 JAMESTOWN RD, LONDON NW1 7BY, ENGLAND
SN 1063-4584
EI
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD NOV 15
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VL 16
IS 11
BP 1300
EP 1306
DI 10.1016/j.joca.2008.03.011
PG 7
WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology

GA 374NF
UT WOS:000261049800004
PM 18424107
DA 2026-02-10
ER

PT J
AU Oomah, K
AF Oomah, Kevin
TI Palliative therapy of osteochondrosis dessicans in a Duroc boar
SO CANADIAN VETERINARY JOURNAL-REVUE VETERINAIRE CANADIENNE
LA English
DT Article
ID joint disease osteoarthrosis; dyschondroplasia osteochondrosis; pigs; osteoporosis; swine
AB A 2-year-old, 210-kg, Duroc boar manifested with a grade II-III left front lameness. The boar was treated systemically with isolfupredone acetate and a 5-week course of ketoprofen. The lameness resolved and the ketoprofen was discontinued; however, the lameness returned and the boar was euthanized humanely. Postmortem examination was consistent with osteochondrosis dessicans.
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NR 13
TC 3
Z9 4
U1 0
U2 6

PU CANADIAN VET MED ASSOC
PI OTTAWA
PA 339 BOOTH ST ATTN: KIMBERLY ALLEN-MCGILL, OTTAWA, ONTARIO K1R 7K1, CANADA
SN 0008-5286
EI
J9 CAN VET J
JI Can. Vet. J.-Rev. Vet. Can.
PD JAN 15
PY 2008
VL 49
IS 1
BP 82
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DI
PG 2
WC Veterinary Sciences
SC Veterinary Sciences
GA 255YF
UT WOS:000252693800012
PM 18320984
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ER

PT J
AU Masood, SH
   Iqbal, MP
AF Masood, Syed Hassaan
   Iqbal, M. Perwaiz
TI PREVALENCE OF VITAMIN D DEFICIENCY IN SOUTH ASIA
SO PAKISTAN JOURNAL OF MEDICAL SCIENCES
LA English
DT Review
DE Vitamin D deficiency; South Asia
ID bone-mineral density; breast-fed infants; secondary hyperparathyroidism; d insufficiency; northern india; pregnant-women; pakistani; norway; exposure; children
AB Vitamin D, also described as 'the Sun Vitamin' is a steroid with hormone-like activity. It regulates the functions of over 200 genes and is essential for growth and development of the body. Vitamin D deficiency is quite prevalent throughout the world, but it appears to be much worse in the countries of sunny South Asia, especially among children, women and elderly. Poor diet, cultural practices of the region and poverty are some of the important reasons for vitamin D deficiency. Hypovitaminosis D (vitamin D deficiency) is considered responsible for rickets, birth

defects, osteoporosis, osteoarthritis, osteomalacia, chronic pain and muscle pain. Recent research has associated vitamin D deficiency as a contributing factor in diseases, such as heart disease, hypertension, neurological disorders, autoimmune disease, depression and cancer. This paper reviews the problem of vitamin D deficiency with special reference to South Asia and recommends that education regarding adequate exposure to sunlight, proper diet and fortification of selected foodstuff with vitamin D may be helpful in reducing vitamin D deficiency in this part of the world.

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NR 48
TC 33
Z9 38
U1 0
U2 15
PU PROFESSIONAL MEDICAL PUBLICATIONS
PI SADDAR
PA PANORAMA CENTRE, RM 522, 5TH FLOOR, BLDG 2, RAJA GHAZANFAR ALI RD, PO BOX 8766, SADDAR, KARACHI 00000, PAKISTAN
SN 1682-024X
EI
J9 PAK J MED SCI

JI Pak. J. Med. Sci.
PD OCT-DEC 15
PY 2008
VL 24
IS 6
BP 891
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DI
PG 7
WC Medicine, General & Internal
SC General & Internal Medicine
GA 533KV
UT WOS:000272823500027
DA 2026-02-10
ER

PT J
AU Goldring, SR
AF Goldring, Steven R.
TI The role of bone in osteoarthritis pathogenesis
SO RHEUMATIC DISEASE CLINICS OF NORTH AMERICA
LA English
DT Article
ID generalized nodal osteoarthritis; marrow edema pattern; articular-cartilage; osteophyte formation; knee osteoarthritis; subchondral bone; transient osteoporosis; radiographic features; calcified cartilage; trabecular bone
AB This article focuses on the specific skeletal features of osteoarthritis and the putative mechanisms involved in their pathogenesis. In addition, the relationship of these changes to the alterations in articular cartilage and the other tissues comprising the diarthrodial joint are reviewed.
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NR 64
TC 48
Z9 59
U1 1

U2 15
PU W B SAUNDERS CO-ELSEVIER INC
PI PHILADELPHIA
PA 1600 JOHN F KENNEDY BOULEVARD, STE 1800, PHILADELPHIA, PA 19103-2899 USA
SN 0889-857X
EI 1558-3163
J9 RHEUM DIS CLIN N AM
JI Rheum. Dis. Clin. North Am.
PD AUG 15
PY 2008
VL 34
IS 3
BP 561
EP +
DI 10.1016/j.rdc.2008.07.001
PG 12
WC Rheumatology
SC Rheumatology
GA 344ZB
UT WOS:000258964700004
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ER

PT J
AU Hernández, JL
Garcés, CA
Sumillera, M
Fernández-Aldasoro, EV
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Ortiz-Gómez, JA
Arozamena, J
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AF Hernandez, Jose L.
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Arozamena, Jana
Alonso, Maria A.
Riancho, Jose A.

TI Aromatase expression in osteoarthritic and osteoporotic bone
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID articular chondrocytes; estrogen; cartilage; therapy; replacement; estradiol; tissue
AB Objective. Estrogen deprivation is a central mechanism in the development of osteoporosis with aging. Results from recent studies also suggest the involvement of estrogens in the pathophysiology of osteoarthritis (OA). Aromatization of androgenic precursors in peripheral tissue is the main source of estrogens in postmenopausal women and in men. However, the importance of aromatase expression in bone is a subject of controversy. This study was undertaken to determine aromatase expression in bone samples from patients with hip fracture and patients with OA. Methods. We studied 104 patients with hip fracture (n = 60) or primary hip OA (n = 44). Aromatase expression was determined in trabecular bone samples from the femoral neck and in osteoblast cultures grown by the primary explant technique (n = 6.2), using real-time reverse transcriptase-polymerase chain reaction. Results. Aromatase RNA was detected in bone samples at levels similar to those found in adipose tissue. Transcript levels were significantly lower in bone tissue samples obtained from patients with OA than in those obtained from patients with fracture (P = 0.00001). Likewise, primary cultures of osteoblast cells from OA patients revealed lower aromatase expression than those of cells from fracture patients (P = 0.012). Results were independent of age or sex differences. Conclusion. Our findings indicate that. the aromatase gene is expressed in bone tissue in high amounts, similar to those found in adipose tissue, but transcript levels are lower in tissue samples and osteoblast cultures from patients with OA than in those from patients with hip fracture. Since estrogens may help to prevent local cartilage degradation, it can be speculated that such a reduced expression of aromatase could facilitate the development of OA.
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PU WILEY-LISS
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PA DIV JOHN WILEY & SONS INC, 111 RIVER ST, HOBOKEN, NJ 07030 USA
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WC Rheumatology
SC Rheumatology
GA 313EW
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PT J
AU Zoeger, N
Streli, C
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TI Determination of the elemental distribution in human joint bones by SR micro XRF
SO X-RAY SPECTROMETRY
LA English
DT Article
ID x-ray-fluorescence; lead; mobilization; zinc; mineralization; osteoporosis; validation; particles; toxicity; emission
AB In humans the toxic trace element lead (Pb) mainly accumulates in the skeletal tissue where it resides for a long period. Although Pb is known to play a role in bone and cartilage diseases, the distribution Of Pb in these tissues is mostly unknown. Therefore synchrotron-radiation-induced micro x-ray fluorescence analysis (SR mu-XRF) in various geometries was used to determine the distributions of Pb, Ca, Zn and Sr at the cartilage-bone interface in human femoral heads and patellae. SR mu-XRF results were matched with backscattered electron (BE) images providing information on structural features of the tissue. Conventional SR mu-XRF at HASYLAB beamline L showed that Pb mostly accumulates in a zone of some micrometers around the transition between non-calcified and calcified cartilage. However, the relatively large sample thickness did not allow more precise conclusions. Exploiting the 3D capabilities of confocal SR mu-XRF and SR microfluorescence tomography at ANKA Fluo-Topo beamline and HASYLAB beamline L, the spatial resolution could be improved and a highly specific accumulation of Pb at the tidemark, the calcification front between non-calcified and calcified cartilage, was detected. It was found that Pb and Zn accumulation coincide at the tidemark. Since the tidemark plays an important role in

osteoarthritis, the results may strengthen other authors' conclusions that Pb is associated with this joint disease. Although offering less spatial resolution when compared to micro-tomography, confocal SR mu-XRF is best suited for such studies. It facilitates the comparison of element maps with other imaging techniques like BE imaging. Copyright (C) 2007 John Wiley & Sons, Ltd.
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Z9 68
U1 0
U2 34
PU WILEY
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JI X-Ray Spectrom.
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WC Spectroscopy
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TI Prediction of labour and delivery by ascertaining the fetal head position with transabdominal ultrasound in pregnancies with prelabour rupture of membranes after 37 weeks
SO ULTRASCHALL IN DER MEDIZIN
LA English
DT Article
DE obstetrics; ultrasound; prelabour rupture of membranes (PROM); occiput posterior; outcome of labour
ID transvaginal digital examination; occiput posterior position; intrapartum sonography
AB Purpose: To evaluate the proportion of fetal head rotation from occiput posterior (OP) to occiput anterior (OA) during labour after term prelahour rupture of membranes (PROM), and to study if OP before labour are associated with a higher risk of operative deliveries and a longer duration of labour. Materials and Methods: A transabdominal ultrasound examination was performed in 152 women with PROM after 37 weeks with a single live fetus in cephalic position. The course of labour was compared in women with the fetal head in occiput posterior position or other positions before the start of labour. Results: Before the start of labour, 40 (26%) fetuses were in occiput posterior position (OP), but 34 (85%) of them rotated to occiput anterior (OA) during labour. Ten (6.6%) fetuses were delivered in OR and six of them were in OP before the start of labour. There were no statistically significant associations between the head position before the start of labour and the duration from PROM to delivery, induction of labour, use of epidural analgesia, augmentation with oxytocin, operative deliveries, perineal tears, Apgar scores, pH or base excess in the umbilical artery. Conclusions: Transabdominal ultrasound examination can determine the fetal head position before the start of labour, but the position of the head did not predict the course of labour, probably because the fetal head may rotate during labour even after PROM.
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TC 28
Z9 28
U1 0
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WC Acoustics; Radiology, Nuclear Medicine & Medical Imaging

SC Acoustics; Radiology, Nuclear Medicine & Medical Imaging
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ER

PT J
AU Venkatesh, R
AF Venkatesh, Ramakrishnan
TI Principles of surgical management of musculoskeletal conditions
SO BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY
LA English
DT Article
DE paediatric orthopaedics; chondral lesions; osteoarthritis; rheumatoid arthritis; red flag signs; vertebroplasty
ID total hip-arthroplasty; autologous chondrocyte implantation; arthroscopic partial meniscectomy; follow-up; rheumatoid-arthritis; percutaneous vertebroplasty; trapeziometacarpal joint; congenital dislocation; orthopedic-surgery; cruciate ligament
AB Practical procedures for treatment of fractures and dislocations have been used since the time of Hippocrates in fourth century BC. Orthopaeclic surgery became a recognized part of surgical treatment since the mid-nineteenth century, but saw major developments with the invention of x-rays and antibiotics in the early part of the twentieth century. Though orthopaeclic surgery had started with an interest in the correction of deformities in children, the major musculoskeletal problems facing orthopaedic surgery today relate to osteoarthritis, trauma (including sports injuries), and osteoporosis. The practice of orthopaeclic surgery has evolved with technology: advances in engineering and material science and increasing expectations towards faster rehabilitation have moved orthopaeclics into the era of joint replacements, arthroscopy, and less invasive surgical procedures. This chapter aims to provide an evidence-based condensed overview of the surgical management for a broad spectrum of musculoskeletal disorders encountered by primary-care clinicians and rheurnatologists.
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TC 5
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PT J
AU Beattie, KA

Duryea, J
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AF Beattie, Karen A.
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TI Minimum joint space width and tibial cartilage morphology in the knees of healthy individuals: A cross-sectional study
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
ID articular-cartilage; radiographic assessment; gender-differences; sex-differences; weight-bearing; united-states; 3 tesla; osteoarthritis; volume; adults
AB Background: The clinical use of minimum joint space width (mJSW) and cartilage volume and thickness has been limited to the longitudinal measurement of disease progression (i.e. change over time) rather than the diagnosis of OA in which values are compared to a standard. This is primarily due to lack of establishment of normative values of joint space width and cartilage morphometry as has been done with bone density values in diagnosing osteoporosis. Thus, the purpose of this pilot study is to estimate reference values of medial joint space width and cartilage morphometry in healthy individuals of all ages using standard radiography and peripheral magnetic resonance imaging. Design: For this cross-sectional study, healthy volunteers underwent a fixed-flexion knee X-ray and a peripheral MR (pMR) scan of the same knee using a IT machine (ONI OrthOne (TM), Wilmington, MA). Radiographs were digitized and analyzed for medial mJSW using an automated algorithm. Only knees scoring <= 1 on the Kellgren-Lawrence scale (no radiographic evidence of knee OA) were included in the analyses. All 3D SPGRE fat-sat sagittal pMR scans were analyzed for medial tibial cartilage morphometry using a proprietary software program (Chondrometrics GmbH). Results: Of 119 healthy participants, 73 were female and 47 were male; mean (SD) age 38.2 (13.2) years, mean BMI 25.0 (4.4) kg/m(2). Minimum JSW values were calculated for each sex and decade of life. Analyses revealed mJSW did not significantly decrease with increasing decade ($p > 0.05$) in either sex. Females had a mean (SD) medial mJSW of 4.8 (0.7) mm compared to males with corresponding larger value of 5.7 (0.8) mm. Cartilage morphometry results showed similar trends

with mean (SD) tibial cartilage volume and thickness in females of 1.50 (0.19) mu L/mm(2) and 1.45 (0.19) mm, respectively, and 1.77 (0.24) mu L/mm(2) and 1.71 (0.24) mm, respectively, in males. Conclusion: These data suggest that medial mJSW values do not decrease with aging in healthy individuals but remain fairly constant throughout the lifespan with "healthy" values of 4.8 mm for females and 5.7 mm for males. Similar trends were seen for cartilage morphology. Results suggest there may be no need to differentiate a t-score and a z-score in OA diagnosis because cartilage thickness and JSW remain constant throughout life in the absence of OA.
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NR 58
TC 46
Z9 50
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PU BIOMED CENTRAL LTD
PI LONDON
PA 236 GRAYS INN RD, FLOOR 6, LONDON WC1X 8HL, ENGLAND
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TI Predicting regional variations in trabecular bone mechanical properties within the human proximal tibia using MR imaging
SO BONE
LA English
DT Article
DE Trabecular bone; Proximal tibia; Bone volume fraction; MR; Mechanical properties
ID quantitative computed-tomography; high-resolution mri; in-vivo; mineral density; static alignment; femur; architecture; strength; quantification; osteoporosis
AB Trabecular bone density changes throughout the proximal tibia are indicative of several musculoskeletal disorders of the knee joint. Many of these disorders involve not only changes in the amount of bone, but also in the surrounding soft tissue. Osteoarthritis. for instance, involves bone density changes below the subchondral bone and throughout the proximal tibia, along with degradation evident in the articular cartilage. Osteoporosis, characterized by low bone density may also involve changes in bone size, structure or microarchitecture, each of which may Contribute to fracture risk. Recent studies have shown that magnetic resonance (MR) imaging, most frequently applied for soft tissue imaging, also allows non-invasive 3-dimensional characterization of bone microstructure. The purpose of the current study is to use whole joint MR images to acquire regional apparent bone volume fraction (appBVF) throughout the proximal tibia and correlate with mechanical properties measured on the corresponding ex vivo specimens. To compare our method to a high-resolution imaging modality, micro-CT analysis was performed in a subset of specimens. Using linear mixed-effects models, significant correlations ($p<0.05$) were determined between MR appBVF and Young's modulus ($r(2)=0.58$, MPSE=3633 MPa2), yield stress ($r(2)=0.73$, MPSE=1.53 MPa2) and ultimate stress ($r(2)=0.72$, MPSE=2.29 MPa2). Comparable significant correlations ($p<0.05$) were also determined between micro-CT BVF and Young's modulus ($r(2)=0.47$, MPSE=5179 MPa2), yield stress ($r(2)=0.80$, MPSE=1.23 Mpa(2)) and ultimate stress ($r(2)=0.83$, MPSE=1.76 MPa2). The current study demonstrates that MR imaging may be used as an in vivo imaging tool to determine differences in bone strength between subjects and regional variations within a single tibia. (C) 2008 Elsevier Inc. All rights reserved.
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JI Bone
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TI A Genome Wide Linkage Scan of Metacarpal Size and Geometry in the Framingham Study
SO AMERICAN JOURNAL OF HUMAN BIOLOGY
LA English
DT Article
ID quantitative trait loci; cortical bone loss; proximal hip geometry; 2nd metacarpal; body-size; gene; osteoporosis; maps; osteoarthritis; growth
AB Bone geometry is a significant component of bone strength, and has a clinical utility in predicting fractures and quantifying bone loss. Bone geometry is known to have a substantial genetic component. We performed linkage analysis to identify chromosomal regions governing metacarpal bone geometry. A genome-wide scan (with a set of 615 markers with spacing of similar to 5.7 cM) was performed on 1,702 individuals from 330 extended families of the Framingham Study. Midshaft width was measured and several indices calculated, namely Metacarpal Cortical Thickness (MCT), Cortical Index (MCI), and Section Modulus (MZ), using digitized X-rays of 1,380 participants (men, n = 666, mean age 55.2 yr, women, n = 714, 55.5 yr). Metacarpals 2, 3, and 4 were averaged. Heritability was significant for all indices, ranging from 0.51 to 0.72. Linkage analysis of indices adjusted for age, age 2, and estrogen status in women, identified chromosomal regions 6p21, 9p21, 11q21-q22, and Xq26-Xq27, with LOD scores >2.0. Additional adjustment for smoking, height, and BMI, generally reduced the LOD scores. Finally, bivariate linkage analysis confirmed that a QTL on chr. 6 (51 cM) was shared by midshaft width and MZ (LOD = 2.40, adjusted for all covariates). Neither MCT nor MCI shared linkage loci with width or MZ. In conclusion, we have identified chromosomal regions potentially linked to bone geometry. Genes in these regions may regulate bone geometry via effects on body size. Identification and subsequent characterization of loci for bone geometry can further elucidate the

genetic contributions to bone's resistance to stress. Am. J. Hum. Biol. 20:663-670, 2008. (C) 2008 Wiley-Liss, Inc.
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PT J
AU Sun, SS
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AF Sun, Shih-Sheng
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TI Difference in femoral head and neck material properties between osteoarthritis and osteoporosis
SO CLINICAL BIOMECHANICS

LA English
DT Article
DE Femoral head; Femoral neck; Osteoarthritis; Osteoporosis; Principal compressive region; Bone mineral density
ID bone mass; mechanical-property; articular-cartilage; cancellous bone; osteo-arthritis; hip-joint; coxarthrosis; coexistence; density; femur
AB Background Osteoarthritis and osteoporosis are the two most common musculoskeletal diseases found in the aged population. It is of interest to measure and study the material properties of the femoral head and neck of these two groups, and hopefully to offer explanation of the observed phenomenon that most patients suffer from one of the two disorders, not both. Methods. Seven osteoarthritic and seven osteoporotic femoral heads were used for this study. The principal compressive region of the femoral heads were cut to determine the Young's modulus and yielding stress by a material testing machine. Comparisons between these two groups were conducted by using material properties and the properties normalized by individual patient physical parameters, including body weight, body height and femoral head diameter, respectively. The finite element model of femoral neck cuboid in OA and OP were obtained based on the micro-CT-scan cross-section. The intrinsic material properties were calculated from the solid FE models. Findings. The results showed significant differences in density, modulus and strength between the osteoarthritic and osteoporotic femoral heads as measured, with the former having 2-3 times the values of the latter. Femoral head diameter has stronger influence in mechanical properties than patient's body weight and body height. Regarding to bone volume (BV), bone surface (BS), bone volume fraction (BV/TV), trabecular thickness (Tb.Th), trabecular number (Tb.N), and true trabecular elastic modulus, the intrinsic material properties of femoral neck with OA were higher than OP. Interpretation. It is still unknown why patients do not suffer from both osteoporosis and osteoarthritis at the same time. Many studies aimed to investigate the mechanical property of two groups. However, individual difference of the femoral head and neck is too difficult to obtain a reasonable comparison between these two groups. This study investigated the two groups more quantitatively and further estimated the factors which influence mechanical properties from a biomechanical point of view. (C) 2007 Published by Elsevier Ltd.
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SC Engineering; Orthopedics; Sport Sciences
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PT J
AU Rousseau, MA
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AF Rousseau, Marc-Antoine
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Hardy, Philippe
TI Long term outcomes after arthroscopic management of tibial plateau fractures
SO EUROPEAN JOURNAL OF TRAUMA AND EMERGENCY SURGERY
LA English
DT Article
ID assisted operative management; internal-fixation; open reduction; osteosynthesis; system
AB Objectives: Tibial plateau fractures are efficiently treated using arthroscopy when limited to one condyle. Operative technique and early results are now well documented. However, long term results have not been widely reported. The goal of this study was to evaluate clinical and radiological outcomes of arthroscopically treated tibial plateau fractures in the long term. Methods: Fourteen out of thirty consecutive cases have been reviewed after more than 4 years post-op (4 to 8 years). The SF8 quality of life score and both IKS and Rasmussen knee function scores have been quoted. Radiological analysis looked at Resnick and Niwoyama

osteoarthritis score. Results: Functional knee scores at follow-up were 28.0 (Rasmussen) and 187.4 (IKS) in average. The average SF8 score was 4.64. The SF8 score did not correlated with Rasmussen and IKS scores, but with age. Radiological signs of osteoarthritis were noted in 50.0% of cases, with no relationships with the clinical status. Conclusions: Comparisons with historical long-term studies regarding open reduction and internal fixation show similar outcomes. No specific secondary degenerative problem would alleviate the advantages of the arthroscopic management of tibial plateau fractures in the early post-operative period.
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PT J
AU Malemba, JJ
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AF Malemba, J. J.
Mbuyi-Muamba, J. M.
TI Clinical and epidemiological features of rheumatic diseases in patients attending the university hospital in Kinshasa
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE autoimmune diseases; Congo; Gout; osteoarthritis; osteoporosis; rheumatoid arthritis
ID arthritis; prevalence; hip; osteoarthrosis; nigeria; gout
AB The aim of the present retrospective and hospital-based study was to describe epidemiological and clinical features of rheumatic diseases in patients attending the University Hospital of Kinshasa (UHK). Rheumatic complaint was a reason for consultation in 12.1% of outpatients attending the Department of Internal Medicine of the UHK. Osteoarthritis was the most common rheumatic disease (59.2%), followed by soft tissue rheumatism (16.1%), gout (9.3%), and spondylarthropathies (7.5%). The cumulative frequency of autoimmune diseases (rheumatoid arthritis, systemic lupus erythematosus, systemic sclerosis, dermatomyositis, and mixed connective tissues disease) and the frequency of osteoporosis were 5.2 and 2.7%, respectively. Lumbar spine was the part of the skeleton mostly affected by osteoarthritis. Pathological fractures in osteoporosis, subcutaneous nodules, rheumatoid factor, and erosive bone lesions in rheumatoid arthritis were rarely found. Compared to the previous studies performed in the same hospital, our results disclose a threefold increase of rheumatic outpatients. The paucity of erosive arthritis and extra-articular manifestations suggest the less severity of rheumatoid arthritis in our patients. Likewise, the absence of femoral and wrist osteoporotic fractures and the scarcity of advanced vertebral crush fractures suggest the mildness of osteoporosis.
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TI Towards an ICF Core Set for chronic musculoskeletal conditions:: commonalities across ICF Core Sets for osteoarthritis, rheumatoid arthritis, osteoporosis, low back pain and chronic widespread pain
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE chronic widespread pain; ICF; ICF Core Sets; low back pain; musculoskeletal diseases; osteoarthritis; osteoporosis; rheumatoid arthritis
AB The objective of the study was to identify commonalities among the International Classification of Functioning, Disability and Health (ICF) Core Sets of osteoarthritis (OA), osteoporosis (OP), low back pain (LBP), rheumatoid arthritis (RA) and chronic widespread pain (CWP). The aim is to identify relevant categories for the development of a tentative ICF Core Set for musculoskeletal and pain conditions. The ICF categories common to the five musculoskeletal and pain conditions in the Brief and Comprehensive ICF Core Sets were identified in three steps. In a first step, the commonalities across the Brief and Comprehensive ICF Core Sets for these conditions were examined. In a second and third step, we analysed the increase in commonalities when iteratively excluding one or two of the five conditions. In the first step, 29 common categories out of the total number of 120 categories were identified across the Comprehensive ICF Core Sets of all musculoskeletal and pain conditions, primarily in the component activities and participation. In the second and third step, we found that the exclusion of CWP across the Comprehensive ICF Core Sets increased the commonalities of the remaining four musculoskeletal conditions in a maximum of ten additional categories. The Brief ICF Core Sets of all musculoskeletal and pain conditions contain four common categories out of a total number of 62 categories. The iterative exclusion of a singular condition did not significantly increase the commonalities in the remaining. Based on our analysis, it seems possible to develop a tentative Comprehensive ICF Core Set across a number of musculoskeletal conditions including LBP, OA, OP and RA. However, the profile of functioning in people with CWP differs considerably and should not be further considered for a common ICF Core Set.
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NR 18
TC 45
Z9 46
U1 0
U2 9
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0770-3198
EI 1434-9949
J9 CLIN RHEUMATOL
JI Clin. Rheumatol.
PD NOV 15
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VL 27
IS 11
BP 1355
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WC Rheumatology
SC Rheumatology
GA 356ZN
UT WOS:000259816200002
PM 18521651
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ER

PT J
AU Müller, D
Bauer, JS
Zeile, M
Rummeny, EJ
Link, TM
AF Mueller, Dirk
Bauer, Jan S.
Zeile, Martin
Rummeny, Ernst J.
Link, Thomas M.
TI Significance of sagittal reformations in routine thoracic and abdominal multislice CT studies for detecting osteoporotic fractures and other spine abnormalities
SO EUROPEAN RADIOLOGY
LA English
DT Article
DE routine MDCT; spine; osteoporosis; vertebral fractures; sagittal reformations
ID radiographic vertebral fracture; multidetector ct; postmenopausal women; chest radiography; older women; back-pain; prevalence; mortality; risk; recognition
AB The purpose was to assess osteoporotic vertebral fractures and other spinal lesions in sagittal reformations obtained from routine multidetector computed tomography (MDCT) studies of the thorax and abdomen, to compare sagittal reformations with axial images in detecting these lesions and to investigate how frequently they were missed in the official radiology report. Routine abdominal or thoracoabdominal MDCT using a standard protocol was performed in 112 postmenopausal women. Axial images and sagittal reformations were analyzed separately by two radiologists in consensus and were compared in order to evaluate how often spinal lesions could be detected. In addition the official radiology reports were assessed to determine how many of those abnormalities were identified. Spine abnormalities were visualized in 101/112 postmenopausal women. In 27 patients osteoporotic vertebral deformities were found; 6 of these were shown in the axial images, but none of these were diagnosed in the official radiology report. Additional abnormalities included degenerative disc disease, osteoarthritis of the facet joints, scoliosis, hemangiomas and bone metastases. In only 9/101 patients spine abnormalities were mentioned in the radiology report. Sagittal reformations of standard MDCT images provide important additional

information on spinal abnormalities; in particular, osteoporotic vertebral deformities are substantially better detected.
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NR 30
TC 55
Z9 60
U1 0
U2 1
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0938-7994
EI 1432-1084
J9 EUR RADIOL
JI Eur. Radiol.
PD AUG 15
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WC Radiology, Nuclear Medicine & Medical Imaging
SC Radiology, Nuclear Medicine & Medical Imaging
GA 323IV
UT WOS:000257440700020
PM 18418607
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ER

PT J
AU Labuda, A
Papaioannou, A
Pritchard, J
Kennedy, C
DeBeer, J
Adachi, JD
AF Labuda, Anna

Papaioannou, Alexandra
Pritchard, Janet
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TI Prevalence of Osteoporosis in Osteoarthritic Patients Undergoing Total Hip or Total Knee Arthroplasty
SO ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION
LA English
DT Article
DE Osteoarthritis; Osteoporosis; Prevalence; Rehabilitation
ID density
AB Objective: To determine the prevalence of osteoporosis in osteoarthritic patients undergoing total hip or total knee arthroplasty. Design: Cross-sectional study. Setting: The Specialized Outpatient Rehabilitation Service's (SORS) Pre-surgical Arthroplasty Service located at the Chedoke Hospital, Hamilton Health Sciences, Hamilton, ON, Canada. Participants: SORS outpatients (N=364), from the period of March 2006 to March 2007. Interventions: Not applicable. Main Outcome Measures: Prevalence of osteoporosis was determined by review of a self-reported survey, and defined by (1) self-reported diagnosis of osteoporosis, (2) history of fragility fracture (defined by a bone fracture occuring as a result of a fall from standing height or less after the age of 50), or (3) current treatment for osteoporosis using bisphosphonates. Results: Of the study cohort, 26% were classified as having osteoporosis, according to our criteria. Of the patients with self-reported osteoporosis or a history of fragility fractures, only 37% and 17% reported current treatment with bisphosphonates, respectively. Conclusions: Osteoporosis is common in the osteoarthritic arthroplasty population, with a prevalence at least equal to that in the general population. Due to the self-reported nature of the study, the prevalence of osteoporosis in this population is likely significantly higher. Results from this study indicate need for further research, specifically in formal assessment for osteoporosis in patients undergoing a joint replacement.
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FU CIHR [88225-1] Funding Source: Medline

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NR 9
TC 38
Z9 47
U1 0
U2 8
PU W B SAUNDERS CO-ELSEVIER INC
PI PHILADELPHIA
PA 1600 JOHN F KENNEDY BOULEVARD, STE 1800, PHILADELPHIA, PA 19103-2899 USA
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J9 ARCH PHYS MED REHAB
JI Arch. Phys. Med. Rehabil.
PD DEC 15
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BP 2373
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WC Rehabilitation; Sport Sciences
SC Rehabilitation; Sport Sciences
GA 385GY
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PT J
AU Hikiji, H

Takato, T
Shimizu, T
Ishii, S
AF Hikiji, Hisako
Takato, Tsuyoshi
Shimizu, Takao
Ishii, Satoshi
TI The roles of prostanoids, leukotrienes, and platelet-activating factor in bone metabolism and disease
SO PROGRESS IN LIPID RESEARCH
LA English
DT Review
DE PGE(2); osteoblast; osteoclast; osteoporosis; PAF
ID tumor-necrosis-factor; nf-kappa-b; cytosolic phospholipase a(2); collagen-induced arthritis; prostaglandin-e receptor; osteoblast-like cells; nonsteroidal antiinflammatory drugs; osteoclast-like cells; protein-kinase-a; colony-stimulating factor
AB The production of a variety of lipid mediators is enhanced in bone-resorptive diseases such as osteoporosis, rheumatoid arthritis, osteoarthritis, and periodontitis. Prostaglandin E-2 (PGE(2)) is one of the most notable lipid mediators of bone remodeling, and has been linked clinically to many bone-resorptive diseases. In vitro studies with bone cell cultures have demonstrated that the bone-resorptive activity of PGE2, which is mediated by receptor activator of NF-kappa B ligand (RANKL), is key for the induction of osteoclast formation. Furthermore, interleukin (IL)-1- and IL-6-stimulated bone resorption involves PGE2 production. In addition to its bone-resorptive effects, PGE2 promotes bone formation in vitro by stimulating osteoblastic proliferation and differentiation. The multifaceted nature of PGE2 makes it difficult to discern its role during bone remodeling. Leukotrienes (LTs), and particularly LTB4, have also been implicated in bone remodeling and disease-specifically in rheumatoid arthritis. Moreover, recent studies from our laboratory have shown that platelet-activating factor (PAF) receptor-deficient mice develop only mild osteoporosis. Osteoclast survival in these mice is shortened and osteoclastic bone resorption is impaired. This review article focuses on these families of lipids and their function during bone metabolism and disease. (c) 2007 Elsevier Ltd. All rights reserved.
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FU Grants-in-Aid for Scientific Research [20390508] Funding Source: KAKEN
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TI Bone mineral density and singh index predict bone mechanical properties of human femur
SO CONNECTIVE TISSUE RESEARCH
LA English
DT Article
DE bone density; Singh index; mechanical load; bone architecture
ID cancellous bone; femoral-head; in-vitro; osteoporosis; strength; osteoarthritis

AB The aim of our study was to assess the predictive value of the Singh index (SI), which estimates bone architecture, and bone density (BMD) when dealing with the mechanical competence of bone and to analze possible differences in bone properties between gender in humans. The relationship between SI, BMD, and mechanical competence was analyzed in 106 bone cylinders from 37 human femoral heads obtained during hip-joint replacement surgery for low energy fracture or for osteoarthritis. Bones from osteoporotic patients are less dense and more brittle compared with bones from osteoarthritic patients, as expected. Among osteoporotic patients female bones were more brittle than those from males, although BMD was similar. In osteoarthritic patients there were no significant differences among sexes. Bone mechanical competence varies according to BMD and to SI categories. Thus, our study suggests that bone strength is predicted by both BMD and bone architecture.
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WC Cell Biology; Orthopedics
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PT J
AU El-Sherif, HE
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AF El-Sherif, H. E.
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TI Hand osteoarthritis and bone mineral density in postmenopausal women; clinical relevance to hand function, pain and disability

SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE hand osteoarthritis; osteoporosis; AUSCAN
ID x-ray absorptiometry; rheumatoid-arthritis; knee osteoarthritis; elderly-men; osteoporosis; hip; population; scale; risk; epidemiology
AB Objective: The aim of the present study was to assess phalangeal bone mineral density (BMD) in postmenopausal females with hand osteoarthritis (OA) and to correlate the measured levels with the radiographic OA grade, pain, function and disability of the hand. Methods: The study group constituted 40 postmenopausal women with hand CA (range; 45-83 years). Socio-demographic data were collected. They underwent a comprehensive clinical examination of joint status and health outcome measure including Australian Canadian (AUSCAN) CA hand index. Hand radiographs were quantified and graded according to Kellgren and Lawrence (K-L) scoring system. Bone mineral content (BMC) and BMD of the third finger were measured using the accuDEXA (Schick, New York, NY). Twenty females matched for age and years of menopause were studied as a control group. Results: Phalangeal BMC and BMD were significantly reduced in women with hand CA compared to controls and related to radiological erosive OA. The AUSCAN pain and function subscales were worse in proportion to the severity of hand OA. CA X-ray score was significantly associated with reduced right grip strength, pain, and function scales while, decreased BMD was related to Ritchie index and pain scale. Conclusion: Postmenopausal women with clinical and radiological hand erosive OA are at risk of development of hand osteoporosis (OP). Phalangeal bone densitometry is an objective reproducible investigation. Poor physical function due to increased pain associated with increasing severity of radiographic hand CA leads to worse BMD results. (c) 2007 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
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PT J
AU Hunter, DJ
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Totterman, Saara
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TI Biochemical markers of bone turnover and their association with bone marrow lesions
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Article
ID radiographic knee osteoarthritis; collagen metabolism; subchondral bone; mineral density; progression; cartilage; osteoporosis; degradation; osteocalcin; prediction
AB Introduction Our objective was to determine whether markers of bone resorption and formation could serve as markers for the presence of bone marrow lesions (BMLs). Methods We conducted an analysis of data from the Boston Osteoarthritis of the Knee Study (BOKS). Knee magnetic resonance images were scored for BMLs using a semiquantitative grading scheme. In addition, a subset of persons with BMLs underwent quantitative volume measurement of their BML, using a proprietary software method. Within the BOKS population, 80 people with BMLs and 80 without BMLs were selected for the purposes of this case-control study. Bone biomarkers assayed included type I collagen N-telopeptide (NTx) corrected for urinary creatinine, bone-specific alkaline phosphatase, and osteocalcin. The same methods were used and applied to a nested case-control sample from the Framingham study, in which BMD assessments allowed evaluation of this as a covariate. Logistic regression models were fit using BML as the outcome and biomarkers, age, sex, and body mass index as predictors. An receiver operating characteristic curve was generated for each model and the area under the curve assessed. Results A total of 151 subjects from BOKS with knee OA were assessed. The mean (standard deviation) age was 67 (9) years and 60% were male. Sixty-nine per cent had maximum BML score above 0, and 48% had maximum BML score above 1. The only model that reached statistical significance used maximum score of BML above 0 as the outcome. Ln-NTx (Ln is the natural log) exhibited a significant association with BMLs, with the odds of a BML being present increasing

by 1.4-fold (95% confidence interval = 1.0-fold to 2.0-fold) per 1 standard deviation increase in the LnNTx, and with a small partial R-2 of 3.05. We also evaluated 144 participants in the Framingham Osteoarthritis Study, whose mean age was 68 years and body mass index was 29 kg/m(2), and of whom 40% were male. Of these participants 55% had a maximum BML score above 0. The relationship between NTx and maximum score of BML above 0 revealed a significant association, with an odds ratio fo 1.7 (95% confidence interval = 1.1 to 2.7) after adjusting for age, sex, and body mass index. Conclusions Serum NTx was weakly associated with the presence of BMLs in both study samples. This relationship was not strong and we would not advocate the use of NTx as a marker of the presence of BMLs.
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PT J
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TI Quantitative assessment of bone marrow edema-like lesion and overlying cartilage in knees with osteoarthritis and anterior cruciate ligament tear using MR imaging and spectroscopic imaging at 3 tesla
SO JOURNAL OF MAGNETIC RESONANCE IMAGING
LA English
DT Article
DE bone marrow edema-like lesion; MR spectroscopic imaging; T-1p; knee; osteoarthritis; anterior cruciate ligament tear
ID acutely injured knee; articular-cartilage; lipid characterization; high prevalence; soccer players; fat-content; relaxation; bruises; pain; osteoporosis
AB Purpose: To quantitatively assess bone marrow edema-like lesion (BMEL) and the overlying cartilage in osteoarthritis (OA) or anterior cruciate ligament (ACL)-injured knees using magnetic resonance imaging (MRI) and spectroscopic imaging (MRSI). Materials and Methods: Eight healthy controls and 30 patients with OA and other injuries who showed BMEL were scanned at 3.0T. A regression model was constructed to automatically calculate the volume of BMEL. Normalized Tip z-scores were calculated within BMEL-overlying cartilage. Three-dimensional (3D) MRSI was acquired in the BMEL and surrounding bone marrow. Results: The mean Ti z-score was significantly higher in BMEL-overlying cartilage than that in surrounding cartilage in the lateral tibia of patients with ACL tears ($P < 0.001$). Significantly elevated' water and unsaturated lipids, and decreased saturated lipids were observed in BMEL. The volume of elevated water correlated with the volume of BMEL. Water content was significantly higher within BMEL than that outside BMEL. The unsaturation index outside BMEL was significantly higher in patients with ACL tears than that in OA. Conclusion: 3D MRSI and Tip mapping provide tools to quantitatively evaluate BMEL in OA and knee injury. This may allow us to better understand pathophysiology and evolution of injuries and degenerative conditions of the knee.
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J9 J MAGN RESON IMAGING
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PT J
AU Yilmaz, S

Kart-Koeseoglu, H
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AF Yilmaz, Sema
Kart-Koeseoglu, Hamide
Guler, Ozgen
Yucel, Eftal
TI Effect of prayer on osteoarthritis and osteoporosis
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE prayer; osteoarthritis; osteoporosis
ID bone-mineral density; knee osteoarthritis; postmenopausal women; hip osteoarthritis; weight; risk; men
AB Prayer is one kind of worship that is composed of repetitive action during praying in Islam. The prayer is performed five times a day, every Friday, bairams and death ceremonies. The aim of this study is to search the role of this repetitive action on knee, hip osteoarthritis and osteoporosis. Forty-six patients who had been performing the prayer at least for 10 years, and 40 patients who had not performed the prayer, were included in this prospective study. Each patient was evaluated with standard questionnaire form, joint examination was done and various laboratory parameters were studied. Anterior-posterior radiography of the pelvis and weight-bearing knees of each patient were examined. Each film was evaluated by two investigators separately and first scored by using Kellgren and Lawrence (K&L) scale, then the width of the joint space of hips and knees were measured directly using a steel ruler and recorded to the nearest half millimeter. Bone mineral density (BMD) of lumbar spine and femur was measured. Patients having Heberden's nodes, Bouchard's nodes, and carpometacarpal disease were frequent in worshiper group. Joint space width measurements and assessment according to K&L scale did not differ between worshipers and non-worshipers. BMD of lumbar spine was decreased in worshipers and also decreased with patients having Heberden's nodes, Bouchard's nodes, female gender and age. Prayer has no effect on knee and hip osteoarthritis, and may be related with hand osteoarthritis. It seems to have negative effect on lumbar BMD, but further investigations are needed.
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NR 42
TC 5
Z9 6
U1 0
U2 5
PU SPRINGER HEIDELBERG
PI HEIDELBERG
PA TIERGARTENSTRASSE 17, D-69121 HEIDELBERG, GERMANY
SN 0172-8172
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J9 RHEUMATOL INT
JI Rheumatol. Int.
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WC Rheumatology
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PT J
AU Kamm, L
Mcllwraith, W
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AF Kamm, Lacy
Mcllwraith, Wayne
Kawcak, Chris
TI A review of the efficacy of tiludronate in the horse
SO JOURNAL OF EQUINE VETERINARY SCIENCE
LA English
DT Review
ID pagets-disease; double-blind; foot pain; bisphosphonates; bone; multicenter; prevention; mechanisms
AB Tiludronate is a compound in the bisphosphonate class of drugs. The main pharmacologic action of bisphosphapoptosis and disrupt intercellular trafficking of proinflammatory mediators. Bisphosphonates are used to treat humans with diseases such as osteoporosis and Paget's disease. Recently tiludronate has been studied as a treatment for bone resorptive diseases in horses. Tildren, an injectable form of tiludronate made for the horse, has been licensed to treat navicular disease and distal tarsal osteoarthritis in Europe. Some clinical studies have been completed to assess the efficacy of tiludronate in the horse. Many of the studies are reviewed here, and their standards of research are evaluated individually. Tiludronate may be beneficial in managing lameness isolated to the navicular bone and distal tarsal osteoarthritis by decreasing bone resorption and inflammation.
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Z9 33
U1 1
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J9 J EQUINE VET SCI
JI J. Equine Vet. Sci.
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WC Veterinary Sciences
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PT J
AU Moretti, B
Speciale, D
Garofalo, R
Moretti, L
Patella, S
Patella, V
AF Moretti, Biagio
Speciale, Domenico
Garofalo, Raffacle
Moretti, Lorenzo
Patella, Silvio
Patella, Vittorio
TI Spontaneous bilateral fracture of patella
SO GERIATRICS & GERONTOLOGY INTERNATIONAL
LA English
DT Article
DE anterior knee pain; bilateral; insufficiency fracture; patella
ID rates; risk
AB Bilateral patellae fractures represent a rare entity, accounting for approximately 2.9% of all lesions interesting in this anatomical district. In most cases found in the published work, they are described as stress fractures or as complications of chronic diseases such as osteoporosis, renal failure and secondary hyperparathyroidism. Although many pathogenetic mechanisms have been supposed, none have been proved for certain. Insufficiency fractures of the patellae are rare events and no data has been published on their incidence. We present a case of bilateral fracture of the patellae due to an indirect trauma occurring in an 85-year-old patient affected by Parkinson's disease, osteoporosis and diffuse degenerative osteoarthritis. X-ray of the knees (anteroposterior and lateral) and magnetic resonance imaging evaluation confirmed the fractures. The patient was treated conservatively. She had a good result, returning to her previous autonomous ambulation. This case is unusual because there was no direct trauma to the knees because of bilaterality, but confirmed previous observations about insufficiency fractures of patellae in the presence of comorbidity. Insufficiency fractures of patellae can be an insidious condition in elderly people. Prepatellar pain, a common symptom in the relapse phase of degenerative arthritis of the knee, should not be underestimated, particularly in patients with diseases influencing metabolism of bone and with an elevated risk of fall. A periodical clinical and instrumental follow up should be done in these patient. Moreover, we underline the necessity of a multidisciplinary approach.
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NR 16
TC 6
Z9 7
U1 0
U2 2
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 1444-1586
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J9 GERIATR GERONTOL INT
JI Geriatr. Gerontol. Int.
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WC Geriatrics & Gerontology; Gerontology
SC Geriatrics & Gerontology

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PT J
AU Lui, PPY
Qin, L
Chan, KM
AF Lui, Pauline Po Yee
Qin, Ling
Chan, Kai Ming
TI Tai Chi Chuan exercises in enhancing bone mineral density in active seniors
SO CLINICS IN SPORTS MEDICINE
LA English
DT Article
ID quantitative computed-tomography; muscle strength; postmenopausal women; physical-activity; jogging exercise; balance; prevention; walking; falls; osteoarthritis
AB Osteoporosis is a silent, systemic, chronic disease characterized by low bone mass and structural deterioration of bone tissue. Its clinical and public health implications are substantial because of the mortality, morbidity, and medical care cost associated with osteoporotic fractures. Although estrogen-replacement therapy or anti-bone resorptive drugs can prevent postmenopausal bone loss, they also show side effects. Physical activity is an nonpharmacological approach for prevention of osteoporosis. Among different types of physical activities, Tai Chi Chuan (TCC) is a low- to moderate-intensity exercise particularly suitable for the elderly, and has been practiced by Chinese for centuries. This article reviews the benefits of TCC for the prevention of osteoporosis and falls by retarding bone loss, improving neuromuscular coordination, and promoting general health.
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TC 19
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U1 0
U2 26
PU W B SAUNDERS CO-ELSEVIER INC
PI PHILADELPHIA
PA 1600 JOHN F KENNEDY BOULEVARD, STE 1800, PHILADELPHIA, PA 19103-2899 USA
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IS 1
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WC Sport Sciences
SC Sport Sciences
GA 265YP
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PT J
AU Achari, Y
Lu, T
Hart, DA
AF Achari, Yamini
Lu, Ting
Hart, David A.
TI Polymorphisms in the promoter regions for human MMP-1 and MMP-13 lead to

differential responses to the alpha and beta isoforms of estrogen receptor and their ligand in vitro
SO BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR BASIS OF DISEASE
LA English
DT Article
DE polymorphism; MMP-13; ER-alpha; ER-beta; 1G; 2G; gene regulation
ID matrix metalloproteinase-1 promoter; single nucleotide polymorphism; anterior cruciate ligament; breast-cancer cells; articular-cartilage; gene-expression; ovariectomized rats; transcription; osteoarthritis; collagenase-1
AB Estrogen receptors (ER) are present in connective tissues and therefore it is possible that the loss of estrogen after menopause influences the integrity of these tissues, contributing to development of degenerative conditions such as osteoporosis and osteoarthritis in a subset of women. Aberrant expression of matrix metalloproteinases (e.g. MMP-1 and MMP-13) has been implicated in the progression of these diseases. The present study investigated potential molecular mechanisms involved in the regulation of expression of MMP-1 and MMP-13 promoter variants by ER-alpha and ER-beta (+/-estrogen) in a transient transfection system. The results demonstrate that the activity of human MMP-1 and MMP-13 polymorphic variants is elevated in the presence of ER-alpha and ER-beta and the single nucleotide polymorphisms present in the promoters of MMP-1 and MMP-13 variants leads to differential activities in response to the ER isoforms. Furthermore, the influence of 17-beta estradiol also varies depending upon whether the alpha or the beta isoform of ER is the modulator of these polymorphic variants. These findings support the conclusion that ER isoforms may be contributing to disease development and/or progression in genetically distinct subsets of women following menopause, and provide mechanistic insights into how such contributions are manifested. (C) 2008 Elsevier B.V. All rights reserved.
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SC Biochemistry & Molecular Biology; Biophysics; Cell Biology
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TI Muscle Mass Is More Strongly Related to Hip Bone Mineral Density Than Is Quadriceps Strength or Lower Activity Level in Adults Over Age 50 Year
SO JOURNAL OF CLINICAL DENSITOMETRY
LA English
DT Article
DE Allometric scaling; bone mineral density; muscle mass; physical activity level; quadriceps strength; rehabilitation
ID postmenopausal women; body-size; physical-activity; proximal femur; older-adults; young-women; exercise; weight; osteoporosis; population
AB This cross-sectional study examined whether reduced hip bone mineral density (BMD) is better explained by isokinetic knee extensor strength (KES), lower limb

lean body mass (L-LBM). or Physical Activity Scale for the Elderly (PASE). Through population-based recruitment, 1543 adults without knee osteoarthritis were recruited. For men and women respectively, means +/- SD were age 60.8 +/- 8.0 and 61.1 +/- 7.9 yr: body mass index 29.6 +/- 4.6 and 29.1 +/- 5.4 kg/m(2): hip BMD 1.025 +/- 0.138 and 0.895 +/- 0.128 g/cm(2): KES 124.9 +/- 41 and 72.7 +/- 22.9 N . m: L-LBM 10.3 +/- 1.5 and 7.0 +/- 1.2 kg: and PASE 206.4 +/- 99.7 and 163.8 +/- 77.0. The relationship between BMD and KES in men (r(2) = 0.21, p >= 0.002) and women (r = 0.23, p < 0.001) was significant before adjustment. However, this association was no longer significant after controlling for L-LBM. Even after controlling for age, race, and sex, the association between BMD and KES was better explained by L-LBM (partial R-2 = 0.14, p < 0.001) than by PASE (partial R-2 = 0.00). Allometric scaling of KES to body size attenuated the association of BMD with KES (Std Beta = 0.03). The significant association between BMD and L-LBM (Std Beta = 0.36) remained stronger than that between BMD and weight (Std Beta = 0.21). Therefore, muscle mass accounted for a greater proportion of the variance in hip BNID than KES or activity level and explained a significant proportion of the association between weight and BMD.

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TI Adaptations in trabecular bone microarchitecture in olympic athletes determined by 7T MRI
SO JOURNAL OF MAGNETIC RESONANCE IMAGING
LA English
DT Article
DE fuzzy distance transform; digital topology; trabecular bone; olympic fencers; fracture risk; osteoporosis; osteoarthritis
ID reveals structural implications; fuzzy distance transform; in-vivo; topological analysis; articular-cartilage; cortical bone; osteoporosis; architecture; calcaneus; radius
AB Purpose: To produce in vivo high-resolution images of the knee and to determine the feasibility of using 7T MR to detect changes in trabecular bone

microarchitecture in elite athletes (Olympic fencers) who undergo high impact activity. Materials and Methods: The dominant knees of four males from the U.S. Olympic Fencing Team and three matched healthy male controls were scanned in a 7T whole-body scanner using a quadrature knee coil with three-dimensional (3D) fast low angle shot (FLASH): 50 axial images at the distal femur (0.156 mm x 0.156 mm) and 80 axial images at the knee joint (0.195 mm x 0.195 mm). Bone volume fraction (BVF) and marrow volume fraction (MVF) images were computed and fuzzy distance transform (FDT) and digital topological analysis (DTA) were applied to determine: trabecular number (Tb.N), trabecular thickness (Tb.Th), and trabecular separation (Th.Sp); BVF (BV/TV); trabecular and marrow space surface-to-curve ratio (SC, marker of plate to rod ratio); and trabecular and marrow space erosion index (El, inverse marker for network connectivity). Quadriceps muscle volume (MV) was calculated as well. We calculated group means and performed two-tailed t-tests to determine statistical significance. Results: Compared to controls, fencers had: decreased Th.Sp ($P = 0.0082$ at femur, $P = 0.051$ at joint); increased Tb.N ($P < 0.05$ at both femur and joint) and BV/TV ($P < 0.001$ at both femur and joint): increased trabecular SC and decreased marrow space SC ($P < 0.01$ at both femur and joint); decreased trabecular El and increased marrow space El ($P < 0.01$ at both femur and joint); and increased MV ($P = 0.038$). There was no difference in Tb.Th at the distal femur ($P = 0.92$) or joint ($P = 0.71$) between groups. Conclusion: To our knowledge, this is the first study to perform 7T MRI of the knee in vivo. Elite athletes who undergo high impact activity have increased MV and improved trabecular bone structure compared to controls.
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TI Nonunion of the femoral neck: Possibilities and limitations of the various treatment modalities
SO INDIAN JOURNAL OF ORTHOPAEDICS
LA English
DT Review
DE Fracture neck femur; nonunion; osteotomy; prosthetic replacement
ID failed internal-fixation; total hip-replacement; intertrochanteric osteotomy; non-union; fractures; adults; femur; head
AB Nowadays in cases of nonunions of the femoral neck, the surgeon is tempted to perform prosthetic replacement of the hip, more so if there is also evidence of avascular necrosis of the head of femur. This provides rapid pain relief and allows early mobilization. However, long-term results of hip arthroplasties, especially in younger people and in the presence of osteopenia, are not always as expected; and a less radical approach is worth considering. The intertrochanteric valgization osteotomy, described by Pauwels, is an excellent alternative for healthy patients up to 65 years of age with a nonunion of the femoral neck. A union rate of 80-90 of the nonunion is described by most authors. Leg length inequallity, rotational and angular deformities can be corrected at the same time. During the period

1973-1995, we performed valgization osteotomy according to Pauwels in 66 patients of, 18-72 years old (mean 49.5 years). 24 (37) of our patients died 4 months to 24 years (mean: 9.5 years) after the operation. Union of the femoral neck was achieved in 58 (88) of the 66 patients; union of the osteotomy in 65 patients (99). A good or excellent result was achieved in 62 (23 uneventful and 13 with healed, necrosis/arthrosis without need for further treatment) of our patients. However, the method has its limits. We feel if there is too little bone stock inside the femoral head, a valgization osteotomy does not give good result. The radiographic signs of avascular necrosis in patients over 30 years of age is considered a contraindication for an osteotomy. However our results show that it is worthwhile trying to save the joint of young patients even in case of a segmental collapse. In the race between revascularization and collapse, often revascularization is the winner. We deliberately give nature its chance and dont rely on the result of bleeding from drill holes in the head, nuclear scans and other methods to estimate vascularity. A secondary total hip replacement if necessary because of avascular necrosis or osteoarthritis is considerably postponed; and better milieu for hip replacement can be achieved by the development of sclerotic bone in the subchondral areas of the acetabulum and femoral head. Between 65 and 80 years of age, a total hip replacement is probably the best option for fit patients. We treat fresh femoral neck fractures with a hemiarthroplasty in patients over the biological age of 80 years. Logically the same choice will be made for patients with a nonunion. During the period 1973-1995 we performed hemiarthroplasty (n = 34) in patient with low general condition. Their mean age was 79 years. The average survival in these patients was less than three years and that explains probably the low late complication rate: in this group. Total hip replacement was performed in 37 younger patients with a mean age of 69 years. They were not considered for a valgization osteotomy because of age being over 70 years, severe osteoporosis or a total collapse of the femoral head. In this group, we observed one aseptic cup revision and two extractions of the prosthesis because of a deep infection.
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NR 24
TC 21
Z9 31
U1 0
U2 6
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PA WOLTERS KLUWER INDIA PVT LTD , A-202, 2ND FLR, QUBE, C T S NO 1498A-2 VILLAGE MAROL, ANDHERI EAST, MUMBAI, 400059, INDIA
SN 0019-5413
EI 1998-3727
J9 INDIAN J ORTHOP
JI Indian J. Orthop.
PD JAN-MAR 15
PY 2008
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IS 1
BP 13
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DI 10.4103/0019-5413.38575
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WC Orthopedics
SC Orthopedics
GA 505VU
UT WOS:000270728100003
PM 19823649
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ER

PT J
AU Badlani, N
Inoue, A
Healey, R
Coutts, R
Amiel, D
AF Badlani, N.
Inoue, A.
Healey, R.
Coutts, R.
Amiel, D.
TI The protective effect of OP-1 on articular cartilage in the development of osteoarthritis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE OP-1; osteoarthritis; cartilage; chondrocytes
ID human osteogenic protein-1; bone morphogenetic protein-7; arthritic human hips; metabolic abnormality; gene-expression; rabbit knee; chondrocytes; repair; model; defects
AB Objective: The purpose of this study was to determine whether osteogenic protein 1 (OP-1) would protect articular cartilage from degeneration during the development of osteoarthritis (OA) in the rabbit anterior cruciate ligament transection (ACLT) model. Previous studies have shown that OP-1 is vital to cartilage matrix integrity and repair, stimulates synthesis of cartilage matrix components, proteoglycans, and collagen, and has a protective effect against catabolic mediators like matrix metalloproteinases and interleukin-1. Methods: The rabbit ACLT model was used in which the anterior cruciate ligament was transected leading to OA. OP-1 was delivered to the joint surgically for approximately 6 weeks by implantation of an Alzet osmotic pump into the medial thigh with a catheter threaded from the pump into the knee joint. Forty rabbits (20 control and 20 experimental) had the ACLT surgery and implantation of the pump performed simultaneously. They were sacrificed after 9 weeks for analysis. The OA was graded using the Outerbridge classification with India Ink staining. Histological staining

and histomorphometry with Hematoxylin & Eosin and Safranin 0 were performed to analyze OA progression and semi-quantitative polymerase chain reaction (PCR) was performed for anabolic and catabolic genes. Results: The experimental group had an average Outerbridge score of 1.8 vs 2.5 for the controls (P < 0.05). Histomorphometry showed 10.9% surface deterioration or an average depression of 0.05 mm vs 22.3% and 0.1 mm for the controls (P < 0.05). Semi-quantitative PCR showed a significantly greater expression of aggrecan and collagen type II in the OP-1 treated cartilage when compared to controls and less expression of aggrecanase, a catabolic mediator. Conclusions: OP-1 may have a potential benefit in protecting articular cartilage during the development of OA. (C) 2007 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 34
TC 47
Z9 52
U1 0
U2 3
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584
EI 1522-9653
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD MAY 15
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WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 300QP
UT WOS:000255840600010
PM 17977753
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PT J
AU Arai, K
Tagami, M
Hatazoe, T
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Fujiki, Makoto
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TI Analysis of Cartilage Oligomeric Matrix Protein (COMP) in Synovial Fluid, Serum and Urine from 51 Racehorses with Carpal Bone Fracture
SO JOURNAL OF VETERINARY MEDICAL SCIENCE
LA English
DT Article
DE COMP; equine; fracture; osteoarthritis; urine
ID county osteoarthritis project; knee osteoarthritis; thoroughbreds; joint; degradation; fragments; collagen; horses
AB We investigated the relationship between cartilage oligomeric matrix protein (COMP) levels in synovial fluid (SF), serum and urine and the development of osteochondral damage and osteophyte (OP) formation following intraarticular fractures of the carpus in racehorses in order to assess the clinical usefulness of COMP as a diagnostic biomarker of developmental osteoarthritis (OA). Two monoclonal antibodies (mAb clones 2A 11 and 3C8) raised against equine COMP were shown to be capable of detecting the molecule in serum and urine as well as SF. Fifty-one samples were obtained from 26 OP-positive (OP(+)) and 25 OP-negative (OP(-)) racehorses with carpal bone fracture, in whom OP was ascertained arthroscopically and radiographically. The COMP measurements obtained using the two mAbs were highly correlated with each other in SF, serum, or urine. Horses with OP(+) showed a significantly higher [urinary COMP (mu

g)]/[urinary creatinine (mg)] ratio (4.94 +/- 5.10 and 1.46 +/- 1.19, using mAbs 2A 11 and 3C8, respectively) than OP(-) horses (2.80 +/- 1.72 and 0.93 +/- 0.49, respectively). The relationship between serum and urine COMP levels and the period from injury to surgery were extrapolated using a polynomial expression. Measurement of COMP, especially in urine, has potential as a predictive marker of advanced OA following carpal bone fractures in racehorses.
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FU Japan Society for the Promotion of Science [16380212, 19380178]; Grants-in-Aid for Scientific Research [16380212, 19380178] Funding Source: KAKEN
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NR 20
TC 17

Z9 23
U1 0
U2 2
PU JAPAN SOC VET SCI
PI TOKYO
PA UNIV TOKYO, 1-1-1 YAYOI, BUNKYO-KU, TOKYO, 103, JAPAN
SN 0916-7250
EI 1347-7439
J9 J VET MED SCI
JI J. Vet. Med. Sci.
PD SEP 15
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VL 70
IS 9
BP 915
EP 921
DI 10.1292/jvms.70.915
PG 7
WC Veterinary Sciences
SC Veterinary Sciences
GA 361TW
UT WOS:000260151000007
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ER

PT J
AU Atalar, H
Yanik, B
Ozcakar, B
Atalar, E
Koktener, A
AF Atalar, Hakan
Yanik, Burcu
Ozcakar, Burcin
Atalar, Ebru
Koktener, Asli
TI Bone mineral density is not related to severity of osteoarthritis in the knee in postmenopausal women
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE bone density; knee; osteoarthritis; osteoporosis; postmenopause
ID hip; osteoporosis; association; hand; end

AB Although some studies have suggested that osteoporosis and osteoarthritis are inversely related in epidemiologic terms, a spectrum of relations between the two diseases has been described in this study. In 95 postmenopausal women (mean age 64.4 +/- 8.49 years, range 49-83 years), we investigated the relation between bone mineral density (BMD) in the femoral neck and lumbar vertebrae (L2-L4) and osteoarthritis in the knee. BMD was measured with dual X-ray absorptiometry. Osteoarthritis was evaluated with anterior-posterior weight-bearing radiographs with the knee in extension, and these were graded for severity on a 5-point scale according to the Kellgren-Lawrence criteria. We found no clear statistical relation between BMD in the femoral neck or lumbar vertebrae and osteoarthritis in the knee. Given that some studies have found BMD to be significantly higher in patients with osteoarthritis, the lack of such relation in our patients may be due to environmental and/or genetic factors.
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NR 27
TC 15
Z9 18
U1 0
U2 7
PU SPRINGER HEIDELBERG
PI HEIDELBERG
PA TIERGARTENSTRASSE 17, D-69121 HEIDELBERG, GERMANY
SN 0172-8172
EI 1437-160X
J9 RHEUMATOL INT
JI Rheumatol. Int.
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WC Rheumatology
SC Rheumatology
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PT J
AU Banerjee, S
Krug, R
Carballido-Gamio, J
Kelley, DAC
Xu, D
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Majumdar, S
AF Banerjee, Suchandrima
Krug, Roland
Carballido-Gamio, Julio
Kelley, Douglas A. C.
Xu, Duan
Vigneron, Daniel B.
Majumdar, Sharmila
TI Rapid in vivo musculoskeletal MR with parallel imaging at 7T
SO MAGNETIC RESONANCE IN MEDICINE
LA English
DT Article
DE 7 Tesla; GRAPPA; trabecular bone micro-architecture; cartilage
ID to-noise ratio; trabecular bone; 3 tesla; grappa
AB The purpose of this work was to implement autocalibrating GRAPPA-based parallel imaging (PI) for in vivo high-resolution (HR) MRI of cartilage and trabecular bone micro-architecture at 7T and to evaluate its performance based on comparison of MR-derived morphology metrics between accelerated and conventional images and comparison of geometry factor measures between 3T and 7T. Using an eight channel coil array for trabecular MRI at the ankle, a higher maximum feasible acceleration (R) = 6 and lower geometry factor values than that at 3T were observed. The advantages of two-dimensional acceleration were also demonstrated. In knee cartilage and bone acquisitions, feasibility of PI with a dual-channel quadrature coil was investigated. Robust quantification of bone and cartilage metrics could be derived from accelerated ankle and knee acquisitions. PI can enhance the clinical feasibility of in vivo bone and cartilage HR-MRI for osteoporosis and osteoarthritis at 7T.
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FU NIAMS NIH HHS [R01-AR 49701] Funding Source: Medline
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NR 24
TC 36
Z9 39
U1 1
U2 3
PU JOHN WILEY & SONS INC
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN, NJ 07030 USA
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J9 MAGN RESON MED
JI Magn. Reson. Med.

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WC Radiology, Nuclear Medicine & Medical Imaging
SC Radiology, Nuclear Medicine & Medical Imaging
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PT J
AU Blain, H
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Delmas, P. D.
TI Cortical and trabecular bone distribution in the femoral neck in osteoporosis and osteoarthritis
SO BONE
LA English
DT Article
DE Femoral neck; Osteoporosis; Arthritis; fracture; Bone architecture
ID cancellous bone; hip fracture; computed-tomography; structural basis; proximal femur; connectivity; age; histomorphometry; architecture; mechanisms
AB The increased hip fragility in osteoporosis has been attributed mainly to a thinning of the cortex. In contrast, hip arthritis (OA) is not associated with increased risk of hip fracture. The purpose Of this Study was to assess cortical and trabecular

bone structures and their possible regional variability in the femoral neck taken from patients who Sustained an osteoporotic hip fracture (OP) compared with patients with OA. When compared the distribution of bone in the ultradistal femoral neck in 21 postmenopausal women with OA (mean age: 66 +/- 7.8 years) and 20 postmenopausal women with an osteoporotic hip fracture (011) (mean age: 79.5 +/- 1.9 years), Controlateral hip osteoporosis or osteopenia was confirmed in OP by DEXA (T-score: -2.5 +/- 0.8 in OP: -0.9 +/- 1.3 in OA). Histomorphometric parameters of bone Structure, architecture and connectivity were measured on sections from the ultradistal part of the femoral neck, divided in 4 quadrants. When compared to OA, cortical thickness was significantly decreased in OP ($p < 0.0005$) but was the highest in the inferior part in both groups. Cortical porosity was higher in CIA (13.48 +/- 1.02 and 8.4 +/- 1.07% in OA and OP respectively). Compared to CA, the trabecular bone volume was decreased by 50% in OP ($p < 0.0001$) with a diminution of the trabecular number ($p < 0.01$) and thickness ($p < 0.0001$). In parallel, OP group Was characterized by a poor connectivity evaluated by the decreased number of nodes ($p < 0.0001$). higher trabecular bone pattern factor ($p < 0.0001$) and greater marrow star volume ($p < 0.0001$).The connectivity was the lowest in the inferior quadrant in OP but not in CA. Our data suggest that in addition to the cortical thinning, the loss of the trabecular bone mass and connectivity plays a role in the skeletal fragility associated with hip fracture. Furthermore, the spatial distribution of the trabeculae differs between OP and OA whereas cortical thinning is homogenous. (c) 2008 Elsevier Inc. All rights reserved.
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TI Calcitonin - A drug of the past or for the future? Physiologic inhibition of bone resorption while sustaining osteoclast numbers improves bone quality

SO BIODRUGS
LA English
DT Article
ID vertebral fracture risk; spray salmon-calcitonin; postmenopausal women; established osteoporosis; mineral density; alendronate treatment; oral delivery; antiresorptive therapy; antinociceptive activity; biochemical markers
AB Postmenopausal osteoporosis results from a continuous imbalance between bone resorption and bone formation, favoring bone resorption. An increasing, number of treatments for osteoporosis are in development and on the market. A range of differences and similarities are found between these treatment options, and these need to be carefully evaluated before the initiation of treatment. This article summarizes data from in vitro and animal studies, as well as clinical trials, on the effect of calcitonin on bone turnover. Calcitonin was found to exert its antiresorptive effects via directly reducing osteoclastic resorption, and thus leads to an increase in bone mineral density and bone strength. Furthermore, calcitonin appears to mainly target the most active osteoclasts, and in contrast to most other antiresorptive agents it does not reduce the number of osteoclasts. Finally, in humans, while attenuating resorption, calcitonin treatment does not interfere markedly with bone formation, in contrast to other currently available antiresorptive agents. Thus, we speculate that calcitonin treatment will lead to a continuously positive bone balance in contrast with other antiresorptive agents currently on the market and thereby, in a physiologic manner, result in improved bone quality. Calcitonin is currently only available in injectable and nasal formulations. An oral formulation may, however, improve patient acceptance and compliance. Currently, several different routes are being pursued to identify an optimal oral formulation, of which the technology based on 5-CNAC is the most advanced. There are promising clinical data available for this formulation from both osteoarthritis and osteoporosis clinical trials, although the antifracture efficacy is not yet known.
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TI Predictors of podiatry utilisation in Australia: the North West Adelaide Health Study
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LA English
DT Article
AB Background: Foot problems are highly prevalent in the community; however no large population-based studies have examined the characteristics of those who do and do not access podiatry services in Australia. The aim of this study was to explore patterns of podiatry utilisation in a population-based sample of people aged 18 years and over living in the northwest region of Adelaide, South Australia. Methods: The North West Adelaide Health Study is a representative longitudinal cohort study of 4,060 people randomly selected and recruited by telephone interview. The interview included questions regarding healthcare service utilisation in the past year. Data were also collected on education, income and major medical conditions. Results: Overall, 9.5% of the total sample and 17.7% of those who reported foot pain had attended a podiatrist in the past year. Participants who had

accessed podiatry treatment were more likely to be female, be aged over 45 years, be obese, and have major chronic medical conditions (osteoporosis, osteoarthritis, diabetes, cardiovascular disease and high blood pressure). Those who reported foot pain but had not accessed a podiatrist were more likely to be male and be aged 20 to 34 years. Conclusion: Only a small proportion of people who report foot pain have accessed podiatry services in the past year. There is a need to further promote podiatry services to the general community, particularly to men and younger people.
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NR 38
TC 14
Z9 15
U1 0
U2 4
PU BIOMED CENTRAL LTD
PI LONDON
PA 236 GRAYS INN RD, FLOOR 6, LONDON WC1X 8HL, ENGLAND
SN 1757-1146
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J9 J FOOT ANKLE RES
JI J. Foot Ankle Res.
PD JUN 15
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PG 7
WC Orthopedics
SC Orthopedics
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PT J
AU Blair-Levy, JM
Watts, CE
Fiorientino, NM
Dimitriadis, EK
Marini, JC
Lipsky, PE
AF Blair-Levy, J. M.
Watts, C. E.
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Lipsky, P. E.
TI A type I collagen defect leads to rapidly progressive osteoarthritis in a mouse model
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID bone-mineral density; radiographic knee osteoarthritis; subchondral bone; articular-cartilage; osteogenesis imperfecta; hip osteoarthritis; murine model; risk-factors; osteoporosis; damage
AB Objective. This study was undertaken to test the hypothesis that abnormalities of the subchondral bone can result in osteoarthritis (OA). Methods. We used a knockin model of human osteogenesis imperfecta, the Brittle IV (Brtl) mouse, in which defective type I collagen is expressed in bone. OA in individual mice was documented by micro-magnetic resonance imaging (micro-MRI) and micro-computed tomography (micro-CT). Alterations in the knee joints were confirmed by histopathologic and immunohistochemical analysis. In addition, atomic force microscopy (AFM) was used to assess the ultrastructure of the articular cartilage and subchondral bone matrix. Results. Brtl mice had decreased integrity of bone but initially normal articular cartilage. However, by the second month of life, Brtl mice developed alterations of the cartilage that were characteristic of OA, as documented by micro-CT, micro-MRI, and histologic evaluation. In addition, chondrocyte loss and breakdown of the collagen matrix in

the residual cartilage were demonstrated using AFM. Conclusion. The Brtl mouse model demonstrates that progressive destruction of articular cartilage characteristic of OA may be secondary to altered architecture of the underlying subchondral bone.
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WC Rheumatology
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PT J
AU Neuprez, A
   Hiligsmann, M
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AF Neuprez, Audrey
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TI Strontium ranelate: The first agent of a new therapeutic class in osteoporosis
SO ADVANCES IN THERAPY
LA English
DT Article
DE elderly subjects; hip fracture; mode of action; osteoblast; osteoclast; osteoporosis; strontium ranelate; treatment; vertebral fracture

ID bone-mineral density; vertebral fracture risk; double-blind; postmenopausal osteoporosis; nonvertebral fractures; knee osteoarthritis; glucosamine sulfate; hip fracture; women; progression
AB Strontium ranelate is a new agent developed for the management of post-menopausal osteoporosis. It has a unique mode of action, based on an uncoupling between bone formation (increased) and bone resorption (decreased). To review its effectiveness we searched the MEDLINE database from 1985 to 2008, as well as databases such as the Cochrane controlled register, for citations or relevant articles. After this extensive search of the literature, a critical appraisal of the data was obtained through a consensus meeting (AN, MH, SS, OB, and J-YR). We found that strontium ranelate reduces vertebral, nonvertebral, major nonvertebral, and hip fractures over 1, 3, 4, and 5 years. Its spectrum of activity covers women with osteopenia, osteoporosis, and severe osteoporosis. Elderly subjects also show a reduction in vertebral and nonvertebral fractures. Bone mineral density may be used as a monitoring tool for strontium ranelate, since early changes are predictive of long-term fracture reduction. Biochemical markers of bone turnover reflect the uncoupling between resorption and formation. The safety profile of strontium ranelate compares favorably with the other currently marketed antiosteoporosis medications. Preliminary results suggest that strontium ranelate is able to reduce the progression of spine osteoarthritis. In conclusion, strontium ranelate has the potential to be a candidate for first-line treatment of osteopenia and osteoporosis. However, further research is needed before suggesting its widespread use in osteoarthritis.
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NR 57
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Z9 35
U1 0
U2 14
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0741-238X
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J9 ADV THER
JI Adv. Ther.
PD DEC 15
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WC Medicine, Research & Experimental; Pharmacology & Pharmacy
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TI Synthesis and characterization of amorphous octakis-functionalized polyhedral oligomeric silsesquioxanes for polymer nanocomposites
SO POLYMER
LA English
DT Article
DE amorphous; nanoparticles; nanocomposites
ID hybrid nanocomposites; poss copolymers; oligosilsesquioxanes; octasilsesquioxanes; crystallization; nanoparticles; alcohol
AB We have synthesized the polyhedral oligomeric silsesquioxane (POSS) derivatives OS-POSS and OA-POSS through the hydrosilylation of styrene and 4-acetoxystyrene, respectively, with octakis(dimethylsiloxy)-silsesquioxane (Q(8)M(8)(H)). We then prepared OP-POSS through acetoxyl hydrazinolysis of OA-POSS with hydrazine monohydrate. The chemical structures of these POSS derivatives were characterized using FTIR and H-1 NMR spectroscopy and MALDI-TOF mass spectrometry. Unlike Q(8)M(8)(H), which is crystalline, these three hydrosilylated POSS derivatives are liquids at 25 degrees C. Through DSC and XRD analyses, we found that they exhibit polymer-like glass transitions and amorphous halos. These octakis-functionalized POSS derivatives can be regarded as amorphous glasses possessing low glass transition temperatures, the values of which depend on the intermolecular interactions of their outer organic groups. To investigate the dispersion of these POSS derivatives in polymer nanocomposites, we blended OS-POSS, OA-POSS, and OP-POSS with polystyrene, poly(4-acetoxystyrene), and poly(4-vinylpyridine), respectively, and investigated the effects of the resulting intermolecular aromatic hydrophobic, dipole-dipole, and hydrogen-bonding interactions, respectively. Dipole-dipole interactions provided the best dispersion of OA-POSS in poly(4-acetoxystyrene), in which the POSS-polymer intermolecular interactions were of similar strength to the POSS-POSS interactions. (C) 2008 Elsevier Ltd. All rights reserved.
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NR 35
TC 80
Z9 81
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PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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J9 POLYMER
JI Polymer
PD AUG 26
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WC Polymer Science
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AU Khoschnau, S
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Michaelsson, Karl
TI Type I Collagen α1 Sp1 Polymorphism and the Risk of Cruciate Ligament Ruptures or Shoulder Dislocations
SO AMERICAN JOURNAL OF SPORTS MEDICINE
LA English
DT Article
DE cruciate ligament rupture; shoulder dislocation; polymorphism; gene; collagen
ID bone-mineral density; single-nucleotide polymorphisms; binding-site polymorphism; d-receptor gene; osteogenesis imperfecta; osteoporotic fractures; postmenopausal women; association; col1a1; osteoarthritis
AB Background: Cruciate ligament ruptures and shoulder dislocations are often caused by trauma, but predisposing intrinsic factors might also influence the risk. These injuries are more common in those with a previously injured sibling, an observation that might indicate a genetic predisposition. It is well known that polymorphisms in the collagen I gene are associated not only with osteoporosis and osteoporotic fracture risk, but also with osteoarthritis. Hypothesis: Because collagen I is abundant in ligaments and tendons, the authors hypothesized that collagen I alpha 1 Sp1 polymorphism also was related to the occurrence of cruciate ligament ruptures and shoulder dislocations. Study Design: Case-control study; Level of evidence, 3. Methods: A total of 358 patients and 325 randomly selected population-based female controls were included in the study. Of the cases, 233 had a cruciate ligament rupture and 126 had had a shoulder dislocation. Age-adjusted odds ratios (ORs) with 95% confidence intervals (CIs) estimated by unconditional logistic regression were used as measures of association. Results: Compared with the homozygous SS category, the heterozygous participants displayed a similar risk (OR, 1.06; 95% CI, 0.76-1.49), whereas the ss genotype was underrepresented in the injured population compared with the controls (OR, 0.15; 95% CI, 0.03-0.68). This latter estimate was similar for both cruciate ligament ruptures and shoulder dislocations, and was furthermore not modified by general joint laxity. Conclusion: The authors found a substantially decreased risk of these injuries associated with collagen type I a1 Sp1 polymorphism. The study might encourage other investigators to consider further research in the area of genes and soft tissue injuries.
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TC 99
Z9 122
U1 0
U2 12
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WC Orthopedics; Sport Sciences
SC Orthopedics; Sport Sciences
GA 382PZ
UT WOS:000261619200019
PM 18669982
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PT J
AU Nishimura, A
Hasegawa, M
Kato, K
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AF Nishimura, Akinobu

Hasegawa, Masahiro
Kato, Ko
Fukuda, Aki
Sudo, Akihiro
Uchida, Atsumasa
TI Total knee arthroplasty in osteogenesis imperfecta: Case report
SO KNEE
LA English
DT Article
DE Osteogenesis imperfecta; Total knee arthroplasty; Joint osteoarthritis; Dwarfism; Osteoporosis
ID replacement; bone
AB Osteogenesis imperfecta (OI) is a rare congenital disorder of type I Collagen production that results in brittle bones and affects body systems containing collagen. The increasing life span of patients with OI has recently revealed a high incidence of osteoarthritis of the knee. A 53 year-old man with OI presented with bilateral knee pain. He had severe deformities of the proximal part of the femur with subsegment post-traumatic osteoarthritis of both sides of the knees. However, the frequency of fracture gradually decreased and he had not experienced a fracture for 17 years. His bone mineral density was extremely low for his age. He underwent cemented total knee arthroplasty (TKA) on the left knee. One year later, the patient had relief of pain and lie Could walk Without assistance. To our knowledge, only three knee replacements in two patients with OI have been reported, so this case is extremely, rare. Although whether a patient with OI is a Suitable candidate for knee replacement, it was a useful treatment for osteoarthritis in this case. (C) 2008 Elsevier B.V. All rights reserved.
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NR 17
TC 5
Z9 9
U1 0
U2 3
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PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
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J9 KNEE
JI Knee
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SC Orthopedics; Sport Sciences; Surgery
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PT J
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AF Yilmaz, Figen
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Ercalik, Cem
Yucel, Serap Dalgic
Kuran, Banu
TI Quality of life assessments with SF 36 in different musculoskeletal diseases
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE musculoskeletal disorders; quality of life; SF-36
ID health-status; rheumatoid-arthritis; knee osteoarthritis; classification; osteoporosis; fibromyalgia; population; criteria
AB The aim of this study is to evaluate comparatively the life quality of patients with knee osteoarthritis (KO), shoulder impingement syndrome(SIS), fibromialgia(FM), or osteoporosis(OP) using SF 36 and establish the impact of these diseases on quality of life (QoL). A total of 193 patients with one of the above-mentioned different diagnoses completed SF 36 scale. The diseases were compared to each other with SF 36 subgroups scores. There were significant differences among patients with KO and SIS,SIS and FM with respect to all SF 36 subgroups scores. According to these assessments, QoL of KO and FM patients was worst than that of SIS. The QoL scores of KO patients were worse than those of FM patients considering the physical function, while QoL scores of FM patients were lower than those of KO patients with respect to their general well-being. Scores of physical function and pain in KO patients were lower than those of OP patients. In domains of social functioning, emotional role, energy, pain, and general health condition QoL of FM patients was worse than that of OP patients. Quality of life of SIS patients was less affected than the patients of the other disease groups. In spite of their young age, FM patients appear to be the group with the worst quality of life scores.
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NR 31
TC 34
Z9 37
U1 0
U2 18
PU SPRINGER
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JI Clin. Rheumatol.
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WC Rheumatology
SC Rheumatology
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PT J
AU Bruyere, O
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TI Effects of strontium ranelate on spinal osteoarthritis progression

SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID lumbar disc degeneration; knee osteoarthritis; postmenopausal women; double-blind; cartilage degradation; glucosamine sulfate; placebo; osteoporosis; trial; risk
AB Objective: The aim of this study was to determine whether a 3-year treatment with strontium ranelate could delay the progression of spinal osteoarthritis (OA). Methods: This study was a post-hoc analysis of pooled data from the Spinal Osteoporosis Therapeutic Intervention (SOTI) and TReatment Of Peripheral OSteoporosis (TROPOS) trials performed on 1105 women with osteoporosis and concomitant radiological spinal OA at baseline, and for whom lumbar x-rays were available at baseline and over the 3-year treatment period. The presence and severity of osteophytes, disc space narrowing and sclerosis in the lumbar intervertebral spaces was graded according to a validated method, and an overall OA score was calculated for each intervertebral space. Back pain (measured on a five-point Likert scale only in SOTI) and health-related quality of life (SF-36 questionnaire) were assessed at baseline and after 3 years. Patients who suffered an incident or progressive vertebral fracture during the study were excluded from the analysis. Results: The proportion of patients with worsening overall spinal OA score was reduced by 42% in the strontium ranelate group, compared with placebo (RR, 0.58; 95% CI, 0.42 to 0.79; p= 0.0005). Significantly more patients in the strontium ranelate group experienced an improvement in back pain after 3 years, compared with placebo (p= 0.03), while no significant difference was observed in terms of health-related quality of life between these patient groups. Conclusions: The results of this post-hoc analysis suggest that strontium ranelate could reduce the progression of the radiographic features of spinal OA and back pain in women with osteoporosis and prevalent spinal OA.
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AU Roemer, FW
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AF Roemer, F. W.
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TI MRI-detected subchondral bone marrow signal alterations of the knee joint: terminology, imaging appearance, relevance and radiological differential diagnosis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Review
DE Bone marrow lesion; Bone marrow edema; Magnetic resonance imaging; Knee;

Osteoarthritis; Cartilage; Trauma
ID regional migratory osteoporosis; of-the-literature; spontaneous osteonecrosis; articular-cartilage; osteochondritis-dissecans; cruciate ligament; injured knee; follow-up; arthroscopic meniscectomy; rheumatoid-arthritis
AB Objective: To discuss terminology, radiological differential diagnoses and significance of magnetic resonance imaging (MRI)-detected subchondral bone marrow lesions (BMLs) of the knee joint. Methods: An overview of the published literature is presented. In addition, the radiological appearance and differential diagnosis of subchondral signal alterations of the knee joint are discussed based on expert consensus. A recommendation for terminology is provided and the relevance of these imaging findings for osteoarthritis (OA) research is emphasized. Results: A multitude of differential diagnoses of subchondral BMLs may present with a similar aspect and signal characteristics. For this reason it is crucial to clearly and specifically define the type of BML that is being assessed and to use terminology that is appropriate to the condition and the pathology. In light of the currently used terminology, supported by histology, it seems appropriate to apply the widely used term "bone marrow lesion" to the different entities of subchondral signal alterations and in addition to specifically and precisely define the analyzed type of BML. Water sensitive sequences such as fat suppressed T2-weighted, proton density-weighted, intermediate-weighted fast spin echo or short tau inversion recovery (STIR) sequences should be applied to assess non-cystic BMLs as only these sequences depict the lesions to their maximum extent. Assessment of subchondral non-cystic ill-defined BMLs on gradient echo-type sequences should be avoided as they will underestimate the size of the lesion. Differential diagnoses of CA related BMLs include traumatic bone contusions and fractures with or without disruption of the articular surface. Osteonecrosis and bone infarcts, inflammation, tumor, transient idiopathic bone marrow edema, red marrow and post-surgical alterations should also be considered. Conclusion: Different entities of subchondral BMLs that are of relevance in the context of OA research may be distinguished by specific imaging findings, patient characteristics, symptoms, and history and are discussed in this review. (C) 2009 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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SC Orthopedics; Rheumatology
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PT J
AU Rodrigues, A
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TI EVALUATION OF BONE MECHANICAL STRENGHT AND FRACTURE RISK ASSESSMENT [FRAX®] IN PATIENTS WITH HIP JOINT REPLACEMENT SURGERY
SO ACTA REUMATOLOGICA PORTUGUESA
LA English
DT Article
DE Mechanical Tests; Osteoporosis; Hip Fracture; Fragility Fracture; FRAX (R)
ID femoral-head; osteoporosis; quality; matrix; women
AB Background: Fracture risk assessment tools are useful to calculate the long term probability of osteoporotic fracture. However, how it reflects bone quality is unknown. The aim of this study was to correlate the WHO clinical fracture risk assessment tool, FRAX (R), with bone mechanical properties. Methods: Six patients submitted to hip replacement surgery, either due to osteoporotic fractures or to osteoarthritis, were evaluated. Bone samples were collected and the mechanical properties assessed by compression tests. Patients' data regarding the presence of clinical risk factors for fracture were registered. Laboratorial assessment of bone metabolic parameters and a dual X-ray absorptiometry (DXA) were done. Results: Analysis of the load-displacement curves showed that patients with fragility fractures (n=4) had low values of elastic modulus, yield load and energy absorbed until yield point. Osteoarthritis patients tend to have a better biomechanical performance. Femoral neck DXA scan was also performed in 3 patients. Fragility fracture patients had a lower bone mineral density than the patients with osteoarthritis. FRAX (R) algorithm was applied and a positive relation was found between FRAX (R) results and biomechanical parameters. Blood bone metabolic Conclusions: The worse mechanical properties observed in the fragility fracture patients were related to high probability of fracture given by FRAX (R). These observations, in a very small sample, need further confirmation. However, they suggest that the fracture risk assessment tool, FRAX (R), may reflect the current mechanical bone behavior of the patient.
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U2 5
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PT J
AU Villari, N
Fornaciari, G
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AF Villari, Natale
Fornaciari, Gino
Lippi, Donatella
Cerinic, Marco Matucci
Ginestroni, Andrea
Pellicano, Giannantonio
Mascalchi, Mario
TI Scenes from the Past The Medici Project: Radiographic Survey
SO RADIOGRAPHICS
LA English
DT Article
ID idiopathic skeletal hyperostosis; hyper-ostosis; risk-factors; dish; florence; disease; gout
AB The remains of 12 members of the grand ducal (junior) branch of the Florentine Medici family were exhumed in 2003 as part of the Medici Project, a multidisciplinary study whose aim was to investigate the lifestyles, health status, and possible causes of death of members of one of the richest, most powerful families of the Italian Renaissance. Digital radiography and orthopantomography were performed on the skeletal remains of individuals who lived between 1562 and 1666. The observed bone malformations, deformities, and changes (degenerative, metabolic, and dental) challenge traditional views, based on portraits and historical accounts, about the appearance and lifestyle of some family members. Moreover, the occurrence of a constellation of bone changes related to diabetes (osteoporosis, osteoarthritis, diffuse idiopathic skeletal hyperostosis, cranial hyperostosis, and crystalline arthropathy) suggests that this metabolic disease was common in the grand ducal branch of the Medici family.

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U2 3
PU RADIOLOGICAL SOC NORTH AMERICA
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JI Radiographics
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PT J
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Cornelissen, B.
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Van Rietbergen, B.
TI Predictive value of femoral head heterogeneity for fracture risk
SO BONE
LA English
DT Article
DE Human; Osteoporosis; Femoral head; Bone parameters; Micro-CT
ID cancellous bone; trabecular bone; mechanical-property; elastic property; proximal femur; hip-fractures; osteoporosis; osteoarthritis; architecture; morphology
AB Osteoporosis (OP) is characterized by low bone mass and weak bone structure, which results in increased fracture risk. It has been suggested that osteoporotic bone is strongly adapted to the main loading direction and less adapted to the other directions. In this Study, we hypothesized that osteoporotic femoral heads have 1) an increased anisotropy: 2) a more heterogenic distribution of bone volume fraction (BV/TV) throughout the femoral head; and, 3) a more heterogenic distribution of the trabecular thickness (Tb.Th.) throughout the femoral head, as compared to non-osteoporotic bone. To test these hypotheses, we used 7 osteoporotic femoral heads from patients who fractured their femoral neck and 7 non-fractured femoral heads from patients with osteoarthrosis (OA). Bone structural parameters from the entire trabecular region were analyzed using microCT. We found that the degree of anisotropy was higher in the fractured femoral heads, i.e. 1.72, compared to a value of 1.61 in the non-fractured femoral heads. The BV/TV and Tb.Th. and their variations throughout the femoral head, however, were all significantly lower in the fractured group. Hence, the first hypothesis was confirmed, whereas the other two were rejected. Interestingly, the variation of Tb.Th. throughout the femoral head provided a 100% discrimination between the OP and OA groups, i.e. for the same BV/TV, all fractured cases had a less heterogenic distribution. In conclusion, our results suggest that bone loss in OP takes place uniformly throughout the femoral head, leading to an overall decrease in bone mass and trabecular thickness. Furthermore, the variation of Tb.Th. in the femoral head could be an interesting parameter to improve the prediction of fracture risk in the proximal femur. (C) 2009 Elsevier Inc. All rights reserved.
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TC 35

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WC Endocrinology & Metabolism
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PT J
AU Fujita, T
Ohue, M
Fujii, Y
Miyauchi, A
Takagi, Y
AF Fujita, Takuo
Ohue, Mutsumi
Fujii, Yoshio
Miyauchi, Akimitsu
Takagi, Yasuyuki
TI Comparison of the analgesic effects of bisphosphonates: etidronate, alendronate and risedronate by electroalgometry utilizing the fall of skin impedance
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Pain; Skin impedance; Etidronate; Alendronate; Risedronate
ID corticosteroid-induced osteoporosis; intravenous pamidronate; joint pain; bone;

disease; back
AB Analgesic effects of etidronate, alendronate and risedronate were compared in patients with osteoporosis and/or osteoarthritis by measuring the fall of skin impedance along with conventional subjective pain-estimation by visual rating scale (VRS). One hundred ninety-nine postmenopausal women consulting the Osteoporosis and Osteoarthritis Clinic of Katsuragi Hospital complaining of back and/or knee pain were randomly divided into four groups; Group A (49 subjects) given 5 mg/day alendronate, Group E (50 subjects) 200 mg/day etidronate, Group R (50 subjects) 2.5 mg/day risedronate and Group P no bisphosphonate. None of the four groups showed significant deviation from others as to age and parameters of bone metabolism. Proportions of subjects with osteoporosis was 18-40%. Those with osteoarthritis of the spine and knee, higher than Grade II according to the Nathan and Lawrence-Kellgren scale, respectively, was 45 and 61%, respectively, without a significant difference among the four groups. Significant positive correlation was found between the fall of skin impedance and pain expressed in VRS. Attenuation of exercise-induced fall of skin impedance and also subjective pain expressed in VRS was greatest in Group E with a highly significant difference from Groups A ($P = 0.0002$ and $P < 0.0001$), R ($P < 0.0001$ and $P = 0.0014$) and P ($P < 0.0001$ and $P < 0.0001$). Neither A nor R showed significant difference from P as to the fall of skin impedance. Among the three bisphosphonates tested, etidronate appeared to be outstanding in analgesic effects.
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NR 17
TC 24
Z9 73
U1 0
U2 4
PU SPRINGER TOKYO
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SC Endocrinology & Metabolism; Research & Experimental Medicine
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PT J
AU John, A
Wysota, P
AF John, A.
Wysota, P.
TI Data base to aid of diagnosis of osteoporotical changes in human pelvic bone
SO JOURNAL OF VIBROENGINEERING
LA English
DT Article
DE osteoporosis; osteoarthritis
AB The aim of the work is the facilitation of identification the osteoporotical changes which can contribute to earlier detection of osteoporosis. In the paper the

most important information and the main foundations of system to aid of diagnosis of osteoporosis in human pelvic bone are presented. The starting point in modeling of osteoporotical changes is the data from QCT (Quantitative Computed Tomography). The numerical model of analyzed structure is created by conversion of CT images. The next step of work is performing of the strength calculations. The obtained results (distributions of the stresses, strains and displacements) enables to notice the changes in physiological structure of pelvic bone and detecting dangerous states. The essence of aid of diagnosis the osteoporosis is on the base subordinating CT images suitable the effort of the pelvis bone.
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TC 1
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U2 1
PU JVE INT LTD
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WC Engineering, Biomedical; Engineering, Mechanical
SC Engineering
GA 501GJ
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PT J
AU Heep, H
Hilken, G
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AF Heep, Hansjoerg
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Wedemeyer, Christian
TI Osteoarthitis of Leptin-Deficient ob/ob Mice in Response to Biomechanical Loading in Micro-CT
SO INTERNATIONAL JOURNAL OF BIOLOGICAL SCIENCES
LA English
DT Article
DE Bone mineral density; leptin; biomechanical loading; micro-CT; mice
ID cancellous bone; computed-tomography; microcomputed tomography; hypothalamic relay; trabecular bone; serum leptin; obese gene; rat model; mass; chondrocytes
AB Objective: Mechanotransduction is the mechanism that due to reacting chondrocytes on biomechanical loading of body mass. Higher biomechanical loading lead to increased degeneration of chondrocytes, whereas moderate loading is protecting. This suggests that body fat regulates bone metabolism first by means of hormonal factors and second that the effects of muscle and loading are signaling factors in mechanotransduction. Leptin, a peptide hormone produced predominantly by white fat cells, is one of these hormonal factors. The aim of this study was to investigate and measure the different effects of weight-bearing on trabecular bone formation in mice without the stimulation of leptin and with or without osteoarthritis. Materials and methods: 40 C57BL/ 6J ob/ob-mice in the age of 20 weeks have been devided into two groups with an ad-libitum-diet and with reduced diet. The hip- and knee-joints have been examinated in micro-CT-scan and histomorphologically. Results: Animals with an ad-libitum-diet were found to increase body weight significantly at the age of six weeks in comparison with lean mice. At the age of twenty weeks the obese mice were almost twice as heavy as the lean mice. Significant statistical differences are shown between the two groups for body weight and bone mineral density. Examination of trabecular bone in micro-CT revealed that the only statistically significant difference between the two groups

was the trabecular number for the proximal femur. High weight-bearing insignificantly improved all trabecular bone parameters in the obese mice. Correlation was found between trabecular number and bone mineral density on the one hand and body weight on the other hand. The correlation between body weight and osteoarthritis shows a significant increase in grade of osteoarthritis as body weight increases in hip- joint and knee-joint but not in osteoarthritis-positive (OP) versus osteoarthritis-negative (ON) mices. The correlation of the hip- joint between micro-CT data and body weight shows an increase in these data as body weight increases in OP mices. The correlation of the hip- joint between micro-CT data and osteoarthritis shows a decrease in these data as osteoarthritis increases in OP mices. The correlation of the knee-joint between micro-CT data and body weight shows differencies between ON and OP mices. The correlation of the knee-joint between micro-CT data and osteoarthritis shows an increase in these data as osteoarthritis increases in OP mices. Conclusion: biomechanical loading led to decreased bone mineral density by a decrease in the number of trabeculae. Trabecular thickness was not increased by biomechanical loading in growing mice. Decreased body weight in leptin-deficient mice protects against bone loss. This finding is consistent with the principle of light-weight construction of bone. Differences in osteoarthritis-positive and osteoarthritis-negative mices show the eventual importance of diet in leptin-deficience. It is not possible to conclude that these results also apply to human beings.
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SC Biochemistry & Molecular Biology; Life Sciences & Biomedicine - Other Topics
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PT J
AU Goldring, SR
AF Goldring, Steven R.
TI Role of Bone in Osteoarthritis Pathogenesis
SO MEDICAL CLINICS OF NORTH AMERICA
LA English
DT Article

DE Osteoarthritis; Bone; Cartilage; Biomechanics; Remodeling
ID generalized nodal osteoarthritis; marrow edema pattern; articular-cartilage; osteophyte formation; knee osteoarthritis; subchondral bone; transient osteoporosis; radiographic features; calcified cartilage; trabecular bone
AB Much of the attention in developing diagnostic tools and therapeutic interventions for the management of osteoarthritis (OA) has focused on the preservation or repair of articular cartilage. It is clear that all of the joint components, including the ligaments, tendons, capsule, synovial lining, and periarticular bone, undergo structural and functional alterations during the course of OA progression. This article focuses on the specific skeletal features of OA and the putative mechanisms involved in their pathogenesis.
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NR 64
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Z9 139
U1 1
U2 23
PU W B SAUNDERS CO-ELSEVIER INC
PI PHILADELPHIA
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WC Medicine, General & Internal
SC General & Internal Medicine
GA 392YW
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PT J
AU Martín-Hernández, E
Lee, PJ
Micciche, A
Grunewald, S
Lachmann, RH
AF Martin-Hernandez, E.
Lee, P. J.
Micciche, A.
Grunewald, S.
Lachmann, R. H.
TI Long-term needs of adult patients with organic acidaemias: outcome and prognostic factors
SO JOURNAL OF INHERITED METABOLIC DISEASE
LA English
DT Article
ID propionic acidemia; successful pregnancy; methylmalonic acidemia; inborn-errors; management; acidurias; metabolism; genotype; disease; mut(-)
AB Background: With improvements in the treatment of children with organic acidaemias (OA), the number surviving to adulthood is increasing. To plan appropriate services for their care it is important to know what their needs are. Objective: To describe the clinical and social problems affecting adult patients with OA. Patients and methods: We reviewed the medical records of 15 adult patients diagnosed with OA. Social attainment (housing, schooling and occupation) was analysed. Nutritional status was evaluated by body mass index (BMI) and laboratory studies. Neurological and visceral complications were noted. Cognitive outcome was evaluated by psychometric testing and/or educational attainment. Results: Seven had methylmalonic acidaemia (MMA), 4 isovaleric acidaemia (IVA) and 4 propionic acidaemia (PA). Ten were female, and median age was 23.5 years (range 18-48). All but three had late-onset disease. Two patients became pregnant during follow up. Four patients had obtained university degrees and were working. Three-quarters of the patients required some kind of social support. All had a good nutritional status. Height was normal in IVA and 3 PA patients. Osteoporosis was present in 2 out of 8 patients assessed. A variety of neurocognitive or visceral complications were seen in two-thirds of the patients. Metabolic decompensations were unusual. Conclusions: The approach to adult patients with OA has to be

multidisciplinary, with the clinician and dietician as the core of the team, but with the collaboration of clinical nurses specialists, social workers and other specialist services and the support of a biochemical and molecular laboratory.
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NR 38
TC 27
Z9 29
U1 0
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PU WILEY
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PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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J9 J INHERIT METAB DIS
JI J. Inherit. Metab. Dis.

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WC Endocrinology & Metabolism; Genetics & Heredity; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Genetics & Heredity; Research & Experimental Medicine
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PT J
AU Dayan, CM
   Panicker, V
AF Dayan, Colin M.
   Panicker, Vijay
TI Novel insights into thyroid hormones from the study of common genetic variation
SO NATURE REVIEWS ENDOCRINOLOGY
LA English
DT Review
ID type-2 deiodinase; insulin-resistance; serum tsh; thr92ala polymorphism; levothyroxine therapy; targeted disruption; cerebral-cortex; free-thyroxine; dio2; association
AB Effects of thyroid hormones in individual tissues are determined by many factors beyond their serum levels, including local deiodination and expression and activity of thyroid hormone transporters. These effects are difficult to examine by traditional techniques, but a novel approach that exploits the existence of common genetic variants has yielded new and surprising insights. Convincing evidence indicates a role of type 1 iodothyronine deiodinase (D1) in determining the serum T(4):T(3) ratio and a role of phosphodiesterase 8B in determining TSH levels. in addition, studies of type 2 iodothyronine deiodinase (D2) variants have shown that thyroid hormones contribute to osteoarthritis and these variants influence intelligence quotient alterations associated with iodine deficiency. Preliminary evidence suggests associations between TSH-receptor variants and fasting glucose level, D1 variants and insulin-like growth factor I production, and D2 variants and hypertension, psychological well-being and response to T(3) or T(4) treatment.

intriguingly, most of these associations are independent of serum thyroid hormone levels, which highlights the importance of local regulation of thyroid hormones in tissues. Future research might reveal novel roles for thyroid hormones in obesity, cardiovascular disease, osteoporosis and depression and could have implications for interpretation of thyroid function tests and individualization of thyroid hormone replacement therapy.
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Z9 89
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U2 17
PU NATURE PUBLISHING GROUP
PI NEW YORK
PA 75 VARICK ST, 9TH FLR, NEW YORK, NY 10013-1917 USA
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EI
J9 NAT REV ENDOCRINOL
JI Nat. Rev. Endocrinol.
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WC Endocrinology & Metabolism
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PT J
AU Unay, K
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TI The relationship between bone marrow edema size and knee pain
SO KNEE SURGERY SPORTS TRAUMATOLOGY ARTHROSCOPY
LA English
DT Article
DE Bone marrow edema; Knee; Activity pain; Rest pain; Size of edema
ID mr-imaging findings; spontaneous osteonecrosis; transient osteoporosis; osteoarthritis; lesions
AB The purpose of our study was to determine the changes in the size of the edema observed on MRI scans and its relation to the activity pain of the patient and the rest pain in bone marrow edema (BME). A total of 51 patients were followed up at 3-month intervals for a period of 1 year. During the follow-ups, MRI scans of the patients' knees were obtained; the scores obtained on the Stanmore functional rating scale and visual analog scale were determined. The changes in these parameters and the correlation between them were examined. The following are the observations recorded during the bone marrow edema follow-ups: the size of the edema as observed on MRI scans decreased, and the activity pain and the rest pain decreased. While there is a correlation between the decrease in the edema size observed on MRI scans and decrease in the activity pain, there is no correlation between the decrease in the edema size observed on MRI scans and the decrease in rest pain. No changes were observed after a particular period of time with regard to decrease in the edema size observed on MRI scans, decrease in activity pain, and decrease in rest pain in follow-ups of BME patients.
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J9 KNEE SURG SPORT TR A
JI Knee Surg. Sports Traumatol. Arthrosc.
PD NOV 15
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WC Orthopedics; Sport Sciences; Surgery
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PT J
AU Yoshimura, N
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Nakamura, Kozo
Akune, Toru
TI Prevalence of knee osteoarthritis, lumbar spondylosis, and osteoporosis in Japanese men and women: the research on osteoarthritis/osteoporosis against disability study
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Epidemiology; Prevalence; Establishment of population-based cohort; Osteoarthritis; Osteoporosis
ID bone-mineral density; community; fracture; britain; spine
AB Musculoskeletal diseases, especially osteoarthritis (OA) and osteoporosis (OP), impair activities of daily life (ADL) and quality of life (QOL) in the elderly. Although preventive strategies for these diseases are urgently required in an aging society, epidemiological data on these diseases are scant. To clarify the prevalence of knee osteoarthritis (KOA), lumbar spondylosis (LS), and osteoporosis (OP) in Japan, and estimate the number of people with these diseases, we started a large-scale population-based cohort study entitled research on osteoarthritis/osteoporosis against disability (ROAD) in 2005. This study involved the collection of clinical information from three cohorts composed of participants located in urban,

mountainous, and coastal areas. KOA and LS were radiographically defined as a grade of a parts per thousand yen2 by the Kellgren-Lawrence scale; OP was defined by the criteria of the Japanese Society for Bone and Mineral Research. The 3,040 participants in total were divided into six groups based on their age: a parts per thousand currency sign39, 40-49, 50-59, 60-69, 70-79, and a parts per thousand yen80 years. The prevalence of KOA in the age groups a parts per thousand currency sign39, 40-49, 50-59, 60-69, 70-79, and a parts per thousand yen80 years 0, 9.1, 24.3, 35.2, 48.2, and 51.6%, respectively, in men, and the prevalence in women of the same age groups was 3.2, 11.4, 30.3, 57.1, 71.9, and 80.7%, respectively. With respect to the age groups, the prevalence of LS was 14.3, 45.5, 72.9, 74.6, 85.3, and 90.1% in men, and 9.7, 28.6, 41.7, 55.4, 75.1, and 78.2% in women, respectively. Data of the prevalence of OP at the lumbar spine and femoral neck were also obtained. The estimated number of patients with KOA, LS, and L2-L4 and femoral neck OP in Japan was approximately 25, 38, 6.4, and 11 million, respectively. In summary, we estimated the prevalence of OA and OP, and the number of people affected with these diseases in Japan. The ROAD study will elucidate epidemiological evidence concerning determinants of bone and joint disease.
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NR 27
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Z9 731
U1 0
U2 41
PU SPRINGER TOKYO
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PA 1-11-11 KUDAN-KITA, CHIYODA-KU, TOKYO, 102-0073, JAPAN
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WC Endocrinology & Metabolism; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Research & Experimental Medicine
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PT J
AU Maffulli, N
Longo, UG
Denaro, V
AF Maffulli, Nicola
Longo, Umile Giuseppe
Denaro, Vincenzo
TI Femoral Neck Stress Fractures
SO OPERATIVE TECHNIQUES IN SPORTS MEDICINE
LA English
DT Article
DE stress fractures; femoral neck; sports; minimally invasive
ID dynamic hip screw; military recruits; fatigue fractures; bone; management; injury; athlete; scintigraphy; fixation; adults
AB Stress fractures of the femoral neck account for roughly 5% of all stress fractures, affecting prevalently young, active, healthy, individuals Ge, recreational runners, endurance athletes, or military recruits), patients with metabolic bone disease, and older people with osteoporosis. In these stress fractures, the repetitive stress on the bone is greater than the ability of the bone to sustain the load and repair the microtrauma. Stress fractures of the femoral neck can be difficult to diagnose because of the diffuse and radiating pain and nonspecific findings on clinical examination. Early diagnosis has a pivotal role. MRI is useful to evaluate an early fatigue injury and to grade its recovery, with findings that can range from marrow edema to a frank fracture line. The most important risk in case of misdiagnosis is a progression to a displaced fracture: these require urgent surgery, and, if left untreated, may cause disastrous complications, including osteonecrosis of the femoral head, delayed-union, mal-union, non-union, varus deformity, and osteoarthritis. Oper Tech Sports Med 17:90-93 (C) 2009 Elsevier Inc. All rights reserved.
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U1 0
U2 7
PU W B SAUNDERS CO-ELSEVIER INC
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PT J
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AF Gao, Ying
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Hu, Jing
TI The effect of surface immobilized bisphosphonates on the fixation of hydroxyapatite-coated titanium implants in ovariectomized rats
SO BIOMATERIALS
LA English
DT Article
DE Bisphosphonate; Immobilize; Hydroxyapatite; Implant; Osteoporosis
ID total hip-arthroplasty; joint replacement; bone-resorption; in-vitro; osteoporosis; pamidronate; delivery; osteoarthritis; necrosis; cells
AB Immobilized bisphosphonates (BPs) have been introduced to improve implant fixation, however, no information could be found about the efficiency of this approach in osteoporotic bone. This study was designed to evaluate the bone response to surface immobilized BPs on implants inserted in tibiae of ovariectomized (OVX) rats. Three months after bilateral ovariectomy, 40 rats were randomly assigned into four groups for implantation of hydroxyapatite-coated titanium implants with or without immobilized BPs: (1) control group (without BP treatments); (2) pamidronate (PAM) group (1 mg/ml of PAM immersing); (3) ibandronate group (1 mg/ml of ibandronate immersing); and (4) zoledronic acid (ZOL) group (1 mg/ml of ZOL immersing). After implantation periods of 3 months, the peri-implant-bone density, trabecular microstructure, bone-implant interface and mechanical fixation of implants were evaluated by dual energy X-ray absorptiometry, micro-computed tomography, histology and push-out test. We

found that three BPs triggered pronounced bone-implant integration and early bone formation around implants in OVX rats, with a rank order of ZOL > ibandronate > PAM. These results provide new evidence that immobilized BPs have positive effects on implant fixation in osteoporotic bone, in addition to their well-documented potency to inhibit implant loosening in normal bone. (C) 2008 Elsevier Ltd. All rights reserved.
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TC 126
Z9 138
U1 1
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PU ELSEVIER SCI LTD
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PT J
AU Huang, KW
Tsai, LW
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AF Huang, Kai-Wei
Tsai, Li-Wei
Kuo, Shiao-Wei
TI Influence of octakis-functionalized polyhedral oligomeric silsesquioxanes on the physical properties of their polymer nanocomposites
SO POLYMER
LA English
DT Article
DE POSS; Nanoparticles; Miscibility
ID t-g increase; crystallization kinetics; miscibility enhancement; thermal-property; hybrid polymers; phase-behavior; blends; poss; methacrylate); resin
AB We synthesized the polyhedral oligomeric silsesquioxane (POSS) derivatives octakis[dimethyl(phenethyl)siloxy]silsesquioxane (OS-POSS), octakis[dimethyl(4-acetoxy phenethyl)siloxy]silsesquioxane (OA-POSS), and octakis[dimethyl(4-hydroxyphenethyl)siloxy] silsesquioxane (OP-POSS) through hydrosilylation with octakis(dimethylsiloxy)silsesquioxane (Q(8)M(8)(H)). To investigate the influence of these octuply functionalized POSS derivatives in polymer nanocomposites, we blended OP-POSS, OA-POSS, and OP-POSS with the homopolymer poly(ethylene oxide) (PEO) and characterized its resulting intermolecular interactions (e.g., hydroxyl-ether and carbonyl-ethylene oxide) using FTIR spectroscopy. The thermal properties of these blend systems were investigated using differential scanning calorimetry (DSC) and dynamic mechanical analysis (DIVA). The crystallization kinetics in the miscible binary blends of the crystalline polymer and these inorganic nanoparticles were also determined through DSC and optical microscopy (OM) analyses. Herein, we emphasize the effects of the functional groups on POSS nanocomposites on the crystallization kinetics of PEO. We found that OP-POSS/PEO blend had the highest thermal stability and lowest crystallization rate because its hydrogen bonding interactions (between its hydroxyl and ether units) were stronger than those (between carbonyl and methylene groups) in OA-POSS/PEO. (C) 2009 Elsevier Ltd. All rights reserved.
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NR 70
TC 60
Z9 63
U1 0

U2 31
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 0032-3861
EI 1873-2291
J9 POLYMER
JI Polymer
PD SEP 23
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VL 50
IS 20
BP 4876
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WC Polymer Science
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GA 535HY
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PT J
AU Karsdal, MA
Byrjalsen, I
Henriksen, K
Riis, BJ
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AF Karsdal, Morten A.
Byrjalsen, Inger
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TI A Pharmacokinetic and Pharmacodynamic Comparison of Synthetic and Recombinant Oral Salmon Calcitonin
SO JOURNAL OF CLINICAL PHARMACOLOGY
LA English
DT Article
DE Calcitonin; bone resorption; cartilage degradation
ID degradation-products; postmenopausal women; ovariectomized rats; bone turnover; delivery; osteoarthritis; osteoclasts; osteoporosis; biomarkers; collagen
AB The aim of this study was to assess the bioavailability and pharmacodynamic

efficacy of synthetic salmon calcitonin (ssCT) and recombinant salmon calcitonin (rsCT) in healthy postmenopausal women. The study was a single-blind, randomized study. Participants were 36 postmenopausal women 62 to 74 years old, randomly assigned to a comparison of dosing with ssCT (n = 12) or rsCT (n = 24) given in the morning at 08:00. Study parameters were plasma CT levels measured up to 2 hours postdose and changes in the bone resorption marker serum CTX-I and the cartilage degradation marker urine CTX-II measured up to 4 hours postdose. For both formulations, peak plasma concentrations were obtained 15 minutes after dosage, and no statistically significant differences in the uptake of CT were observed. Measurement of bone resorption and cartilage degradation markers displayed comparable responses, with AUCs of relative change of serum CTX-I of -250% x hours and relative change of urine CTX-II of -180% x hours during the 4-hour observation period. In conclusion, oral synthetic and recombinant calcitonin displayed comparable pharmacodynamic and kinetic properties.
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TC 22
Z9 24
U1 0
U2 6
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0091-2700
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J9 J CLIN PHARMACOL
JI J. Clin. Pharmacol.
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PT J
AU Hoeppner, LH
Secreto, FJ
Westendorf, JJ
AF Hoeppner, Luke H.
Secreto, Frank J.
Westendorf, Jennifer J.
TI Wnt signaling as a therapeutic target for bone diseases
SO EXPERT OPINION ON THERAPEUTIC TARGETS
LA English
DT Review
DE Dkk1; GSK-3; Osteoporosis; Sclerostin; Sfrp1; SOST
ID frizzled-related protein-1; beta-catenin; negative regulator; dkk1-mediated inhibition; parathyroid-hormone; hip osteoarthritis; increases markers; distinct roles; osteoblast; lrp5
AB Background: There is a need to develop new bone anabolic agents because current bone regeneration regimens have limitations. The Wingless-type MMTV integration site (Wnt) pathway has emerged as a regulator of bone formation and regeneration. Objective: To review the molecular basis for Wnt pathway modulation and discuss strategies that target it and improve bone mass. Methods: Data in peer-reviewed reports and meeting abstracts are discussed. Results/conclusions: Neutralizing inhibitors of Wnt signaling have emerged as promising strategies. Small-molecule inhibitors of glycogen synthase kinase 3 beta increase bone mass, lower adiposity and reduce fracture risk. Neutralizing antibodies to Dickkopf 1, secreted Frizz led-related protein 1 and sclerostin produce similar outcomes in animal models. These drugs are exciting breakthroughs but are not without risks. The challenges include tissue-specific targeting and consequently, long-term safety.
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FU NIAMS NIH HHS [R01 AR050074, R01 AR048147] Funding Source: Medline
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NR 99
TC 203
Z9 244
U1 0
U2 19
PU TAYLOR & FRANCIS LTD
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PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
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AU Iseki, Y
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Takeda, H.
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Mashima, N.
Watanabe, S.
Yamamoto, H.
TI Defining the load bearing axis of the lower extremity obtained from anterior-posterior digital radiographs of the whole limb in stance
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Assessment; Mechanical axis deviation; Lower extremity; Digitally computed radiographs
ID knee alignment; functional axes; mechanical axis; osteoarthritis; angle; progression; anatomy; foot
AB Objective: The purpose of this study was to evaluate the reliability of inter-and intra-observer assessments of the mechanical alignment of the lower extremities with digitally computed radiographs of an anterior-posterior view of the whole leg using a new computer-assisted method. Method: Load bearing axis deviation of the lower extremities was quantitatively measured by three examiners in 105 knees of 73 subjects who had osteoarthritis of the knee with a Kellgren-Lawrence grade of 1 or more. A line representing the load bearing axis was drawn from the center of the femoral head to the center of the ankle and the alignment of the leg was assessed by measuring the width of the proximal tibia and the perpendicular distance from the middle of the proximal tibial condyle to the load bearing axis

(Fujifilm OP-A). A ratio of the values was calculated and expressed as a percentage. Results: The inter-observer mean difference was 2.9 % (SD, 2.7), and the intra-observer mean difference was 2.1% (SD, 2.2). The mean intraclass correlation coefficient (ICC) for inter-observer trials was 0.96; that for intra-observer trials was 0.99. Conclusion: Our computer-assisted method was reproducible, and should be considered an alternative method for the measurement of the alignment of the whole leg. (C) 2008 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 27
TC 43
Z9 47
U1 0
U2 1
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584
EI 1522-9653
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD MAY 15
PY 2009
VL 17
IS 5
BP 586
EP 591
DI 10.1016/j.joca.2008.10.001
PG 6
WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 446RU
UT WOS:000266139600006
PM 19013082
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PT J
AU Yun, YH
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Watts, NB
Schulz, MJ
AF Yun, Yeo-Heung

Bhattacharya, Amit
Watts, Nelson B.
Schulz, Mark J.
TI A Label-Free Electronic Biosensor for Detection of Bone Turnover Markers
SO SENSORS
LA English
DT Article
DE immunosensor; label-free; electrochemical impedance; bone turnover marker
ID biochemical markers; serum crosslaps; fracture risk; elderly-women; dna detection; i collagen; resorption; immunosensor; telopeptide; predict
AB This paper describes the development of a biosensor based on label-free immunosensing for the detection of the C-terminal telopeptide bone turnover marker from type-1 collagen. A self-assembled monolayer (SAM) of dithiodipropionic acid was deposited on a gold electrode. Then streptavidin and biotinylated anti-human C-terminal telopeptide antibody were successively conjugated on the self-assembled monolayer. Electrochemical impedance measurements were made to characterize each step of the SAM/streptavidin/biotinylated antibody binding. Subsequently, electrochemical impedance was measured with different concentrations of C-teminal telopeptide. A detection limit of 50 ng/mL and a dynamic range up to 3 mu g/mL were achieved. To our knowledge, this is the first attempt to develop a label-free immunosensor based on electrochemical impedance with DC bias for detection of bone-related degradation and rebuilding products. The electronic biosensor might eventually be used for quantitative point-of-care screening of bone health. It is hoped that analysis of bone turnover markers can indicate the beginning of bone diseases such as osteoarthritis and osteoporosis so that treatment might start early when it is most effective.
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FU National Institute of Occupational Safety and Health; University of Cincinnati Education and Research Center [T42/OH008432-03]; National Institute for Occupational Safety and Health [T42OH008432] Funding Source: NIH RePORTER
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U1 1
U2 14
PU MDPI
PI BASEL
PA ST ALBAN-ANLAGE 66, CH-4052 BASEL, SWITZERLAND
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J9 SENSORS-BASEL
JI Sensors
PD OCT 15
PY 2009
VL 9
IS 10
BP 7957
EP 7969
DI 10.3390/s91007957
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WC Chemistry, Analytical; Engineering, Electrical & Electronic; Instruments & Instrumentation
SC Chemistry; Engineering; Instruments & Instrumentation
GA 512QT
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AU Camafeita, E
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AF Camafeita, Emilio
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TI Proteomics: New insights into rheumatic diseases
SO PROTEOMICS CLINICAL APPLICATIONS
LA English
DT Review
DE Arthritis; Biomarker; Cartilage; Mass spectrometry; Osteoarthritis
ID mesenchymal stem-cells; necrosis-factor-alpha; 2-dimensional gel-electrophoresis; normal articular chondrocytes; systemic-lupus-erythematosus;

flight mass-spectrometry; serum-protein profile; sjogrens-syndrome; synovial-fluid; osteoblast differentiation
AB Tremendous advances undergone in electrophoresis, chromatography, and MS have led proteomic research to unprecedented achievement over the last decade. Proteomics is presently employed for assessing protein expression levels, for monitoring cellular activities and for determination of biochemical pathways, revolutionizing the way we study disease by opening up the possibility to decipher the pathogenesis of clinical manifestations. Over 200 disorders including osteoarthritis (OA), rheumatoid arthritis (RA), and osteoporosis are considered rheumatic diseases (RDs), which affect the musculoskeletal system (joints and other supporting structures of the body such as muscles, tendons, ligaments, and bones) and are a leading cause of disability among older adults. Despite that an autoimmune origin has been proposed for some RDs like RA the pathogenesis of most of these diseases is still unclear. Therefore, proteomic research on RDs, notably OA and RA, can help clarify underlying disease mechanisms, develop biomarkers to improve early detection, measure response to treatment, and devise new therapies. Achievements in the field of proteomics research on RDs are summarized in this work.
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NR 100
TC 9
Z9 9
U1 1
U2 8
PU WILEY-V C H VERLAG GMBH
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PA POSTFACH 101161, 69451 WEINHEIM, GERMANY
SN 1862-8346
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J9 PROTEOM CLIN APPL
JI Proteom. Clin. Appl.
PD FEB 15
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VL 3
IS 2
BP 226
EP 241
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PG 16
WC Biochemical Research Methods; Biochemistry & Molecular Biology
SC Biochemistry & Molecular Biology
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PT J
AU Yang, ZY
Griffith, JF
Leung, PC
Lee, R
AF Yang, Zhengyi
Griffith, James F.
Leung, Ping Chung
Lee, Raymond
TI Effect of Osteoporosis on Morphology and Mobility of the Lumbar Spine
SO SPINE
LA English
DT Article
DE intervertebral disc; lumbar spine; biomechanics; morphology; spinal mobility
ID bone-mineral density; facet joint osteoarthritis; quality-of-life; intervertebral disc; precision-measurement; postmenopausal women; degenerative changes; vertebral deformity; trabecular bone; chinese men
AB Study Design. Cross-sectional study. Objective. The purpose of this study was to examine disc morphology and spinal mobility in subjects with varying degrees of osteoporosis. Summary of Background Data. There was limited information on the effect of osteoporosis on lumbar morphology and spinal mobility. It was also unclear how osteoporosis affects the nonosseous tissues such as the intervertebral disc. Methods. Ninety elderly subjects with varying bone mineral densities (22 normal, 28 osteopenia, 40 osteoporosis) were recruited from an osteoporosis clinic. Lateral radiographs and magnetic resonance images of their lumbar spines were obtained. An electromagnetic tracking device was employed to measure the ranges of motion of the whole lumbar spine. Results. Although the thoracic spine had been shown to have decreased anterior vertebral body height in subjects with osteoporosis, this study revealed that the anterior height was increased in the lumbar region. Osteoporosis was associated with expansion of the middle of the disc with corresponding collapse of vertebral bodies, but osteoporosis was found not to be related to either disc preservation or degeneration. No significant change in spinal mobility was observed in patients with osteoporosis. Conclusion. Osteoporosis does not only affect the bone but also the nonosseous tissues. It was found to be associated with expansion of the intervertebral disc, which was likely to be secondary to changes in the vertebral endplate.
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TI Differential articular calcified cartilage and subchondral bone in postmenopausal women with osteoarthritis and osteoporosis: Two-dimensional analysis
SO JOINT BONE SPINE
LA English
DT Article
DE Osteoarthritis; Osteoporosis; Articular cartilage; Bone morphometry
ID femoral-head; joint; zone; hip; histomorphometry; microcracks; metabolism; thickness; tissue; cells
AB Objectives: Osteoarthritis (OA) and osteoporosis (OP) are both common problems that affect life quality in aging society. It has been for decades of years to debate an inverse relationship between OA and OP. The objective of this paper was to compare structural properties of the articular calcified cartilage (ACC) and subchondral bone between postmenopausal women with OA and OP. Methods: Eight femoral heads were taken from postmenopausal women during total hip replacement surgery due to primary OA. They were compared with nine femoral

heads obtained from age-matched women with OP during hemi-hip arthroplasty surgery due to osteoporotic fracture of the proximal femur. Two-dimensional histomorphometric sections were prepared to measure the thickness of ACC and bone histomorphometric parameters. The ratio of ACC to the total articular cartilage (TAC) was also calculated in all bone specimens. Results: Osteoarthritic donors had higher ACC and the ratio of ACC to TAC (ACC: 117.69 +/- 28.16 mu m vs. 97.88 +/- 16.79 mu m, P=0.041; the ratio of ACC to TAC: 15.74% vs. 10.51%, P = 0.023). Lower bone Volume fraction (BV/TV), trabecular thickness (Tb.Th), trabecular number (Tb.N) and the ratio of nodes to termini (Nd/Tm) were demonstrated in donors with OP (BV/TV: 21.55 +/- 3.41% vs. 16.64 +/- 2.26%, P = 0.003; Tb.Th: 121.33 +/- 16.11 mu m vs. 98.59 +/- 18.56 mu m, P = 0.017; Tb.N: 2.41 +/- 0.73 m(-1) vs. 1.37 +/- 0.31 mm(-1), P = 0.001; Nd/Tm: 0.78 +/- 0.22 vs. 0.50 +/- 0.14, P = 0.007). However, trabecular space (Tb.Sp) increased in these osteoporotic patients (Tb.Sp: 345.49 +/- 106.18 mu m vs. 652.09 +/- 159.71 mu m, P=0.0004). Conclusions: The pathogenesis of OA and OP were influenced by differential properties of ACC and subchondral bone microstructure. Structural properties of the subchondral mineralized tissue supported that an inverse relationship existed between postmenopausal women with OA and OP. (C) 2009 Societe francaise de rhumatologie. Published by Elsevier Masson SAS. All rights reserved.
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AU Ovesen, J
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TI Differences in zinc status between patients with osteoarthritis and osteoporosis
SO JOURNAL OF TRACE ELEMENTS IN MEDICINE AND BIOLOGY
LA English
DT Article
DE Zinc; Osteoarthritis; Osteoporosis; Bone strength; Bone density
ID bone-mineral density; growth-factor-i; growing rats; postmenopausal women; senile osteoporosis; cancellous bone; femoral-head; metabolism; hip; fracture
AB Zinc has been suggested to play an important role in the development of osteoporosis, whereas the influence of zinc on osteoarthritis has attracted much less attention. The aim of the study was to investigate and compare the zinc status and bone turnover, density, and biomechanical properties of osteoarthritic and osteoporotic patients. The study comprised 40 women who underwent hip

replacement due to osteoarthritis or osteoporosis. Serum and urine zinc content, and bone resorption markers and serum bone formation markers were determined. The unaffected hip and the exarticulated affected femoral head underwent DEXA scanning. Bone biopsies were obtained from the femoral heads and the biomechanical properties were determined. The biopsies were ashed and the bone zinc content was ascertained. Osteoarthritic patients had significantly higher serum zinc concentrations and lower urine zinc concentrations than osteoporotic patients, whereas the bone zinc content did not differ. The zinc status was not found to be a predictor for the bone strength. In conclusion, the finding that the zinc status of osteoporotic patients is significantly different from that of osteoartritic patients is new and supports the view that osteoporosis and osteoarthritis rarely occur in the same individual. (C) 2008 Elsevier GmbH. All rights reserved.
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TI Gene expression profile of the bone microenvironment in human fragility fracture bone
SO BONE
LA English
DT Review
DE Gene microarray; Gene expression profiling; Fragility fracture; Osteoporosis; Osteoblastic osteoclastic adipocytic genes
ID human trabecular bone; a scavenger receptor; tissue growth-factor; microarray analysis; insulin-resistance; messenger-rna; negative regulator; annexin-ii; differentiation; protein
AB Osteoporosis (OP) is a common age-related systemic skeletal disease, with a strong genetic component, characterised by loss of bone mass and strength, which leads to increased bone fragility and susceptibility to fracture. Although some progress has been made in identifying genes that may contribute to OP disease,

much of the genetic component of OP has yet to be accounted for. Therefore, to investigate the molecular basis for the changes in bone Causally involved in OP and fragility fracture, we have used a microarray approach. We have analysed altered gene expression in human OP fracture bone by comparing mRNA in bone from individuals with fracture of the neck of the proximal femur (OP) with that from age-matched individuals with osteoarthritis (OA), and control (CTL) individuals with no known bone pathology. The OA sample set was included because all inverse association, with respect to bone density, has been reported between OA and the OP individuals. Compugen H19K oligo human microarray slides were used to compare the gene expression profiles of three sets of female samples comprising, 10 OP-CTL, 10 OP-OA, and 10 OA-CTL sample pairs. Using linear models for microarray analysis (Limma), 150 differentially expressed genes in OP bone with t scores >5 were identified. Differential expression of 32 genes in OP bone was confirmed by real time PCR analysis ($p<0.01$). Many of the genes identified have known or Suspected roles in bone metabolism and in some cases have been implicated previously in OP pathogenesis. Three major sets of differentially expressed genes in OP bone were identified with known or suspected roles in either osteoblast maturation (PRRX1, ANXA2, ST14, CTSB, SPARC, FST LGALS1, SPP1, ADM, and COL4A1), myelomonocytic differentiation and osteoclastogenesis (TREM2, ANXA2, IL10, CD14, CCR1, ADAM9, CCL2, CTGF, and KLF10), or adipogenesis, lipid and/or glucose metabolism (IL10, MARCO, CD14, AEBP1, FST, CCL2, CTGF, SLC14A1, ANGPTL4, ADM, TAZ, PEA15, and DOK4). Altered expression of these genes and others in these groups is consistent with previously Suggested underlying molecular mechanisms for OP that include altered osteoblast and osteoclast differentiation and function, and ail imbalance between osteoblastogenesis and adipogenesis. (C) 2008 Elsevier Inc. All rights reserved.
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DE Collagen; collagen synthesis; collagen turnover; essential amino acid; glycine; glycine metabolism; osteoarthritis; osteoporosis
ID body protein-synthesis; 5-l-oxoproline pyroglutamic acid; essential amino-acid; human lung; urinary-excretion; rat-liver; intracellular degradation; compartmental analysis; carnitine metabolism; extracellular-matrix
AB In a previous paper, we pointed out that the capability to synthesize glycine from serine is constrained by the stoichiometry of the glycine hydroxymethyltransferase reaction, which limits the amount of glycine produced to be no more than equimolar with the amount of C 1 units produced. This constraint predicts a shortage of available glycine if there are no adequate compensating processes. Here, we test this prediction by comparing all reported fluxes for the production and consumption of glycine in a human adult. Detailed assessment of all possible sources of glycine shows that synthesis from serine accounts for more than 85% of the total, and that the amount of glycine available from synthesis, about 3 g/day, together with that available from the diet, in the range 1.5-3.0 g/day, may fall significantly short of the amount needed for all metabolic uses, including collagen synthesis by about 10 g per day for a 70 kg human. This result supports earlier suggestions in the literature that glycine is a semi-essential amino

acid and that it should be taken as a nutritional supplement to guarantee a healthy metabolism.
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NR 118
TC 119
Z9 131
U1 2
U2 40
PU INDIAN ACAD SCIENCES
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J9 J BIOSCIENCES
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WC Biology
SC Life Sciences & Biomedicine - Other Topics
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PT J
AU Wislowska, M
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TI Serum concentrations of formation (PINP) and resorption (Ctx) bone turnover markers in rheumatoid arthritis
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE Rheumatoid arthritis; Osteoporosis; PINP; Ctx
ID biochemical markers; fractures; risk; hip; classification; osteoporosis; disease; women
AB Joint inflammation in rheumatoid arthritis (RA) induces local periarticular osteoporosis. Generalised bone mineral density (BMD) decrease concerns approximately 50% of rheumatic patients. Both types of bone mass depletion can issue from cytokine-induced (TNF-alpha, IL-1, IL-6) osteoclasts' activation, osteoprotegerin and its ligand's (RANKL) function disorders, patients' immobilisation and glucocorticosteroid (GCS) intake, as well as from hormonal alterations in postmenopausal women, predominate among RA individuals. The aim of the study was to compare serum concentrations of marker of bone formation-serum aminoterminal propeptide of type I collagen (PINP), and bone resorption, carboxy (C) terminal telopeptide (Ctx), bone turnover markers in RA and osteoarthritis (OA) patients and in RA groups of different disease activity, different degree of joint damage and the history of GCS intake. A total of 50 RA female patients and 50 women with knee OA were included in the study. Blood for morphology and biochemistry laboratory tests was taken. Joint X-rays to establish OA and RA diagnosis and the degree of RA progression, as well as DEXA BMD measurements were performed. PINP and Ctx concentrations were assessed. In RA patients the number of swollen and painful joints, the duration of morning stiffness, visual analogue scale values and Waaler-Rose's test activity were recorded. The Disease Activity Index (DAS 28) was counted from the appropriate formula. No differences in bone turnover markers' concentrations were noted neither between RA and OA patients nor between the RA group when compared to the one without the history of GCS use. Bone turnover markers' concentrations in RA were proportional to the number of swollen and painful joints. However, no

correlation was found between the markers' concentrations and RA activity assessed by DAS 28 or by laboratory means. Ctx concentrations were higher in patients at II degree joint damage according to Larsen and Dale's than at more advanced stages. Ctx concentrations decreased with the disease duration. Serum morphogenesis and resorption markers' concentrations change in course of RA indicating the decrease in bone metabolic activity with the disease duration and progression. High RA activity and severity correlate with increased markers' levels-the resorption one. The influence of GCS on bone metabolism in RA requires further study.

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TC 38
Z9 43
U1 1
U2 3
PU SPRINGER HEIDELBERG
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PA TIERGARTENSTRASSE 17, D-69121 HEIDELBERG, GERMANY
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J9 RHEUMATOL INT
JI Rheumatol. Int.
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WC Rheumatology
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PT J
AU Sekiya, I
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TI Periodic Knee Injections of BMP-7 Delay Cartilage Degeneration Induced by Excessive Running in Rats
SO JOURNAL OF ORTHOPAEDIC RESEARCH
LA English
DT Article
DE BMP-7; articular cartilage; strenuous running; keratan sulfate; weekly injection
ID human articular chondrocytes; serum keratan sulfate; osteogenic protein-1; experimental osteoarthritis; repair; bone; op-1
AB Strenuous running of rats enhances mechanical stress on the knee, thereby inducing degeneration of articular cartilage. Bone morphogenetic protein-7 (BMP-7) has an inhibitory effect on cartilage degeneration, suggesting its usefulness for human osteoarthritis patients. However, its mode of administration should be investigated. We examined whether weekly knee injections of BMP-7 delayed the progression of cartilage degeneration. Wistar rats were forced to run 30 km in 6 weeks on a rodent treadmill, and BMP-7 was injected weekly into the knee. Macroscopically and histologically, this strenuous running regimen induced cartilage degeneration. Weekly injections of 250 ng BMP-7 delayed the progression of cartilage degeneration. Immunohistochemically, in the control knee, type II Collagen expression decreased, while BMP-7 expression in chondrocytes slightly increased. Interestingly, weekly injection of BMP-7 increased BMP-7 expression even 9 days after the final injection. Disulfate disaccharide keratan sulfate in serum transiently increased in the control group, while it remained at a low level in the BMP-7 group. Weekly BMP-7 injection increased BMP-7 expression in chondrocytes and its effect seemed to last more than 7 days. The effect of BMP-7 could be monitored by serum keratan sulfate concentration. Periodical injections of BMP-7 delayed progression of cartilage degeneration induced by excessive running in rats. (C) 2009 Orthopaedic Research Society. Published by Wiley Periodicals, Inc. J Orthop Res 27:1088-1092, 2009
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NR 21
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PU JOHN WILEY & SONS INC
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J9 J ORTHOP RES
JI J. Orthop. Res.

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WC Orthopedics
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PT J
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TI GAIT analysis in patients operated with a novel total ankle prosthesis
SO GAIT & POSTURE
LA English
DT Article
DE Total ankle replacement; Human movement analysis; Total 3D gait protocol; Ankle motion
ID replacement; osteoarthritis; arthroplasty; design
AB A new three-part total ankle prosthesis was designed recently to restore natural joint motion while maintaining full congruity of the articulating surfaces. This was achieved by replicating natural function for the ligaments. Early functional recovery was assessed in the present study in patients who underwent replacement with this prosthesis. This was undertaken using the AOFAS clinical scoring system and gait analysis, performed preoperatively and at 6 and 12 months from surgery. The 10 patients had, at the time of operation, a mean age of 57.4 years (range 45-72), and BMI 25.8 (range 20.4-34.1). A recently proposed protocol for three-dimensional

and anatomically based analysis of joint kinematics and kinetics was used. The AOFAS score rose from 44.3 pre-op to 81.5 and 81.0 respectively at 6- and 12-month follow-up, with particular improvement in function. Spatio-temporal parameters improved considerably already at 6 months. More normal patterns and ranges of rotations and moments were observed in the three anatomical planes of the replaced ankle at 6 months and maintained at 12 months. In particular the improvement in dorsi-plantarflexion range in stance was significant, though a limited plantarflexion in swing occurred. EMG revealed a good recovery of physiological activity for the biceps femoris at 12-month follow-up. The new ankle prosthesis contributed to early functional recovery at 6 months, maintained at 1 year. (C) 2009 Elsevier B.V. All rights reserved.
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NR 25
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Z9 57
U1 0
U2 4
PU ELSEVIER IRELAND LTD
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PA ELSEVIER HOUSE, BROOKVALE PLAZA, EAST PARK SHANNON, CO, CLARE, 00000, IRELAND
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WC Neurosciences; Orthopedics; Sport Sciences
SC Neurosciences & Neurology; Orthopedics; Sport Sciences
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PT J
AU Vestergaard, P
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AF Vestergaard, Peter
Rejnmark, Lars
Mosekilde, Leif
TI Osteoarthritis and Risk of Fractures
SO CALCIFIED TISSUE INTERNATIONAL
LA English

DT Review
DE Osteoarthritis; Fracture; Hip; Knee; Analgesic
ID bone-mineral density; postmenopausal women; knee osteoarthritis; register; disease; hip; osteoporosis; metaanalysis; denmark
AB We conducted a case-control study on the effects of osteoarthritis (OA) on the risk of fractures. There were 124,655 fracture cases and 373,962 age- and gender-matched controls. The main exposure was OA, and the main confounders were use of diuretics, antihypertensive drugs, and pain medication. OA was associated with a decreased risk of any fracture and of hip, forearm, and spine fractures. In general a decreasing trend in the risk of fractures was present with increasing time sine diagnosis of OA. The effect on fractures in areas rich in cortical bone such as the hip in general was larger than effects on skeletal sites rich in trabecular bone such as the spine. OA in the hip and knee, in general, was associated with a decreasing risk of fractures with time since diagnosis of OA, while this was not the case for OA in other locations. OA seems to be associated with a decreased risk of fractures at multiple skeletal sites as well as sites far from the location of OA. This may indicate systemic effects on bone strength, especially in areas rich in cortical bone.
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NR 27
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Z9 46
U1 0
U2 12
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0171-967X
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Khoueir, P
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TI Prospective assessment of axial back pain symptoms before and after bariatric weight reduction surgery
SO SPINE JOURNAL
LA English
DT Article
DE Lumbago; Chronic back pain; Obesity; Spondylosis; Bariatric surgery; Weight loss; Short Form-36; Oswestry Disability Index; Body mass index; Spine
ID morbidly obese-patients; overweight; health; women; osteoarthritis; disability; increases; gender; state; life
AB BACKGROUND: The prevalence of obesity in developed countries has reached alarming levels, doubling in the United States since 1980. Although obese patients with chronic low back pain are frequently advised to lose weight, the association between these medical conditions remains unproven. PURPOSE: This study prospectively assessed clinically reported changes in chronic axial low back pain symptoms after weight reduction from bariatric surgery for morbid obesity. STUDY DESIGN: Prospective longitudinal study. PATIENT SAMPLE: Fifty-eight consecutive patients with morbid obesity and chronic axial low back pain undergoing bariatric surgery over a period of 6 months. Patients were considered morbidly obese if they were 50% to 100% above their ideal body weight or having a body mass index (BMI) greater than 40. OUTCOME MEASURES: Visual Analog Scale (VAS) for axial low back pain, Short Form-36 (SF-36) Health Survey, and Oswestry Disability Index (ODI). METHODS: Patients undergoing weight reduction surgery were assessed preoperatively and postoperatively at 12 months with validated clinical measures for axial back pain and disability (VAS, SF-36, and ODI). Bariatric surgery parameters included demographic data, weight, and BMI. Statistical analysis included paired t tests and multiple regression techniques. RESULTS: Of the initial 58 patients, 38

(65%) completed both preoperative (Pre-Op) and postoperative (Post-Op) questionnaires at 12 months. These 38 subjects included 30 women and 8 men, with an age range of 20 to 68 years (mean 48.4 +/- 10.1). Overall, these patients showed a decrease in mean weight from 144.52 +/- 41.21 kg Pre-Op to 105.59 +/- 29.24 Post-Op (p<.0001) and BMI from 52.25 +/- 12.61 kg/m(2) Pre-Op to 38.32 +/- 9.66 Post-Op (p<.0001). Patients demonstrated a statistically significant mean 44% decrease in axial back pain on the VAS scale (p=.006; 5.2 +/- 3.35 Pre-Op, to 2.9 +/- 3.1 Post-Op). Analysis of the SF-36 major components revealed that patients experienced significant increases in mean physical health by 58% (p<.0001; 44.5 +/- 20.09 to 70.24 +/- 26.84) and in median mental health by 6% (p=.03; 70 +/- 7.14 to 73.39 +/- 11.78). Patients also showed statistically significant 24% decrease in Post-Op ODI score for physical disability (p=.05) from 26.75 +/- 16.56 Pre-Op to 20.35 +/- 18.71 Post-Op (p=.05). CONCLUSION: This study suggests that the substantial weight reduction after bariatric surgery may be associated with moderate reductions in preexisting back pain at early-follow-up. This effect did not appear to be the result only of an overall improvement in well-being associated with weight loss. However, larger randomized controlled clinical studies with longer-term follow-up are needed to definitively determine a causal relationship. (C) 2009 Elsevier Inc. All rights reserved.
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TI Experimental model to evaluate in vivo and in vitro cartilage MR imaging by

means of histological analyses
SO EUROPEAN JOURNAL OF RADIOLOGY
LA English
DT Article
DE Magnetic resonance imaging (MRI); Histology; Knee; Cartilage; Osteoarthritis
ID articular-cartilage; hyaline cartilage; osteoarthritis; knee; arthroscopy; defects; accuracy; lesions; morphology; sequences
AB Objectives: Implementation of an experimental model to compare cartilage MR imaging by means of histological analyses. Material and methods: MRI was obtained from 4 patients expecting total knee replacement at 1.5 and/or 3 T prior surgery. The time-frame between pre-op MRI and knee replacement was within two days. Resected cartilage-bone samples were tagged with Ethi (R)-pins to reproduce the histological cutting course. Pre-operative scanning at 1.5 T included following parameters for fast low angle shot (FLASH: TR/TE/FA = 33 ms/6 ms/30 degrees, BW = 110 kHz, 120 nun x 120 mm FOV, 256 x 256 matrix, 0.65 mm slice-thickness) and double echo steady state (DESS: TR/TE/FA = 23.7 ms/6.9 ms/40 degrees, BW = 130 kHz, 120 x 120 mm. FOV, 256 x 256 matrix, 0.65 mm, slice-thickness). At 3 T, scan parameters were: FLASH (TR/TE/FA = 12.2 ms/5.1 ms/10 degrees, BW = 130 kHz, 170 x 170 mm FOV, 320 x 320, 0.5 mm slice-thickness) and DESS (TR/TE/FA = 15.6 ms/4.5 ms/25 degrees, BW = 200 kHz, 135 mm x 150 mm FOV, 288 x 320 matrix, 0.5 mm slice-thickness). Imaging of the specimens was done the same day at 1.5 T MRI (Noyes) and histological (Mankin) score scales were correlated using the paired t-test. Sensitivity and specificity for the detection of different grades of cartilage degeneration were assessed. Inter-reader and intra-reader reliability was determined using Kappa analysis. Results: Low correlation (sensitivity, specificity) was found for both sequences in normal to mild Mankin grades. Only moderate to severe changes were diagnosed with higher significance and specificity. The use of higher field-strengths was advantageous for both protocols with sensitivity values ranging from 13.6% to 93.3% (FLASH) and 20.5% to 96.2% (DESS). Kappa values ranged from 0.488 to 0.944. Conclusions: Correlating MR images with continuous histological slices was feasible by using three-dimensional imaging, multi-planar-reformat and marker pins. The capability of diagnosing early cartilage changes with high accuracy could not be proven for both FLASH and DESS. (C) 2008 Elsevier Ireland Ltd. All rights reserved.
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Pruitt, Lisa
Diez-Perez, Adolfo
Alliston, Tamara
Weaver, Valerie
Lotz, Jeffrey
TI The tissue diagnostic instrument
SO REVIEW OF SCIENTIFIC INSTRUMENTS
LA English
DT Article
DE biological organs; biomechanics; biomedical equipment; bone; cancer; dentistry; elastic moduli; hardness; neurophysiology; orthopaedics; patient diagnosis; tumours
ID elastic-modulus; force spectroscopy; indentation; bone; plasticity; hardness
AB Tissue mechanical properties reflect extracellular matrix composition and organization, and as such, their changes can be a signature of disease. Examples of such diseases include intervertebral disk degeneration, cancer, atherosclerosis, osteoarthritis, osteoporosis, and tooth decay. Here we introduce the tissue diagnostic instrument (TDI), a device designed to probe the mechanical properties of normal and diseased soft and hard tissues not only in the laboratory but also in patients. The TDI can distinguish between the nucleus and the annulus of spinal disks, between young and degenerated cartilage, and between normal and cancerous mammary glands. It can quantify the elastic modulus and hardness of the wet dentin left in a cavity after excavation. It can perform an indentation test of bone tissue, quantifying the indentation depth increase and other mechanical parameters. With local anesthesia and disposable, sterile, probe assemblies, there

has been neither pain nor complications in tests on patients. We anticipate that this unique device will facilitate research on many tissue systems in living organisms, including plants, leading to new insights into disease mechanisms and methods for their early detection.
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TI The association between socioeconomic status and osteoporotic fracture in population-based adults: a systematic review
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Minimal trauma fracture; Osteoporosis; Social disadvantage; Socioeconomic status; Systematic review
ID public health-care; hip-fractures; risk-factors; marital-status; united-states; osteoarthritis; work; life; epidemiology; disparity
AB Although socioeconomic status (SES) is inversely related to most diseases, this systematic review showed a paucity of good quality data examining influences of SES on osteoporotic fracture to confirm this relationship. Further research is required to elucidate the issue and any underlying mechanisms as a necessary

precursor to considering intervention implications. The association between socioeconomic status (SES) and musculoskeletal disease is little understood, despite there being an inverse relationship between SES and most causes of morbidity. We evaluated evidence of SES as a risk factor for osteoporotic fracture in population-based adults. Computer-aided search of Medline, EMBASE, CINAHL, and PsychINFO from January 1966 until November 2007 was conducted. Identified studies investigated the relationship between SES parameters of income, education, occupation, type of residence and marital status, and occurrence of osteoporotic fracture. A best-evidence synthesis was used to summarize the results. Eleven studies were identified for inclusion, which suggested a lack of literature in the field. Best evidence analysis identified strong evidence for an association between being married/living with someone and reduced risk of osteoporotic fracture. Limited evidence exists of the relationship between occupation type or employment status and fracture, or for type of residence and fracture. Conflicting evidence exists for the relationship between osteoporotic fracture and level of income and education. Limited good quality evidence exists of the role SES might play in osteoporotic fracture. Further research is required to identify whether a relationship exists, and to elucidate underlying mechanisms, as a necessary precursor to considering intervention implications.
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TI Primary Osteoarthritis No Longer Primary: Three Subsets with Distinct Etiological, Clinical, and Therapeutic Characteristics
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE primary osteoarthritis; subtypes; genetic alterations; menopause-related estrogen deficiency; aging

ID multiple epiphyseal dysplasia; estrogen replacement therapy; oligomeric matrix protein; ii procollagen gene; periarticular tibial osteophytes; knee osteoarthritis; skeletal-muscle; articular chondrocytes; postmenopausal women; symptomatic osteoarthritis
AB Background: Osteoarthritis (OA) has been historically divided into primary and secondary. Primary OA has been defined as an idiopathic condition developing in previously undamaged joints in the absence of an obvious causative mechanism. During the last few years a large amount of evidence has provided new insights into the biochemistry and molecular biology of cartilage, subchondral bone, and other articular tissues, which suggest distinct etiopathogenetic mechanisms in some forms of primary OA. Objective: To propose an etiopathogenic classification of primary OA in the light of the significant progress in the understanding of the disease. Methods: A review of the literature was performed by searching the Medline and PubMed databases From 1952 to November 2008 using the following keywords: genetic alteration, heritability, estrogen, menopause, and aging either alone or in various combinations with joint, cartilage, subchondral bone, synovium, ligaments, muscle, tendons, OA, and osteoporosis. Results: Numerous studies have shown that genetic alterations, menopause-related estrogen deficiency, and aging play crucial roles in the molecular pathophysiological events involved in the process of cartilage and joint damage and thus in development of OA. We propose classifying primary OA into 3 distinct although interrelated Subsets: type I OA, genetically determined; type II OA, estrogen hormone dependent; and type III OA, aging related. Conclusions: The 3 proposed subsets of OA display distinct etiological, clinical, and therapeutic characteristics and should therefore no longer be considered to be "Primary OA." (C) 2009 Elsevier Inc. All rights reserved. Semin Arthritis Rheum 39:71-80
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DE Osteoarthritis; X-ray; Prevalence; Foot; Pain
ID older-people; pain; association; prevalence; disability; community; joints; knee; population
AB Objectives: To evaluate a radiographic atlas for grading foot osteoarthritis (OA) in relation to the relative sensitivity of different radiographic and views and features, and to examine the relationship between radiographic OA and foot symptoms. Methods: Weightbearing clorso-plantar (DP) and lateral foot radiographs were obtained from 197 people (126 women and 71 men) aged 62-94 years (mean age 75.9, standard deviation [SD] 6.6). The prevalence of OA in five joints (the first metatarsophalangeal joint [1st MPJ], the first cuneo-metatarsal joint [1st CMJ], the second cuneo-metatarsal joint [2nd CMJ], the navicular-first cuneiform joint [N1st CJ] and the talo-navicular joint [TNJ]) was then determined using both views in combination (as recommended in the atlas), or by using either view in isolation. Associations between radiographic OA in individual foot joints and symptoms were then explored. Results: Joint-specific prevalence of OA using both DP and lateral views was 1st MPJ (42.4%), 1st CMJ (22.6%), 2nd CMJ (60.2%), N1st CJ (39.1%) and TNJ (32.7%). Using only the DP view detected almost all cases of 1 st MPJ OA (94.6%), however, the sensitivity was lower for the other joints (31.0-60.7%). Using only the lateral view detected almost all cases of OA (83.8 to 86.9%), with the exception of the 1 st MPJ and 1 st CMJ (50.9% and 60.7%, respectively). Using either osteophytes (OP) alone or joint space narrowing (JSN) alone showed low sensitivity for all joints (14.3-63.0%), with the exception of OP alone in the DID view for the 1 st MPJ and JSN in the lateral view for the 2nd CMJ (83.8% and 84.0%, respectively). Radiographic OA in individual foot joints and the total number of joints affected were both moderately associated with foot symptoms. Conclusion: Epidemiological and clinical studies should incorporate observation of both OP and JSN from both DP and lateral views to determine the presence of OA in the foot, as the number of cases detected is reduced if only one radiographic feature or view is used. Radiographic foot OA is common in older people and is moderately associated with foot symptoms. (c) 2008 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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PT J
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AF Nanke, Yuki
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TI Geranylgeranylacetone, a non-toxic inducer of heat shock protein, induces cell death in fibroblast-like synoviocytes from patients with rheumatoid arthritis
SO MODERN RHEUMATOLOGY
LA English
DT Article
DE Apoptosis; Geranylgeranylation; Rheumatoid arthritis; Synovitis; Statin
ID gastric-mucosal cells; kinase-c; induced expression; synovial-cells; nitric-oxide; in-vitro; induction; apoptosis; statins; heat-shock-protein-72
AB Fluvastatin (Fluv) is reported to induce apoptosis in rheumatoid arthritis (RA) synoviocytes through the blocking of protein geranylgeranylation. We report here our investigation of whether geranylgeranylacetone (GGA) induces cell death in RA synoviocytes. Synovial tissues were obtained from patients with RA at the time of total knee arthroplasty. Fibroblast-like synoviocytes (FLS) cultured in three passages were used for the experiments. The FLS were then cultured for 48 h in 48-well

flat-bottomed plates containing various concentrations of GGA (0.1-4.0 mu g/ml) and either 0.1 or 0.5 mu M Fluv. We also examined the effect of GGA and Fluv in human fibroblasts from normal skin (CCD-25SK) and FLS from patients with osteoarthritis (OA). Cells demonstrating cell death were counted following trypan blue staining. In the absence of GGA, there was no apparent cell death, as evidence by trypan blue staining. Concentrations of GGA between 0.1 and 4.0 mu g/ml induced cell death in RA FLS, but not in skin fibroblasts (CCD-25SK) nor OA FLS. The number of synoviocytes demonstrating cell death induced by 0.1 or 0.5 mu M Fluv was significantly higher than that by the medium alone. In summary, we found that GGA induced cell death in RA FLS, suggesting that GGA may be a potential new therapeutic agent for RA as well as osteoporosis.
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AU Rittweger, J
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TI Bone loss in the lower leg during 35 days of bed rest is predominantly from the cortical compartment
SO BONE
LA English
DT Article
DE Space flight; Simulated microgravity; Osteoporosis; Exercise; pQCT
ID muscle strength; mineral density; weight-bearing; femoral-neck; osteoporosis; fracture; adaptation; turnover; recovery; duration
AB Immobilization-induced bone loss is usually greater in the epiphyses than in the diaphyses. The larger fraction of trabecular bone in the epiphyses than in the diaphyses offers an intuitive explanation to account for this phenomenon. However, recent evidence contradicts this notion and suggests that immobilization-induced bone loss from the distal tibia epiphysis is mainly from the cortical compartment. The aim of this study was to establish whether this pattern of bone loss was a general rule during immobilization. We monitored various skeletal sites with different tissue composition during 5 weeks of immobilization. Ten healthy male volunteers with mean age of 24.3 years (SD 2.6 years) underwent strict horizontal bed rest. Bone scans were obtained during baseline data collection, at the end of bed rest and after 14 days of recovery by peripheral Quantitative Computed Tomography (pQCT). Sectional images were obtained from the distal tibia epiphysis (at 4% of the tibia's length), from the diaphysis (at 38%), from the proximal metaphysis (at 93%) and from the proximal epiphysis (at 98%), as well as from the distal femur epiphysis (at 4% of the femur's length) and from the patella. Relative bone losses were largest at the patella, where they amounted to -3.2% (SD 1.8%, $p<0.001$) of the baseline values, and smallest at the tibia diaphysis, where they amounted to -0.7% (SD 1.0%, $p=0.019$). The relative losses were generally larger from cortical than from trabecular compartments ($p=0.004$), and whilst all skeletal sites depicted such cortical losses, substantial trabecular losses were found only from the proximal tibia epiphysis. Results confirm that the differential losses from the various skeletal sites cannot be explained on the basis of trabecular vs. cortical tissue composition differences, but that endocortical circumference can account for the different amounts of bone loss in the tibia. The present study therefore supports the suggestion of the subendocortical layer as a transitional zone, which can readily be transformed into trabecular bone in response to immobilization. The latter will lead to cortical thinning, a factor that has been associated with the risk of fracture and with osteoarthritis. (C) 2009 Elsevier Inc. All rights reserved.
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TC 88
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PU ELSEVIER SCIENCE INC
PI NEW YORK
PA 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA
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JI Bone
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PT J
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TI Relationship Between Low Bone Mineral Density and Varus Deformity in Postmenopausal Women with Knee Osteoarthritis
SO JOURNAL OF RHEUMATOLOGY
LA English

DT Article
DE OSTEOARTHRITIS; KNEE; BONE DENSITY; MENOPAUSE; OSTEOPOROSIS
ID high tibial osteotomy; hip osteoarthritis; static alignment; proximal tibia; osteoporosis; association; arthritis; severity; incident; men
AB Objective. To assess the relationship between bone mineral density (BMD) and varus deformity arising from bone structural changes caused by knee osteoarthritis (OA) in postmenopausal women. Methods. This cross-sectional study involved 135 consecutive postmenopausal female patients who had varus knee OA and a Kellgren-Lawrence grade >= 2. Knee radiographs were obtained with the patient standing on one lea, and subjects were classified into 3 tertile groups according to femorotibial angle, which was taken as a measure of varus knee OA severity. We also measured the 3 subangles that make up the femorotibial angle, and focused on the varus inclination of the tibial plateau. BMD was measured in the lumbar spine, femoral neck, and medial and lateral tibial condyles using dual-energy X-ray absorptiometry. Differences between femorotibial angle tertile groups were assessed. and associations between femorotibial sub-angles and BMD values at various points were evaluated. Results. After adjustment for age and body mass index, there was no significant association between the varus inclination of the tibial plateau and lumbar spine BMD. A weak but statistically significant negative correlation existed between varus inclination of the tibial plateau and BMD at the ipsilateral proximal femur and lateral tibial condyle. Conclusion. Varus inclination of the tibial plateau was significantly more severe in the femorotibial an-le tertile 3 group, and in patients with lower BMD in the ipsilateral lower limb. Varus knee OA may result not only from cartilage loss but also from structural changes of the bone. (First Release Feb 1 2009; J Rheumatol 2009;36:592-7: doi: 10.3899/jrheum.080699)
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Z9 24
U1 0
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PI TORONTO
PA 920 YONGE ST, SUITE 115, TORONTO, ONTARIO M4W 3C7, CANADA
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J9 J RHEUMATOL
JI J. Rheumatol.
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WC Rheumatology
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GA 415NG
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PT J
AU Alves, RMD
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TI Chagas' disease and ageing: the coexistence of other chronic diseases with Chagas' disease in elderly patients
SO REVISTA DA SOCIEDADE BRASILEIRA DE MEDICINA TROPICAL
LA English
DT Article
DE Chagas' disease; Ageing; Elderly; Comorbidities
ID self-rated health; heart-failure; mortality; adults
AB This study aimed to identify the main comorbidities in elderly chagasic patients treated in a reference service and identify possible associations between the clinical form of Chagas' disease and chronic diseases. Ninety patients aged 60 years-old or over were interviewed and their clinical diagnoses recorded. The study population profile was: women (55.6%); median age (67 years); married (51.1%); retired (73.3%); up to four years' education (64.4%); and earning less than two minimum wages (67.8%). The predominant forms of Chagas' disease were the cardiac (46.7%) and mixed forms (30%). There was a greater proportion of mild cardiac dysfunction (84.1%), frequently in association with megaesophagus. The mean number of concurrent diseases was 2.856 +/- 1.845, and 33% of the patients M four or more comorbidities. The most frequent were systemic arterial hypertension (56.7%), osteoporosis (23.3%), osteoarthritis (21.2%) and dyslipidemia (20%). Positive correlations were verified between sex and comorbidities and between age group and comorbidities.
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Z9 50
U1 0
U2 4
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PI BRASILIA
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J9 REV SOC BRAS MED TRO
JI Rev. Soc. Bras. Med. Trop.
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WC Parasitology; Tropical Medicine
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AU Kuroda, T
Shiraki, M
Tanaka, S
Shiraki, Y
Narusawa, K
Nakamura, T
AF Kuroda, Tatsuhiko
Shiraki, Masataka
Tanaka, Shiro
Shiraki, Yumiko
Narusawa, Ken-ichiro
Nakamura, Toshitaka
TI The Relationship Between Back Pain and Future Vertebral Fracture in

Postmenopausal Women
SO SPINE
LA English
DT Article
DE back pain; comorbidities; osteoporosis; osteoarthrosis; vertebral fracture risk
ID quality-of-life; diagnostic-criteria; risk-factors; association; health; prevalent; diseases; age
AB Study Design. Cross sectional and prospective observational study in Japanese postmenopausal women. Objective. The aim of the study was 2-fold. The first was to investigate what kind of comorbidities could be found in conjunction with back pain in Japanese postmenopausal women. The second was to investigate whether significant relationship between baseline back pain and future fracture exists or not. Summary of Background Data. Back pain has been reported to be associated with vertebral degeneration or vertebral fracture. However, there has been no available data that indicates the relationship between back pain and future fracture risks. Methods. The subjects who visited their practitioner were examined for their prevalent back pain or pains in other site. Bone mineral density, body height, body weight, and serum parameter were measured at baseline, and comorbidities were investigated by interview. Fragility fractures were also assessed at baseline and then followed up with 1- to 2-year intervals. The correlation between back pain and baseline characteristics was investigated by logistic regression analysis. The hazard ratio of back pain to future vertebral fracture was estimated by multivariate Cox regression analysis. Results. A total of 899 postmenopausal ambulatory women (62.5 +/- 10.3 years old) were enrolled and 81 subjects were dropped out from the study within 1 year. The remaining 818 postmenopausal women (62.1 +/- 10.3 years) were followed-up for 5.7 +/- 3.5 years. Compared to the group without pain, the group with back pain had significantly higher age, lower bone mineral densities at lumbar spine and hip, and higher number of prevalent vertebral fractures. The back pain was significantly associated with rheumatic arthritis (odds ratio [OR]: 2.01, $P < 0.05$), prevalent vertebral fracture (OR: 4.60, $P < 0.001$) and osteoporosis (OR: 2.14, $P < 0.001$). A total of 189 future fractures were observed, of which the most frequent was vertebral fractures (78.3%). The fact that baseline back pain was a significant risk factor for time-dependent vertebral fractures (hazard ratio: 1.62, 95% confidence interval: 1.16-2.27, $P = 0.005$) was demonstrated by the Cox hazards model after adjusting for traditional risk factors, such as age, bone mineral density, and prevalence of vertebral fractures. Conclusion. The data obtained in this study indicated that the back pain is significantly associated with osteoporosis and rheumatoid arthritis and that it can be useful predictor for future vertebral fracture risk in Japanese postmenopausal women in clinical settings.
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U1 0
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PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 0362-2436
EI 1528-1159
J9 SPINE
JI SPINE
PD AUG 15
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VL 34
IS 18
BP 1984
EP 1989
DI 10.1097/BRS.0b013e3181b0c97a
PG 6
WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
GA 490GA
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PT J
AU Giaginis, C
Giagini, A
Theocharis, S
AF Giaginis, Costas
Giagini, Athina
Theocharis, Stamatios
TI Peroxisome proliferator-activated receptor-γ (PPAR-γ) ligands as potential therapeutic agents to treat arthritis
SO PHARMACOLOGICAL RESEARCH
LA English
DT Review
DE PPAR-gamma ligands; Arthritis; Osteoarthritis; Rheumatoid arthritis; Inflammation
ID human synovial fibroblasts; nonsteroidal antiinflammatory drugs; nonpsychoactive cannabinoid acid; prostaglandin e-2 synthase-1; retinoid-x-receptor; nf-kappa-b; rheumatoid-arthritis; differential expression;

psoriatic-arthritis; arachidonate cascade
AB Peroxisome proliferator-activated receptor-gamma (PPAR-gamma) has already been considered as an attractive molecular target for the treatment of human metabolic disorders. Pleiotropic functions beyond this limit, such as anti-inflammatory and anti-proliferative effects against several pathological states, including atherosclerosis, osteoporosis and cancer, are currently being explored. Several natural and synthetic PPAR-gamma ligands have been the focus of extensive research effort as potent anti-inflammatory agents in diverse disease states. In the last decade, accumulative experimental evidence has further suggested that PPAR-gamma is involved in several inflammatory signaling pathways associated with arthritis. PPAR-gamma appears to be expressed by major cell populations in joints, such as chondrocytes, synoviocytes, fibroblasts and endothelial cells. PPAR-gamma ligands have also been shown to inhibit major inflammatory signaling pathways, reducing the synthesis of cartilage catabolic factors responsible for articular cartilage degradation in arthritis. in the present review the crucial role of PPAR-gamma ligands in arthritis and the underlying mechanisms participating in essential inflammatory signaling pathways are summarized. Taking into consideration the data so far, PPAR-gamma ligands seem to represent potential therapeutic agents in the aim to reduce mainly the inflammation implicated in arthritis. However, the precise molecular mechanisms through which PPAR-gamma ligands exert their actions are strongly recommended to be clarified, as both receptor-dependent and -independent actions were shown to be elicited. (C) 2009 Elsevier Ltd. All rights reserved.
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NR 88
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U2 16
PU ACADEMIC PRESS LTD- ELSEVIER SCIENCE LTD
PI LONDON
PA 24-28 OVAL RD, LONDON NW1 7DX, ENGLAND
SN 1043-6618
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J9 PHARMACOL RES
JI Pharmacol. Res.
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WC Pharmacology & Pharmacy
SC Pharmacology & Pharmacy
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ER

PT J
AU Jansen, NWD
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AF Jansen, Nathalie W. D.
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TI The Combination of the Biomarkers Urinary C-Terminal Telopeptide of Type II Collagen, Serum Cartilage Oligomeric Matrix Protein, and Serum Chondroitin Sulfate 846 Reflects Cartilage Damage in Hemophilic Arthropathy
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID early rheumatoid-arthritis; induced joint damage; radiographic progression; degradation-products; knee osteoarthritis; articular-cartilage; diurnal-variation; markers; fragments; bone
AB Objective. Hemophilic arthropathy, with characteristics of inflammatory (rheumatoid arthritis) and degenerative (osteoarthritis) joint damage, occurs at an early age, is associated with minor comorbidity, and is restricted to 3 pairs of large joints. The aim of this study was to determine whether commonly used serum and/or urinary biomarkers of cartilage and bone turnover for which assay kits are commercially available are associated with the severity of joint damage in patients with various degrees of hemophilic arthropathy and, thus, whether this disease could be useful in the identification and evaluation of such biomarkers. Methods. Blood and urine samples were collected from 36 patients with various degrees of hemophilic arthropathy. Commercially available assays for the most frequently investigated serum and urine biomarkers were performed: urinary C-terminal telopeptide of type I collagen (CTX-I), urinary CTX-II, serum CTX-I, serum CTX-II, serum cartilage oligomeric matrix protein (COMP), serum cartilage cleavage products C1,2C and C2C, and serum chondroitin sulfate 846 (CS-846). Radiographs of the ankles, knees, and elbows in all patients were evaluated for the degree of joint damage according to the Pettersson score, which is based on cartilage and

periarticular bone changes and is specific for hemophilic arthropathy. Results. Urinary CTX-II, serum C1,2C, and serum CS-846 levels correlated with the overall Pettersson score and with the joint space narrowing component. Regression analysis showed that combined indexes of different markers increased the degree of correlation for the combination of urinary CTX-II, serum COMP, and serum CS-846. Bone-specific markers (urinary/serum CTX-I and serum C1,2C) did not correlate with specific bone-related items of the Pettersson score (osteoporosis and erosions). Conclusion. These results support the idea that a combination of biomarkers relates significantly better to the severity of joint damage than do individual biomarkers. The combination of urinary CTX-II, serum COMP, and serum CS-846 correlated best with the degree of arthropathy. Because of its specific characteristics and restricted involvement, hemophilic arthropathy may prove useful in the screening of newly developed biomarkers of joint damage.
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Z9 78
U1 0
U2 7
PU WILEY

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SN 0004-3591
EI 1529-0131
J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
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PG 9
WC Rheumatology
SC Rheumatology
GA 394AC
UT WOS:000262416600034
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PT J
AU Shen, Y
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Jiang, SD
Jiang, LS
Dai, LY
AF Shen, Yun
Zhang, Zi-Ming
Jiang, Sheng-Dan
Jiang, Lei-Sheng
Dai, Li-Yang
TI Postmenopausal women with osteoarthritis and osteoporosis show different ultrastructural characteristics of trabecular bone of the femoral head
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
ID scanning-electron-microscopy; human cortical bone; cancellous bone; resorption lacunae; hip-joint; fracture; men; consequences; cartilage; estrogen
AB Background: Osteoporosis (OP) and osteoarthritis (OA) are public health diseases affecting the quality of life of the elderly, and bring about a heavy burden to the society and family of patients. It has been debated whether or not there is an inverse relationship between these two disorders. Methods: To compare the exact

difference in bone tissue structure between osteoporosis and osteoarthritis, we observed the ultrastructure of trabecular bone from the femoral heads using scanning electron microscopy (SEM) and transmission electron microscopy (TEM). A total of 15 femoral head specimens from postmenopausal women were collected during the procedures of total or hemi hip replacement (OP, n = 8; OA, n = 7). The morphologic structure of the trabecular bone, collagen fibers, resorption lacuna and osteoblasts were observed. Results: Under SEM, osteoporotic trabeculae appeared to be thinning, tapering, breaking and perforating. A number of resorption lacunae of various shapes were seen on the surface of the trabeculum. The collagen fibers of lacuna were resorbed. On occasion, naked granular bone crystals could be found. In the OA group, the trabecular bone looked thick with integrated structure. Reticular and granular new bone could be found. The trabeculum was covered by well-arranged collagen fibers around the resorption lacuna. In the OP group, under TEM, marginal collagen fibers were observed to be aligned loosely with enlarged spaces. A few inactive osteoblasts and no inflammatory cells were seen. In the OA group, the collagen fibers inside the trabeculum were arranged in a dense manner with many active osteoblasts and inflammatory cells infiltrating the matrix. Conclusion: We found significant differences in the trabecular bone, collagen fibers, lacunae and osteoblasts between postmenopausal women with OP and OA. These findings support the hypothesis that there is an inverse relationship between OP and OA.
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NR 35
TC 25
Z9 29
U1 1
U2 15
PU BMC
PI LONDON
PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
SN 1471-2474
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WC Orthopedics; Rheumatology
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AU Betancourt, MCC
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TI Dual energy x-ray absorptiometry analysis contributes to the prediction of hip osteoarthritis progression
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Article
ID bone-mineral density; subchondral bone; radiographic osteoarthritis; osteoporosis
AB Introduction To determine if structural bone parameters obtained from dual energy X-ray absorptiometry (DXA) contribute to the prediction of progression of hip osteoarthritis (OA) and to test if the difference between the most affected (OA) hip and the contralateral hip adds to this prediction. Methods The study group involves a prospective cohort of 189 patients that met the American College of Rheumatology (ARC) classification criteria for hip osteoarthritis. Progression was defined as 20% joint space narrowing or total hip replacement within a two years follow up. Software was developed to calculate geometrical aspects and bone mineral density (BMD) in different regions of interest of the proximal femur. Logistic regression was used to test if Kellgren and Lawrence (K-L) scores and DXA parameters can predict progression of OA. Models were compared using -2log likelihood tests, R-2 Nagelkerke and areas under the Receiver Operator

Characteristic curves, assessed using 10-fold cross validation. Results The model that included the DXA variables was significantly better in predicting hip OA progression than the model with K-L score of the affected side alone ($P < 0.01$). The addition of the differences in DXA parameters between the most affected and contralateral hip in the superior part of the femoral head, trochanteric and intertrochanteric area further improved the prediction of progression ($P < 0.05$). K-L score of the affected side was still the most significant single variable in the models. Conclusions DXA parameters can significantly contribute to the prediction of progression in patients with hip osteoarthritis. The analysis of the DXA differences between the hips of the patient represents a small but significant contribution to this prediction. These analyses show the importance of bone density changes in the etiology of OA.
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NR 25
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PU BMC
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SN 1478-6354
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J9 ARTHRITIS RES THER
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WC Rheumatology
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PT J

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Flatters, Sarah J. L.
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Mantyh, Patrick W.
TI New advances in musculoskeletal pain
SO BRAIN RESEARCH REVIEWS
LA English
DT Review
DE Bone healing; Osteoarthritis; Osteoporosis; Post-surgical pain; Fracture
ID nerve growth-factor; gene-related peptide; nonsteroidal antiinflammatory drugs; lumbar intervertebral disc; rat model; weight-bearing; immunoreactive nerves; skeletal pain; animal-model; secondary hyperalgesia
AB Non-malignant musculoskeletal pain is the most common clinical symptom that causes patients to seek medical attention and is a major cause of disability in the world. Musculoskeletal pain can arise from a variety of common conditions including osteoarthritis, rheumatoid arthritis, osteoporosis, surgery, low back pain and bone fracture. A major problem in designing new therapies to treat musculoskeletal pain is that the underlying mechanisms driving musculoskeletal pain are not well understood. This lack of knowledge is largely due to the scarcity of animal models that closely mirror the human condition which would allow the development of a mechanistic understanding and novel therapies to treat this pain. To begin to develop a mechanism-based understanding of the factors involved in generating musculoskeletal pain, in this review we present recent advances in preclinical models of osteoarthritis, post-surgical pain and bone fracture pain. The models discussed appear to offer an attractive platform for understanding the factors that drive this pain and the preclinical screening of novel therapies to treat musculoskeletal pain. Developing both an understanding of the mechanisms that drive persistent musculoskeletal pain and novel mechanism-based therapies to treat these unique pain states would address a major unmet clinical need and have significant clinical, economic and societal benefits. (C) 2008 Published by Elsevier B.V.
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TI A traditional Chinese medicine formula extracts stimulate proliferation and inhibit mineralization of human mesenchymal stem cells in vitro
SO JOURNAL OF ETHNOPHARMACOLOGY
LA English
DT Article
DE TCM extracts; Human mesenchymal stem cell; Cell proliferation; Osteogenic differentiation; Osteoarthritis
ID marrow stromal cells; subchondral bone; osteoblastic differentiation; osteogenic differentiation; inverse relationship; growth-factors; osteoarthritis; osteoporosis; degradation; progression
AB Aim of the study: To investigate the effects of a traditional Chinese medicine (TCM) formula extract, named as ZD-I, on the proliferation and osteogenic differentiation of human mesenchymal stem cells (hMSCs) in vitro. Materials and methods: When hMSCs cultivated in the basal medium with ZD-I, cell viability was assessed by MTT assay and cellular proliferation was assessed by SYBR green I assay. The effects of ZD-I on osteogenic differentiation of hMSCs were assessed by alkaline phosphatase (ALP) activity, mineralization assay and real-time RT-PCR. Results: ZD-I (0.78-100 mu g/ml) was non-cytotoxic. The 50% inhibitory concentration (IC50) of hMSCs was 200 mu g/ml. ZD-I (0.78-50 mu g/ml) stimulated the proliferation of hMSCs. ZD-I did not change ALP activity of hMSCs cultivated in osteogenic medium in the early stage (4 and 7 days), but ZD-I inhibited the mineralization of hMSCs through down-regulation of several osteogenic markers (e.g. osteocalcin, bone morphogenetic protein 2 and

osteopontin) in the late stage. Conclusions: ZD-I stimulate cellular proliferation and decrease the bone mineral deposition of hMSCs. These results suggest ZD-I may play an important therapeutic role in osteoarthritic patients by improving proliferative capacity of hMSCs and inhibiting the mineralization of hMSCs. (C) 2009 Elsevier Ireland Ltd. All rights reserved.
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TI Osteoarthritis associated with estrogen deficiency
SO ARTHRITIS RESEARCH & THERAPY
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DT Review
ID hormone-replacement-therapy; radiographic knee osteoarthritis; periarticular tibial osteophytes; human articular chondrocytes; alpha gene haplotype; bone-mineral density; receptor-alpha; skeletal-muscle; subchondral bone; postmenopausal women
AB Osteoarthritis (OA) affects all articular tissues and finally leads to joint failure. Although articular tissues have long been considered unresponsive to estrogens or their deficiency, there is now increasing evidence that estrogens influence the activity of joint tissues through complex molecular pathways that act at multiple levels. Indeed, we are only just beginning to understand the effects of estrogen deficiency on articular tissues during OA development and progression, as well as

on the association between OA and osteoporosis. Estrogen replacement therapy and current selective estrogen receptor modulators have mixed effectiveness in preserving and/or restoring joint tissue in OA. Thus, a better understanding of how estrogen acts on joints and other tissues in OA will aid the development of specific and safe estrogen ligands as novel therapeutic agents targeting the OA joint as a whole organ.
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TI Equivalent osteoblastic differentiation function of human mesenchymal stem cells from rheumatoid arthritis in comparison with osteoarthritis
SO RHEUMATOLOGY
LA English
DT Article
DE Rheumatoid arthritis; Human meschenchymal stem cells; Osteoblast; Bone formation
ID bone-mineral density; necrosis-factor-alpha; disease; destruction; marrow; osteoporosis; methotrexate; pathogenesis; metabolism; expression
AB Objective. To evaluate the osteoblastic differentiation of human mesenchymal stem cells (hMSCs) in patients with RA. Methods. Heparinized bone marrow aspirate was obtained from patients with OA and RA. Mononuclear cells were cultured for 2 weeks and a colony-forming assay was performed. The phenotype of cells was analysed by flow cytometry. Passage 2 cells were cultured with -glycerophosphate (bGP) in the control group and bGP, ascorbic acid and dexamethasone in the differentiation group. After 2 weeks, ALP staining and activity were performed. After 3 weeks, Alizarin Red S assay was performed. Total RNA was extracted from cells cultured for 2 and 3 weeks. Gene expression of bone formation factor was examined by real-time PCR. Results. The phenotype of cells was identical in both OA and RA and the content was thought to be hMSCs. The results of ALP activity and Alizarin Red S assay showed higher levels in the differentiation group for both OA and RA samples compared with the control group. The results of a colony-forming assay were identical in both OA and RA samples. Gene expression in the differentiation group was higher than in the control group in both OA and RA samples. There was no significant difference

between OA and RA samples in all experiments. Conclusion. The function of osteoblastic differentiation of hMSCs is similar between OA and RA.
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TI RESTORATION OF THE ROTATION CENTER IN MINIMALLY-INVASIVE TOTAL HIP REPLACEMENT
SO ACTA ORTOPEDICA BRASILEIRA
LA English
DT Article
DE Arthroplasty; replacement; hip; Minimally-invasive surgical procedures; Human
ID mini-incision; arthroplasty; complications; surgery
AB Objective: Our aim was to evaluate the challenges in obtaining a successful restoration of the rotation center as well as a good positioning of the acetabular component when using the minimally-invasive posterior approach for uncemented total hip replacement. Methods: In a comparative non-random prospective study, 64 adult patients underwent elective total hip arthroplasty using the minimally-invasive posterior approach performed by one single surgeon, All patients included in this study had a superior and lateral migration of the rotation center of the hip in comparison to the normal contralateral hip. Patients were excluded from the study if they presented the following: diagnosis of femoral neck fracture, displasic hip types 2, 3 and 4 (Crowe's classification), osteoarthritis of the contralateral hip. Of the 64 patients in the study, 39 had a radiographic pre-op acetabular size planning equal or less than 50 mm and 25 patients had a radiographic pre-op acetabular size planning equal or more than 52 mm. We considered a good result the following goals: acetabular bend between 35 and 50 degrees, acetabular size according to the pre-op estimative with full contact in the three zones of DeLee-Charnley, a lower medial and vertical positioning of the rotation center in comparison with the pre-op values and a final limb discrepancy lower than 10 mm. Results: A better restoration of the rotation center, as well as, excellent acetabular positioning was found in patients with smaller acetabular size (equal or less than 50), p=0, 04. We must draw attention to two risks when using the minimally-invasive posterior approach: a vertical acetabular position and a lateral position of the acetabular component increasing the risk of a poor contact in the zone 1 due to an insufficient reaming of the medial acetabular host bone. Conclusion: We propose standard surgical approaches in patients with larger anatomical measurements (acetabular planning size more than 50).
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J9 ACTA ORTOP BRAS
JI Acta Ortop. Bras.
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WC Orthopedics
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PT J
AU Gandhi, R
Salehi, M
Davey, JR
AF Gandhi, Rajiv
Salehi, Mohammadreza
Davey, J. Roderick
TI Cemented bipolar hemiarthroplasty in osteoporosis for failed femoral neck fixation
SO CANADIAN JOURNAL OF SURGERY
LA English
DT Article
ID total hip-arthroplasty; osteopetrosis; patient
AB Osteopetrosis refers to a group of disorders characterized by severe impairment of osteoclast-mediated bone resorption. Other terms that are often used for this disease are marble bone disease, which describes the solid radiographic appearance of the involved skeleton, and Albers-Schonberg disease, which refers to the milder, adult form of osteopetrosis of or autosomal dominant osteopetrosis type 2. The major types of osteopetrosis, include malignant (severe, infiantile, autosorrial recessive) osteopetrosis and benign (adult, autosomal dominant) osteopetrosis types I and II. A third form is a rare autosomal recessive type characterized by a carbonic anhydrase II deficiency; it is associated with renal tubular acidosis and cerebral calcification.(1) Radiographically, there is a generalized, symmetric Increase in bone mass with thickening of both cortical and trabecular bone. Despite the excess boric formation, osteopetrosis bone tends to be brittle in nature.(2) There is presently no cure for the disease, but bone marrow transplant is ail option for sonic children.(1) Osteoarthritis and periarticular nonunions are indications for joint replacement surgery in these patients. Most reports of hip-replacement surgery performed in this population focus on total hip arthroplasty (THA) for osteoarthritis.(3-4) One previous report discusses THA for femoral neck nonunion with retained hardware.(9) Most authors recommend the use of cemented femoral fixation and uncemented acetabular fixation. There are no reports of bipolar hemiarthroplasty in osteopetrosis patients. We describe a case of cemented bipolar hemiarthroplasty as a salvage option for failed femoral neck fixation with retained hardware, despite end-stage acetabular cartilage degeneration.
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CR ASHBY ME, 1992, CLIN ORTHOP RELAT R, V0, P214
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NR 11
TC 4
Z9 6
U1 0
U2 0
PU CMA-CANADIAN MEDICAL ASSOC
PI OTTAWA
PA 1867 ALTA VISTA DR, OTTAWA, ONTARIO K1G 5W8, CANADA
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JI Can. J. Surg.
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WC Surgery
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ER

PT J
AU Nikodem, A
Bedzinski, R
Scigala, K
Dragan, S
AF Nikodem, A.
Bedzinski, R.
Scigala, K.
Dragan, S.
TI Mechanical and structural anisotropy of human cancellous femur bone
SO JOURNAL OF VIBROENGINEERING
LA English
DT Article
DE osteoporosis; osteoarthritis
AB The function of bone tissue, which is a very complex material, is due to the structure and mechanical properties. According to Wolff's law, the permanent loaded hip is well-motivated and adapts his inner and outer architecture to the environment. The body mass is transferred through the femur bone, where the trabeculae aligns along stress trajectories. This theorem has the important corollary that affects architecture of cancellous bone and determines its mechanical properties. The main goal of this paper was to find correlation between mechanical and structural properties of healthy and pathological trabecular femur bone (osteoporosis and osteoarthritis).
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VONADLER CP, 2000, BONE DIS MACROSCOPIC, V0, P0

NR 7
TC 4
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U1 0
U2 10
PU JVE INT LTD
PI KAUNAS
PA GELIU RATAS 15 A, KAUNAS, LT-50282, LITHUANIA
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J9 J VIBROENG
JI J. Vibroeng.
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WC Engineering, Biomedical; Engineering, Mechanical
SC Engineering
GA 501GJ
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ER

PT J
AU Darrah, TH
Prutsman-Pfeiffer, JJ
Poreda, RJ
Campbell, ME
Hauschka, PV
Hannigan, RE
AF Darrah, Thomas H.
Prutsman-Pfeiffer, Jennifer J.
Poreda, Robert J.
Campbell, M. Ellen
Hauschka, Peter V.
Hannigan, Robyn E.
TI Incorporation of excess gadolinium into human bone from medical contrast agents
SO METALLOMICS
LA English

DT Article
ID nephrogenic systemic fibrosis; blood lead levels; gd-eob-dtpa; safety; gadodiamide; tissue; retention; transmetalation; mineralization; resorption
AB We find anomalously high gadolinium (Gd) concentrations in the femoral head bones of patients exposed to chelated Gd, commonly used as a contrast agent for medical imaging. Gd is introduced in chelated form to protect patients from exposure to toxic free Gd3+, a calcium antagonist which disrupts cellular processes. Recent studies suggest Gd chelates break down in vivo, and Gd accumulation in tissue is linked to medical conditions such as nephrogenic systemic fibrosis (NSF), acute kidney failure, and in some cases death. We measure Gd and other rare earth element (REE) concentrations in 35 femoral heads by solution based ICP-MS. Gd concentrations in patients with documented exposure to Gd-based contrast agents (n = 13: Gd DTPA-BMA (Omniscan) n = 6; Gd HP-DO3A (Prohance) n = 5; unknown type n = 4) are significantly higher ($p < 0.001$) than the control group (n = 17). We use our control group to establish the 'natural' background level of Gd in human bone (cortical 95% CI: 0.023, 0.041 nmol/g; trabecular 95% CI: 0.054, 0.107 nmol/g). A control group outlier reveals the occurrence of individuals with high concentrations of all REEs, including Gd. Because of this, we calculate Gd anomalies from the concentrations of adjacent REEs and normalize to the control group mean to isolate Gd input from contrast agents. Normalized Gd anomalies, (Gd/Gd*)(N), for exposed patients range up to 4800 times the 'natural' level (95% CI: 124, 460). Our data confirm that Gd, introduced in chelated form, incorporates into bone and is retained for more than 8 years. No difference was observed in bone Gd concentrations and anomalies between patients dosed with Gd DTPA-BMA (Omniscan; n = 6) and Gd HP-DO3A (Prohance; n = 5). Osteoporotic fracture patients exposed to Gd have significantly lower Gd concentrations than osteoarthritis patients ($p < 0.001$). This indicates different mechanisms of metal incorporation and/or retention in osteoporotic bone tissues, and may signal an increased risk of endogenous Gd release for patients with increased rates of bone resorption (e. g. osteoporosis patients and menopausal, pregnant, and lactating women) who are exposed to Gd-based contrast agents.
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NR 66
TC 247
Z9 280
U1 1
U2 59
PU ROYAL SOC CHEMISTRY
PI CAMBRIDGE
PA THOMAS GRAHAM HOUSE, SCIENCE PARK, MILTON RD, CAMBRIDGE CB4 0WF, CAMBS, ENGLAND
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JI Metallomics
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WC Biochemistry & Molecular Biology
SC Biochemistry & Molecular Biology
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PT J
AU Badlani, N
Oshima, Y
Healey, R
Coutts, R
Amiel, D
AF Badlani, Neil
Oshima, Yasushi
Healey, Rob

Coutts, Richard
Amiel, David
TI Use of Bone Morphogenic Protein-7 as a Treatment for Osteoarthritis
SO CLINICAL ORTHOPAEDICS AND RELATED RESEARCH
LA English
DT Article
ID human osteogenic protein-1; human articular chondrocytes; rabbit knee; cartilage; repair; model; expression; defects; op-1; proteoglycan
AB Osteoarthritis is a degenerative disorder resulting from breakdown of articular cartilage. Previous work has shown bone morphogenic protein-7 has a potential protective effect on cartilage during the development of osteoarthritis. The purpose of this study was to determine whether bone morphogenic protein-7 could decrease the amount of cartilage degradation in preexisting osteoarthritis. The rabbit ACLT model was used as a model of osteoarthritis. Bone morphogenic protein-7 was delivered via Alzet osmotic pump to the joint 4 weeks after anterior cruciate ligament transection; thus cartilage injury was preexisting. The experimental group showed less cartilage degradation than the controls, with an average Outerbridge score of 1.9 versus 2.6 for the controls. Histomorphometry showed a trend toward less cartilage degradation in the bone morphogenic protein-7 group when compared with controls. Semiquantitative real-time polymerase chain reaction showed a considerably greater expression of aggrecan in the bone morphogenic protein-7-treated cartilage when compared with controls and less expression of matrix metalloproteinase-3 and matrix metalloproteinase-13, important catabolic mediators. The synovial tissue of the experimental group also showed considerably less expression of matrix metalloproteinase-3, matrix metalloproteinase-13, and aggrecanase. These results indicate bone morphogenic protein-7 may reduce degradation of articular cartilage in osteoarthritis.
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CR Allen RT, 2004, OSTEOARTHR CARTILAGE, V12, P917, DOI 10.1016/j.joca.2004.08.003
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Yoshioka M, 1996, OSTEOARTHR CARTILAGE, V4, P87, DOI 10.1016/S1063-4584(05)80318-8
NR 27
TC 30
Z9 36
U1 0
U2 6
PU LIPPINCOTT WILLIAMS & WILKINS
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JI Clin. Orthop. Rel. Res.
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WC Orthopedics; Surgery
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ER

PT J
AU Yoshimura, N
Muraki, S
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Mabuchi, A
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AF Yoshimura, N.
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Oka, H.
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Yosihda, M.
Kawaguchi, H.
Nakamura, K.
Akune, T.
TI Epidemiology of lumbar osteoporosis and osteoarthritis and their causal relationship-is osteoarthritis a predictor for osteoporosis or vice versa?: The Miyama study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Causal relationship; Disc space narrowing; Incidence; Population-based cohort; Prevalence; Risk factors
ID rural japanese community; bone-mineral density; disc degeneration; inverse relationship; radiographic osteoarthritis; postmenopausal women; knee osteoarthritis; vertebral fracture; risk; spine
AB In a 10-year follow-up of a population-based cohort of Japanese subjects, incidences of and causal relationships between osteoporosis (OP) and osteoarthritis

(OA) at the lumbar spine were clarified. OP might reduce the risk of subsequent OA at the spine in women, but not in men. The aim of this study is to clarify the contribution of osteoarthritis (OA) to osteoporosis (OP) and vice versa. A population-based, epidemiological study was conducted in a Japanese rural community. From 1,543 participants aged 40-79 years, 200 men and 200 women were selected and followed up for 10 years. Bone mineral density measurements were repeated after 3, 7, and 10 years, and X-rays were repeated after 10 years. The incidence of lumbar OP per 10,000 person-years for persons in their 40s, 50s, 60s, and 70s was 0, 0, 109.5, and 151.1 for men and 124.2, 384.0, 227.3, and 239.5 for women, respectively. The cumulative incidence of lumbar OA over 10 years aged 40-79 years was 25.8% in men and 45.2% in women. Cox's proportional hazards model showed no significant relationship between the presence of lumbar OA at the baseline and incidence of lumbar and femoral neck OP in both genders. A significant relationship was demonstrated between the presence of lumbar OP, not femoral neck OP, at the baseline and cumulative incidence of lumbar OA in women (odds ratio, 0.20; 95% confidence interval, 0.05-0.80; P = 0.02). OP in women appears to reduce the future incidence of OA at the lumbar spine.
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NR 39
TC 25
Z9 27
U1 0
U2 10

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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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IS 6
BP 999
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 443WQ
UT WOS:000265941900018
PM 18989721
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PT J
AU Soliman, AM
AF Soliman, Ahmed M.
TI ACTIVE CIRCULATOR CIRCUITS USING OA, CCII, CFOA AND DVCC
SO JOURNAL OF CIRCUITS SYSTEMS AND COMPUTERS
LA English
DT Article
DE Active circuits; op amps; CCII; CFOA; DVCC; active circulators
ID current conveyor; op-amp; realization; amplifiers
AB A review of the two types of circulators using Operational Amplifiers (OA) with detailed comparison is given. Novel active circulator circuits using Current Conveyors (CCII) and Current Feedback Operational Amplifiers (CFOA) and Differential Voltage Current Conveyor (DVCC) are introduced. The proposed CCII circulator circuit uses six CCIIs and three floating resistors. Two different circulator types using the CFOA are given. A circulator circuit which uses three DVCCs and has the advantage of using three grounded resistors is also introduced. Spice simulation results using 0.5 mu m CMOS transistors are included to support the theoretical analysis and demonstrate comparisons among the different types of circulators.
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NR 16
TC 11
Z9 11
U1 0
U2 6
PU WORLD SCIENTIFIC PUBL CO PTE LTD
PI SINGAPORE
PA 5 TOH TUCK LINK, SINGAPORE 596224, SINGAPORE
SN 0218-1266
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J9 J CIRCUIT SYST COMP
JI J. Circuits Syst. Comput.
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WC Computer Science, Hardware & Architecture; Engineering, Electrical & Electronic
SC Computer Science; Engineering
GA 453MH
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AF Aktekin, Lale Akbulut
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Oksuz, Ergun
Keskin, Dilek
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TI A comparison of four different HRQoL generic questionnaire in five different patient groups
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE Health-related quality of life; Generic; QoL-5; NHP; SF-6D; VAS
ID quality-of-life; nottingham health profile; rheumatoid-arthritis; ankylosing-spondylitis; osteoarthritis; validation; knee
AB Most of musculoskeletal diseases involve pain and reduced physical functioning. Recognition of the coexistence of more than one musculoskeletal disease is important because they are relatively common and has a substantial impact on health-related quality of life (HRQoL). Our aim was to compare the results of four generic QoL questionnaires-QoL-5, Nottingham Health Profile (NHP), Short Form (SF)-6D, and Visual Analogue Scale (VAS)-in five different patient groups. Two hundred and one patients representing five different disease groups (knee osteoarthritis, osteoporosis, back pain, rheumatoid arthritis and ankylosing spondylitis), randomly selected through the Ankara Numune Education and Research Hospital Physical Medicine and Rehabilitation Outpatient Clinic, were included in the study. Scores indicating low QoL for each of the five diseases compared are reported. Patients in each disease group stated high disability. No strong correlation between any of the scales could be determined, and NHP was identified as the only scale able to differentiate between the diseases. Many

instruments are available for measuring HRQoL. The QoL-5, NHP, SF-6D, and VAS are four commonly used generic (i.e., not disease-specific) measures for quantifying HRQoL in patients with musculoskeletal disorders. Most studies have focused on only one musculoskeletal disease, but comorbidity of musculoskeletal disorders is common. We emphasize in this study the effect of multiple musculoskeletal diseases on HRQoL.
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NR 15
TC 6
Z9 6
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PA TIERGARTENSTRASSE 17, D-69121 HEIDELBERG, GERMANY
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AF Breijawi, N.
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TI Bone Mineral Density and Vitamin D Status in Female and Male Patients with Osteoarthritis of the Knee or Hip
SO EUROPEAN SURGICAL RESEARCH
LA English
DT Article
DE Osteoporosis; Vitamin D; Osteoarthritis; Bone mineral density
ID randomized controlled-trial; osteoporotic fractures; d inadequacy; postmenopausal women; elderly-women; calcium supplementation; secondary hyperparathyroidism; radiographic osteoarthritis; vertebral deformity; d deficiency
AB Objective: Osteoporosis (OP), osteoarthritis (OA) and vitamin D deficiency are

age-related disorders. We investigated the association between bone mineral density (BMD), vitamin D and OA in patients undergoing total hip or knee replacements. Method: In total, 82 women and 35 men with mean ages of 70 and 68 years, respectively, were recruited for the study. The BMD of the lumbar spine and the proximal femur were measured by dual-energy X-ray absorptiometry. The vitamin D status was assessed by 25(OH) D levels, with a cut-off of <= 30 ng.ml(-1). Results: In total, 84.7% of the patients had a vitamin D deficiency; 20% of the men had a T-score below -2.5; 23.2% of the women were affected by OP. Furthermore, 37.1 and 42.7% of the male and female patients, respectively, had osteopenia. We concluded that OP and osteopenia were not due to immobility. Conclusion: The average age, rather than the frequency of OP, in cases with OA of the hip or knee differed from the general population. The incidence of low BMD in the male cohort was notably higher than expected. We detected a high prevalence of vitamin D deficiency, independent of the BMD. Copyright (c) 2008 S. Karger AG, Basel

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NR 58
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Z9 28
U1 0
U2 5
PU KARGER
PI BASEL
PA ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND
SN 0014-312X
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J9 EUR SURG RES
JI Eur. Surg. Res.
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AF Wong, A. K. O.
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TI Quantitative analysis of subchondral sclerosis of the tibia by bone texture parameters in knee radiographs: site-specific relationships with joint space width
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Severe osteoarthritis; Bone texture parameters; Radiograph; Subchondral bone; Location-specific joint space width
ID trabecular bone; articular-cartilage; axial alignment; osteoarthritis; density; histomorphometry; osteoporosis; progression; thickness; disease
AB Objectives: To determine the ability of radiographic bone texture (BTX) parameters to quantify subchondral tibia sclerosis and to examine clinical relevance for assessing osteoarthritis (OA) progression. We examined the relationship between BTX parameters and each of (1) location-specific joint space width (JSW)

[JSW(x)] and minimum JSW (mJSW) of the affected compartment, and (2) knee alignment (KA) angle in knee radiographs of participants undergoing total knee arthroplasty (TKA). Design: Digitized fixed-flexion knee radiographs were analyzed for run-length and topological BTX parameters in a subchondral region using an algorithm. Medial JSW(x) was computed at x = 0.200, 0.225, 0.250 and 0.275 according to a coordinate system defined by anatomic landmarks. mJSW was determined for medial and lateral compartment lesions. KA angles were determined from radiographs using an anatomic landmark-guided algorithm. JSW measures and the magnitude of knee malalignment were each correlated with BTX parameters. Reproducibility of BTX parameters was measured by root-mean square coefficients of variation (RMSCV%). Results: Run-length BTX parameters were highly reproducible (RMSCV% < 1%) while topological parameters showed poorer reproducibility (>5%). In TKA participants (17 women, 13 men; age: 66 +/- 9 years; body mass index (BMI): 31 +/- 6 kg m(-2); WOMAC: 41.5 +/- 16.1; Kellgren-Lawrence score mode: 4), reduced trabecular spacing (Tb.Sp) and increased free ends (FE) were correlated with decreased JSW after accounting for BMI, gender and knee malalignment. These relationships were dependent on site of JSW measurement. Conclusion: High reproducibility in quantifying bone sclerosis using Tb.Sp and its significant relationship with JSW demonstrated potential for assessing OA progression. Increased trabecular FE and reduced porosity observed with smaller JSW suggest collapsing subchondral bone or trabecular plate perforation in advanced knee OA. (C) 2009 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 52
TC 22
Z9 23
U1 0
U2 2
PU ELSEVIER SCI LTD
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
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WC Orthopedics; Rheumatology
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PT J
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AF Gerdesmeyer, Ludger
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TI The Minimally Invasive Anterolateral Approach Combined with Hip Onlay Resurfacing
SO OPERATIVE ORTHOPADIE UND TRAUMATOLOGIE
LA English
DT Article
DE Minimally invasive; Hip; Approach; Onlay; Prosthesis; Osteoarthritis; Resurfacing
ID arthroplasty
AB Minimally invasive anterolateral approach in hip resurfacing with complete preservation of muscular integrity. Primary or secondary osteoarthritis of the hip. Approach: - None. Onlay implant: - Females > 55 years with osteoporosis. - Males > 60 years with osteoporosis. - Severe varus deformity (CCD [collodiaphyseal] angle < 100A degrees). - History of metal allergy. - Clinically relevant renal insufficiency. - Radiologic appearance of avascular necrosis stage 3 and 4 according to Ficat. - Femoral head cysts > 1 cm in diameter. Supine position with possible overextension of the hip, longitudinal incision along the intermuscular septum and blunt intermuscular dissection between gluteus medius and tensor fasciae latae, partial resection of the anterior capsule and anterior dislocation of the hip with complete proximal release of the capsule. Dislocation of the femoral head and dorsal positioning, reaming of the acetabulum to implant the cementless acetabular component, exposition and reaming of the femoral head in extension/adduction and external rotation, implantation of the cemented onlay endoprosthesis. Prophylaxis of thromboembolism and periarticular ossification. Rehabilitation with weight bearing as tolerated starting on the day of surgery,

ergometer training from day 4 after surgery. 31 patients with osteoarthritis underwent onlay resurfacing via a minimally invasive approach. The Harris Hip Score improved from 43.9 to 97.1 at 12 months after surgery. Adverse events such as fracture, dislocation, nerve or muscle lesions did not occur, and clinically significant thromboembolism or infection was not observed.
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NR 9
TC 6
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U1 0
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PU URBAN & VOGEL
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PA NEUMARKTER STRASSE 43, D-81673 MUNICH, GERMANY
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AF Giner, Merce
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TI RANKL/OPG in primary cultures of osteoblasts from post-menopausal women. Differences between osteoporotic hip fractures and osteoarthritis
SO JOURNAL OF STEROID BIOCHEMISTRY AND MOLECULAR BIOLOGY
LA English
DT Article
DE Human osteoblast culture; Osteoporosis; OPG/RANKL; 17-Beta-estradiol; 1,25-Dihydroxyvitamin D
ID kappa-b ligand; osteoclastogenesis inhibitory factor; messenger-rna levels; estrogen-receptor; vitamin-d; regulates osteoclast; cancellous bone; femoral-neck; osteoprotegerin production; differentiation factor
AB The OPG/RANKL/RANK system is important in the balance between bone formation and resorption. We used primary human osteoblasts (hOBs) cells to examine the impact of 17-beta-estradiol (E2) or/and 1,25-dihydroxyvitamin D (1,25D) in OPG/RANKL system in 28 post-menopausal (PM) women; (a) with hip fracture (OP) or (b) with osteoarthritis (OA). The hOB from OP patients proliferated slower during the first stage, than the OA women (31.5 +/- 2.6 and 21.4 +/- 1.3 days, respectively, $p < 0.05$). The OP group secreted significantly higher OPG protein levels than the OA women (10.1 +/- 2.6 and 4.4 +/- 0.8 pmol/L,

respectively, p < 0.05). The 1,25D and 1,25D+E2 induce an increase in RANKL and RANKL/OPG mRNA expression in OP patients above 200% (p < 0.05). HOBS from the osteoporotic hip initially proliferate slower but after reaching the first cellular confluence, the proliferation rate is equal in both groups. Furthermore, hOBs from hips with OP present a higher protein secretion of OPG, and higher RANKL and RANKL/OPG expression ratio in response to 1,25D and 1,25D+E2, than hOBs from OA women. All this could suggest that the greater bone loss that characterizes OP patients can be mediated due to differences in the secretion and expression of the RANKL/OPG system in response to different stimuli. (C) 2008 Elsevier Ltd. All rights reserved.
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NR 35
TC 34
Z9 48
U1 0
U2 7
PU PERGAMON-ELSEVIER SCIENCE LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND
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J9 J STEROID BIOCHEM
JI J. Steroid Biochem. Mol. Biol.
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WC Biochemistry & Molecular Biology; Endocrinology & Metabolism
SC Biochemistry & Molecular Biology; Endocrinology & Metabolism

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AU Papadakis, M
Papadokostakis, G
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AF Papadakis, Michael
Papadokostakis, Georgios
Stergiopoulos, Konstantinos
Kampanis, Nikos
Katonis, Pavlos
TI Lumbar lordosis in osteoporosis and in osteoarthritis
SO EUROPEAN SPINE JOURNAL
LA English
DT Article
DE Lumbar lordosis; Osteoarthritis; Osteoporosis
ID low-back-pain; spinal curvatures; physical-activity; inverse relationship; pelvic inclination; women; adults; population; posture; epidemiology
AB The curvature of the lumbar spine and the risk of developing either osteoporosis (OP) or osteoarthritis (OA) are influenced by many common factors. The aim of this study is to determine whether lumbar lordosis is different between patients with either disease and healthy persons. A cross-sectional, blinded, controlled design was implemented. One hundred and twelve postmenopausal women were evaluated for bone mineral density as well as undergoing spinal radiography. Lordosis measurement was performed with Cobb's method. The sample was divided in four groups: patients with OP (n = 34, L1-L5 = 40.7A degrees, L1-S1 = 54.1A degrees), patients with OA (n = 29, L1-L5 = 38A degrees, L1-S1 = 52.3A degrees), patients with both diseases (n = 20, L1-L5 = 41.8A degrees, L1-S1 = 52.3A degrees) and controls (n = 29, L1-L5 = 38.6A degrees, L1-S1 = 51.8A degrees). For all participants age, height, weight, body mass index, physical activity level and basal metabolic rate were measured and recorded. The results revealed that although the four groups have significant constitutional differences, lumbar lordosis was comparable between them. The reasons for the lack of association are discussed.
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NR 48
TC 5
Z9 6
U1 0
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PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
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DI 10.1007/s00586-008-0846-z
PG 6
WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
GA 441RP
UT WOS:000265788500005
PM 19089464
DA 2026-02-10
ER

PT J
AU Timmer, MHM
Samson, MM
Monninkhof, EM
De Ree, B
Verhaar, HJJ
AF Timmer, Monique H. M.
Samson, Monique M.
Monninkhof, Evelyn M.
De Ree, Ben
Verhaar, Harald J. J.
TI Predicting osteoporosis in patients with a low-energy fracture
SO ARCHIVES OF GERONTOLOGY AND GERIATRICS
LA English
DT Article
DE Osteoporosis; Falls; Risk factors; Prediction rule; Low-energy fracture
ID risk-factors; tai-chi; falls; metaanalysis; impairment; balance; women; men
AB The multicenter cross-sectional study was designed to develop a simple rule to predict the risk of osteoporosis in the patients with a low-energy fracture (LEF). Furthermore, we aimed to investigate the incidence of fall-related risk factors. We included 206 patients with age over 50 and an LEF at the emergency room. All patients underwent osteoporosis and fall risk assessment and dual-energy X-ray absorptiometry (DEXA) of both hips and the lumbar spine. The incidence of osteoporosis in our study population was 41% (84 cases of 206). Fifty-four percent of the patients reported at least one fall-related risk factor. Mobility problems occurred in 31% and osteoarthritis in 19%. The final osteoporosis prediction rule included age, positive family history, immobility, and low-body weight. The discrimination of the rule after correction for over-optimism was good (receiver operating curve (ROC) = ROC area = 0.79). This simple rule may be helpful to select patients who need further osteoporosis assessment. (C) 2008 Elsevier Ireland Ltd. All rights reserved.
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NR 23
TC 5
Z9 5

U1 0
U2 0
PU ELSEVIER IRELAND LTD
PI CLARE
PA ELSEVIER HOUSE, BROOKVALE PLAZA, EAST PARK SHANNON, CO, CLARE, 00000, IRELAND
SN 0167-4943
EI 1872-6976
J9 ARCH GERONTOL GERIAT
JI Arch. Gerontol. Geriatr.
PD JUL-AUG 15
PY 2009
VL 49
IS 1
BP E32
EP E35
DI 10.1016/j.archger.2008.07.014
PG 4
WC Geriatrics & Gerontology
SC Geriatrics & Gerontology
GA V18VJ
UT WOS:000208032000006
PM 18835048
DA 2026-02-10
ER

PT J
AU Loeser, RF
Im, HJ
Richardson, B
Lu, Q
Chubinskaya, S
AF Loeser, R. F.
Im, H-J.
Richardson, B.
Lu, Q.
Chubinskaya, S.
TI Methylation of the OP-1 promoter: potential role in the age-related decline in OP-1 expression in cartilage
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Chondrocyte; Aging; Growth factors; Osteoarthritis
ID growth-factor-i; osteogenic protein-1; dna methylation; osteoarthritic

chondrocytes
AB Objective: An age-related decline in chondrocyte production of osteogenic protein-1 (OP-1) (Bone Morphogenetic Protein-7) may contribute to cartilage loss in osteoarthritis, This study was designed to determine it increased methylation of the OP-1 promoter might serve as a mechanism for the age-related decline in OP-1 expression. Methods: Human articular chondrocytes were isolated from cartilage obtained after death from tissue donors (ages 19-86 years) without a known history of arthritis. DNA was obtained from isolated chondrocytes in primary culture and analyzed for OP-1 promoter methylation by polymerase chain reaction (PCR) after bisulfite treatment. Cultured cells were treated with the DNA methyltransferase inhibitor 5-azacytidine and OP-1 production was measured in the media by enzyme-linked immunosorbent assay (ELISA). RNA was isolated to measure expression of insulin-like growth factor-1 (IGF-1), the IGF-1 receptor (IGF-1 R), aggrecan, and OP-1 by real-time PCR. Results: Methylation of the OP-1 promoter was detected in chondrocytes isolated from tissue obtained from older adults and there was a positive correlation between age and OP-1 methylation status (n = 22, R(2) = 0.277, P = 0.014). Inhibition of methylation in cultured cells with 5-azacytidine increased chondrocyte production of OP-1 protein and increased the expression of the IGF-1, the IGF-1R, aggrecan, and OP-1 genes but not GAPDH. Conclusion: Age-related methylation of the OP-1 promoter may contribute to a decrease in OP-1 production in cartilage and a decrease in expression of OP-1 responsive genes such as IGF-1, the IGF-1 R, and aggrecan. (C) 2008 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 17
TC 47
Z9 58
U1 0
U2 5
PU W B SAUNDERS CO LTD
PI LONDON
PA 32 JAMESTOWN RD, LONDON NW1 7BY, ENGLAND
SN 1063-4584
EI
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD APR 15
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VL 17
IS 4
BP 513
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WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 430FU
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ER

PT J
AU Mori, M
Shooshtary, NA
Tohyama, T
Maekawa, S
AF Mori, Michiyasu
Shooshtary, Navid Afzal
Tohyama, Takami
Maekawa, Sadamichi
TI Nuclear Quadrupole Resonance Frequency in Multilayered Cuprates
SO JOURNAL OF THE PHYSICAL SOCIETY OF JAPAN
LA English
DT Article
DE nuclear quadrupole resonance; multilayered cuprates; exact diagonalization; apical site; Madelung potential
ID induced structural-changes; electric-field gradients; local hole distribution; crystal-structure; single-crystals; charge-transfer; superconductor; temperature; oxygen; diffraction
AB The Cu-63 nuclear quadrupole resonance (NQR) frequency nu(Q) in the multilayered cuprates is calculated in the cluster model by the exact diagonalization method. The charge imbalance between the outer CuO2 plane (OP) with apical oxygen O-A and the inner plane (IP) without OA in three-layered Tl2Ba2Ca2Cu3O10 is estimated by comparing Our results with the experimental nu(Q). In Tl-based cuprates with more than three layers, we predict a large enhancement of the splitting of nu(Q) between OP and IP by taking into account the reduction in bond length between Cu and O-A and the resulting increase in charge transfer energy. Our results show that the NQR frequency is a useful quantity for estimating the charge imbalance in the multilayered cuprates.
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FU Ministry of Education, Culture, Sports, Science and Technology; Grants-in-Aid for Scientific Research [19204035] Funding Source: KAKEN
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NR 38
TC 1
Z9 1
U1 0
U2 1
PU PHYSICAL SOC JAPAN
PI TOKYO
PA YUSHIMA URBAN BUILDING 5F, 2-31-22 YUSHIMA, BUNKYO-KU, TOKYO, 113-0034, JAPAN
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J9 J PHYS SOC JPN

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PD DEC 15
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IS 12
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PG 4
WC Physics, Multidisciplinary
SC Physics
GA 535QN
UT WOS:000272985600009
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ER

PT J
AU Hunter, DJ
Gerstenfeld, L
Bishop, G
Davis, AD
Mason, ZD
Einhorn, TA
Maciewicz, RA
Newham, P
Foster, M
Jackson, S
Morgan, EF
AF Hunter, David J.
Gerstenfeld, Lou
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Mason, Zach D.
Einhorn, Tom A.
Maciewicz, Rose A.
Newham, Pete
Foster, Martyn
Jackson, Sonya
Morgan, Elise F.
TI Bone marrow lesions from osteoarthritis knees are characterized by sclerotic bone that is less well mineralized
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Article

ID subchondral bone; cancellous bone; trabecular bone; mechanical-property; biochemical markers; femoral-head; osteoporosis; association; cartilage; turnover
AB Introduction Although the presence of bone marrow lesions (BMLs) on magnetic resonance images is strongly associated with osteoarthritis progression and pain, the underlying pathology is not well established. The aim of the present study was to evaluate the architecture of subchondral bone in regions with and without BMLs from the same individual using bone histomorphometry. Methods Postmenopausal female subjects (n = 6, age 48 to 90 years) with predominantly medial compartment osteoarthritis and on a waiting list for total knee replacement were recruited. To identify the location of the BMLs, subjects had a magnetic resonance imaging scan performed on their study knee prior to total knee replacement using a GE 1.5 T scanner with a dedicated extremity coil. An axial map of the tibial plateau was made, delineating the precise location of the BML. After surgical removal of the tibial plateau, the BML was localized using the axial map from the magnetic resonance image and the lesion excised along with a comparably sized bone specimen adjacent to the BML and from the contralateral compartment without a BML. Cores were imaged via microcomputed tomography, and the bone volume fraction and tissue mineral density were calculated for each core. In addition, the thickness of the subchondral plate was measured, and the following quantitative metrics of trabecular structure were calculated for the subchondral trabecular bone in each core: trabecular number, thickness, and spacing, structure model index, connectivity density, and degree of anisotropy. We computed the mean and standard deviation for Teach parameter, and the unaffected bone from the medial tibial plateau and the bone from the lateral tibial plateau were compared with the affected BML region in the medial tibial plateau. Results Cores from the lesion area displayed increased bone volume fraction but reduced tissue mineral density. The samples from the subchondral trabecular lesion area exhibited increased trabecular thickness and were also markedly more plate-like than the bone in the other three locations, as evidenced by the lower value of the structural model index. Other differences in structure that were noted were increased trabecular spacing and a trend towards decreased trabecular number in the cores from the medial location as compared with the contralateral location. Conclusions Our preliminary data localize specific changes in bone mineralization, remodeling and defects within BMLs features that are adjacent to the subchondral plate. These BMLs appear to be sclerotic compared with unaffected regions from the same individual based on the increased bone volume fraction and increased trabecular thickness. The mineral density in these lesions, however, is reduced and may render this area to be mechanically compromised, and thus susceptible to attrition.
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FU NCRR NIH HHS [S10 RR021072] Funding Source: Medline; NIAMS NIH HHS [U01 AR050900, U01 AR50900-02] Funding Source: Medline
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NR 36
TC 162
Z9 187
U1 1
U2 16
PU BMC
PI LONDON
PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
SN 1478-6354
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J9 ARTHRITIS RES THER
JI Arthritis Res. Ther.
PD JUN 15
PY 2009
VL 11
IS 1
BP
EP
DI 10.1186/ar2601
PG 9
WC Rheumatology
SC Rheumatology
GA 424JM
UT WOS:000264563000034
PM 19171047
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PT J
AU Day, HD
Eckstrom, E
Sullivan, GM
AF Day, Hollis D.
Eckstrom, Elizabeth
Sullivan, Gail M.
TI Update in Geriatric Medicine
SO JOURNAL OF GENERAL INTERNAL MEDICINE
LA English
DT Article
DE geriatrics; dementia screening; gait speed; hip arthritis; osteoporosis; constipation
ID health-status; older-adults; pain relief; gait speed; hip; osteoarthritis; constipation; persistence; validation; injection
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NR 18
TC 0
Z9 1
U1 0
U2 0
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0884-8734
EI
J9 J GEN INTERN MED
JI J. Gen. Intern. Med.
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WC Health Care Sciences & Services; Medicine, General & Internal
SC Health Care Sciences & Services; General & Internal Medicine
GA 407QL
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PT J
AU Ahn, S
Song, R
AF Ahn, Sukhee
Song, Rhayun
TI Bone mineral density and perceived menopausal symptoms: factors influencing low back pain in postmenopausal women
SO JOURNAL OF ADVANCED NURSING
LA English
DT Article
DE activity; bone mineral density; Korea; low back pain; menopause; nursing;

symptoms
ID musculoskeletal pain; risk-factors; osteoporosis; population; country
AB Bone mineral density and perceived menopausal symptoms: factors influencing low back pain in postmenopausal women. This paper is a report of a study of the relationships between the factors influencing low back pain in postmenopausal women (i.e. menopausal symptoms, bone mineral density, duration of menopause, hormonal therapy, obesity, inactivity during leisure time, parity, osteoarthritis and drinking coffee). Previous studies have shown that low back pain in postmenopausal women is associated with bone mineral density, menopausal symptoms and lifestyle factors, yet the factors influencing low back pain are not clear and vary with ethnicity. A survey was conducted with postmenopausal women (n = 134) in Korea in 2006. Bone mineral density in the lumbar spine, back pain status, menopausal symptoms and health habits were assessed. Participants' mean age was 59 years. About 70% experienced back pain on more than 1 day during the week prior to the survey and 35% suffered back pain daily. Women with back pain reported more severe menopausal symptoms than those without back pain. Based on bone mineral density scores, 26.9% of the women were considered to be at risk of osteoporosis. However, there was no association between back pain status and fracture risk status. Based on a multiple logistic regression model, menopausal symptoms, drinking coffee and inactivity during leisure time were statistically significant influencing factors for low back pain in this sample. The prevalence of low back pain in postmenopausal women should be recognized in association with menopausal symptoms and health habits. Further research is needed to develop interventions for the management of low back pain in postmenopausal women.
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U1 2
U2 12
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PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0309-2402
EI 1365-2648
J9 J ADV NURS
JI J. Adv. Nurs.
PD JUN 15
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WC Nursing
SC Nursing
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PT J
AU Woo, J
Leung, J
Lau, E
AF Woo, J.
Leung, J.
Lau, E.
TI Prevalence and correlates of musculoskeletal pain in Chinese elderly and the impact on 4-year physical function and quality of life
SO PUBLIC HEALTH
LA English
DT Article
DE Musculoskeletal pain; Elderly; Physical function; Quality of life
ID older disabled women; hong-kong-chinese; dwelling senior-citizens; knee osteoarthritis; frailty index; social-status; population; disability; community; health
AB Objective: To examine the prevalence, correlates and prospective impact of musculoskeletal pain on physical and psychological function in a population health survey of elderly Chinese men and women. Study design: Cohort study. Methods: Four thousand men and women, aged 65 years and over, living in the community

in Hong Kong took part in this study. A questionnaire to determine demographics, socio-economic status, medical history. smoking, alcohol intake and level of physical activity was administered by an interviewer. Participants were asked about the presence of pain in the back, neck, hip and knee in the past 12 months. They were re-interviewed after 4 years of follow-up to document physical performance measures, psychological function and occurrence of falls, fractures and mortality. Results: Overall, back pain was most prevalent (48%), followed by knee (31%), neck (22.5%) and hip (8.9%) pain; the values was nearly twice as high in women compared with men for all sites. The presence of pain was not correlated with age, but was associated with various measures of socio-economic status as well as comorbidities. Baseline prevalence of pain was related to physical performance and quality-of-life measures, and fracture incidence after 4 years of follow-up. Conclusion: Musculoskeletal pain is prevalent among elderly men and women, being much higher in the latter, giving rise to considerable functional and psychological impairments. Osteoporosis and osteoarthritis are likely to be the main underlying causes. The condition may be considered part of the frailty syndrome, and in this context, prevention and management represent major public health challenges. (C) 2009 The Royal Society for Public Health. Published by Elsevier Ltd. All rights reserved.
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NR 37
TC 83
Z9 100
U1 0
U2 39
PU W B SAUNDERS CO LTD
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EI
J9 PUBLIC HEALTH
JI Public Health
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WC Public, Environmental & Occupational Health
SC Public, Environmental & Occupational Health
GA 504RJ
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ER

PT J
AU Muehleman, C
Williams, J
Bareither, ML
AF Muehleman, C.
Williams, J.
Bareither, M. L.
TI A Radiologic and Histologic Study of the Os Peroneum: Prevalence, Morphology, and Relationship to Degenerative Joint Disease of the Foot and Ankle in a Cadaveric Sample
SO CLINICAL ANATOMY
LA English
DT Article
DE sesamoid; osteoarthritis; cuboid tuberosity; 1st metatarsophalangeal joint; fibularis longus
ID fibrocartilage; osteoarthritis; cartilage; ligaments; tendons; bones
AB The present study investigated the prevalence of an os peroneum (OP, a sesamoid bone) in a cadaveric sample and its relationship to the shape of the cuboid tuberosity, and cartilage degeneration at the cuboid tuberosity and in regional joints within the foot (first metatarsophalangeal and calcaneocuboid) and ankle. The fibularis longus tendon of 33 embalmed human cadavers (mean age 81 years) were obtained from the anatomy laboratory. Nineteen of 64 tendons (30%) displayed an OP both radiographically and histologically. The os peronei ranged in size from small spicules to prominent masses: mean area 2.48 mm(2) (left) and 2.70

mm(2) (right). Histologically, the os peronei were cancellous bone, the largest occupying most of the tendon at the point of contact with the cuboid tuberosity. Fibrocartilage was present at their borders, merging with dense regular fibrous tissue and peritenon. The talocrural, calcaneocuboid, and first metatarsophalangeal joints were examined for cartilage integrity and osteophytes based on an earlier suggestion that there may be an association between degenerative joint disease and endochondral bone formation. There was no statistical correlation between presence of an OP with any of the following parameters: age, gender, body size, cartilage degeneration, or osteophytes within any of the joints examined. Therefore, the presence of an OP does not appear to be associated with increased endochondral ossification or degenerative joint disease. This study does not preclude the possibility that sesamoid bone formation may be associated with biomechanical functions within the foot; thus, future studies may be warranted. Clin. Anat. 22:747754, 2009. (C) 2009 Wiley-Liss, Inc.

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NR 24
TC 21
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U2 4
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PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0897-3806
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AU Dal Grande, E
Gill, T
Wyatt, L
Chittleborough, CR
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AF Dal Grande, Eleonora
Gill, Tiffany
Wyatt, Lydia
Chittleborough, Catherine R.
Phillips, Patrick J.
Taylor, Anne W.
TI Population attributable risk (PAR) of overweight and obesity on chronic diseases: South Australian representative, cross-sectional data, 2004-2006
SO OBESITY RESEARCH & CLINICAL PRACTICE
LA English
DT Article
DE Population attributable risk; Overweight; Obesity; Chronic conditions
ID coronary-heart-disease; life-style; body-mass; bone loss; prevalence; osteoarthritis; epidemiology; determinants; asthma; trends
AB Background: To determine the contribution of overweight and obesity to five chronic conditions using the population attributable risk (PAR) statistic. Method: Self-reported data were collected in Australia using a representative, ongoing monthly risk factor surveillance system using computer assisted telephone interviewing (CATI) for the period 2004-2006 (n = 15,261). The PAR, adjusted for various demographic and health-retated risk factors, was used to determine the contribution of overweight and obesity to diabetes, asthma, cardiovascular disease (CVD), arthritis and osteoporosis for people aged 18 years and over. Results: In total, 19.0% of South Australians aged 18 years and over were obese, and 36.0% were overweight. The PAR of overweight and obesity was highest among those with diabetes (17.3% and 28.4%). After adjusting for demographic and risk factors, overweight and obesity had a significantly high PAR for diabetes (11.3% and 23.1%), asthma (4.0% and 10.3%) and arthritis (6.7% and 8.1%). The unadjusted PAR of overweight and obesity for CVD was significant (10.8% and 11.7%) but was reduced when controlled for other factors. The PAR of overweight and obesity was significant for osteoporosis but the association was protective. Conclusions: The use of PAR contributes to the understanding of how overweight and obesity are related to various chronic conditions however the size of this association depends on the chronic disease and other socio-demographic and health-related risk factors that may or may not be modifiable. The information provides evidence of the

association of overweight and obesity with chronic disease and the potential for reducing the burden of chronic disease by addressing the obesity epidemic. Crown Copyright (C) 2009 Published by Elsevier Ltd on behalf of Asian Oceanian Association for the Study of Obesity. All rights reserved.
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NR 42
TC 14
Z9 15
U1 0
U2 3
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1871-403X
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J9 OBES RES CLIN PRACT
JI Obes. Res. Clin. Pract.
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BP 159
EP 168
DI 10.1016/j.orcp.2009.03.004
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WC Endocrinology & Metabolism; Nutrition & Dietetics
SC Endocrinology & Metabolism; Nutrition & Dietetics
GA 480AZ

UT WOS:000268705300005
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ER

PT J
AU Burner, TW
Rosenthal, AK
AF Burner, Todd W.
Rosenthal, Ann K.
TI Diabetes and rheumatic diseases
SO CURRENT OPINION IN RHEUMATOLOGY
LA English
DT Review
DE connective tissue disease; diabetes; diffuse idiopathic skeletal hyperostosis; osteoarthritis; tendinopathy
ID idiopathic skeletal hyperostosis; human parathyroid-hormone; charcot arthropathy; oral glucosamine; nigella-sativa; bone mass; insulin; osteoarthritis; tendinitis; combination
AB Purpose of review This review summarizes recent advances in the field of diabetes and rheumatic disease. These conditions exert a significant healthcare burden on our society and much remains to be learned regarding their pathophysiology and treatment. Recent findings We summarize new insights into diabetes and its association with osteoarthritis, rheumatoid arthritis, carpal tunnel syndrome, osteoporosis, diffuse idiopathic skeletal hyperostosis, crystalline arthropathy, neuropathic arthropathy, and tendinopathy. Diabetes has major effects on connective tissues, which have significant impact on both the development and outcome of these diseases of cartilage, bone, ligament, and tendon. An improved understanding of the mechanisms through which diabetes alters connective tissue metabolism should lead to better preventive and therapeutic interventions. Summary Incremental progress has been made in understanding the interactions between diabetes and common musculoskeletal syndromes. Although this review highlights exciting areas of future interest, more work in this field is certainly warranted.
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10.1093/rheumatology/kem033
NR 40
TC 73
Z9 91
U1 0
U2 9
PU LIPPINCOTT WILLIAMS & WILKINS
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PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 1040-8711
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J9 CURR OPIN RHEUMATOL
JI Curr. Opin. Rheumatol.
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WC Rheumatology
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GA 392XT
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AU Alm, JJ
Mäkinen, TJ
Lankinen, P
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AF Alm, Jessica J.
Makinen, Tatu J.
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Vahlberg, Tero
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TI Female patients with low systemic BMD are prone to bone loss in Gruen zone 7

after cementless total hip arthroplasty A 2-year DXA follow-up of 39 patients
SO ACTA ORTHOPAEDICA
LA English
DT Article
ID x-ray absorptiometry; mineral density; femoral stem; osteoporosis; osteoarthritis; replacement; implant; prevention; osteopenia; prostheses
AB Background and purpose Factors that lead to periprosthetic bone loss following total hip arthroplasty (THA) may not only depend on biomechanical implant-related factors, but also on various patient-related factors. We investigated the association between early changes in periprosthetic bone mineral density (BMD) and patient-related factors. Patients and methods 39 female patients underwent cementless THA (ABG II) with ceramic-ceramic bearing surfaces. Peri-prosthetic BMD in the proximal femur was determined with DXA after surgery and at 3, 6, 12, and 24 months. 27 patient-related factors were analyzed for their value in prediction of periprosthetic bone loss. Results Total periprosthetic BMD was temporarily reduced by 3.7% at 3 months ($p < 0.001$), by 3.8% at 6 months ($p < 0.01$), and by 2.6% at 12 months ($p < 0.01$), but recovered thereafter up to 24 months. Preoperative systemic osteopenia and osteoporosis, but not the local BMD of the operated hip, was predictive of bone loss in Gruen zone 7 ($p = 0.04$), which was the only region with a statistically significant decrease in BMD (23%, $p < 0.001$) at 24 months. Preoperative serum markers of bone turnover predicted the early temporary changes of periprosthetic BMD. The other patient-related factors failed to show any association with the periprosthetic BMD changes. Interpretation Female patients with low systemic BMD show greater bone loss in Gruen zone 7 after cementless THA than patients with normal BMD. Systemic DXA screening for osteoporosis in postmenopausal patients before THA could be used to identify patients in need of prophylactic anti-resorptive therapy.
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NR 26
TC 69
Z9 80
U1 0
U2 2
PU TAYLOR & FRANCIS LTD
PI ABINGDON
PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND

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WC Orthopedics
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PT J
AU Zhang, ZM
Jiang, LS
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Dai, LY
AF Zhang, Zi-Ming
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Jiang, Sheng-Dan
Dai, Li-Yang
TI Osteogenic Potential and Responsiveness to Leptin of Mesenchymal Stem Cells between Postmenopausal Women with Osteoarthritis and Osteoporosis
SO JOURNAL OF ORTHOPAEDIC RESEARCH
LA English
DT Article
DE mesenchymal stem cells; bone formation; osteoarthritis; osteoporosis; leptin
ID bone-mineral density; articular-cartilage; subchondral bone; progenitor cells; trabecular bone; marrow; hip; osteoprotegerin; osteoblasts; metabolism
AB The aim of this study was to compare the osteogenic potential and responsiveness to leptin of mesenchymal stem cells (MSCs) from bone marrow between postmenopausal women with osteoarthritis (OA) and osteoporosis(OP). MSCs of the proximal femur from OA and OP donors were cultured tinder control and different experimental mediums. After verifying the availability of primary cells, their osteogenic potential and responsiveness to leptin were compared between two groups. Similar patterns of cell growth were shown in both OA and OP groups.

However, after the sixth passage, the viability of undifferentiated cells decreased more in OP than in OA donors. Under the same osteogenic supplements condition, the mRNA expression of osteogenesis-specific genes, osteocalcin (OC) and alkaline phosphatase (ALP) were higher in OA group. Comparison of bone matrix mineralization was parallel to that of mRNA expression. The level of bone-specific ALP (BAP) was higher in cells from donors with OA, whereas osteoprotegerin (OPG) was higher in OP group. This difference in BAP expression proved to be insignificant after the administration of leptin. Although leptin upregulated the expression of OPG, a significant difference still existed between OA and OP. In conclusion, differential osteogenic potential and responsiveness to leptin of MSCs were noted between postmenopausal women with OA and OP. Differential biological behavior of MSCs seems to be partly related to the different distribution of bone mass between OA and OP populations. (C) 2009 Orthopaedic Research Society. Published by Wiley Periodicals. Inc. J Orthop Res 27:1067-1073, 2009
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NR 43
TC 32
Z9 38
U1 0
U2 9
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PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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J9 J ORTHOP RES

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WC Orthopedics
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PT J
AU Salehi, I
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Khazaeli, Shabnam
Hatami, Parta
Malekpour, Mahdi
TI Bone density in patients with chondromalacia patella
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE Bone density; Chondromalacia patella; Dual energy X-ray absorptiometry; DXA
ID osteoarthritis
AB Chondromalacia of the patella is the most common cause of anterior knee pain in young women. The etiology of the disease is not well-understood but the initial lesion is a disorganization of collagenous structures. Since the disease is proposed to be due to generalized constitutional disturbance, we postulated that bony structures could also be involved. To investigate this hypothesis we measured the bone density of 286 patients with the diagnosis of chondromalacia of the patella during a 4-year period using dual energy X-ray absorptiometry (DXA) method. We found a significant number of patients having low bone densities. This problem was more pronounced in men and in younger age groups. We suggest base-line bone density evaluation in all patients, treatment of osteopenia or osteoporosis in select patients and regular follow-ups using DXA.
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TC 2
Z9 2
U1 0
U2 6
PU SPRINGER HEIDELBERG
PI HEIDELBERG
PA TIERGARTENSTRASSE 17, D-69121 HEIDELBERG, GERMANY
SN 0172-8172
EI
J9 RHEUMATOL INT
JI Rheumatol. Int.
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BP 1137
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DI 10.1007/s00296-009-1149-3
PG 2
WC Rheumatology
SC Rheumatology
GA 602EP
UT WOS:000278121600025
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PT J
AU Tozlovanu, M
Pfohl-Leszkowicz, A
AF Tozlovanu, Mariana
Pfohl-Leszkowicz, Annie

TI Ochratoxin A in Roasted Coffee from French Supermarkets and Transfer in Coffee Beverages: Comparison of Analysis Methods
SO TOXINS
LA English
DT Article
DE ochratoxin; coffee; beverage; immunoaffinity column; CEN 14132; CEN 15141
ID immunoaffinity column cleanup; green coffee; liquid-chromatography; bladder-cancer; beans; toxicity; risk; polymorphisms; performance; consumption
AB The OTA content of 30 roasted coffees purchased in French supermarkets was evaluated by two validated different methods: one using immunoaffinity column (IAC) clean-up after alkaline extraction; the second using toluene extraction under acidic conditions. OTA recoveries (0.5 to 5 mu g/kg) ranged from 16-49% with the alkaline extraction method and 55-60% with the acidic method. OTA recoveries from prepared beverages were similar with all methods (75-80%). All samples containing OTA ranged from trace (<LOQ) to 11.9 mu g/kg. About 20 to 140% of OTA passed through the beverages. Recoveries of over 100% of OTA in beverages were due to three types of interferences: (i) formation of open-ring OTA (OP-OA) during alkaline extraction, (ii) isomerization of OTA during roasting, and (iii) presence of the nonchlorinated analogue OTB. The first two types of interference generate OTA derivatives that are not recognized by OTA antibodies, while OTB cross-reacts with OTA-antibodies. These analytical problems will seriously impact the amount of OTA detected, especially at the levels close to the limits from the EU legislation. Underestimation of OTA could be highly dangerous for health.
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NR 52
TC 69
Z9 73
U1 2
U2 25
PU MDPI
PI BASEL
PA ST ALBAN-ANLAGE 66, CH-4052 BASEL, SWITZERLAND
SN
EI 2072-6651
J9 TOXINS
JI Toxins
PD AUG 15
PY 2010
VL 2
IS 8
BP 1928
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DI 10.3390/toxins2081928
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WC Food Science & Technology; Toxicology
SC Food Science & Technology; Toxicology
GA V24UN
UT WOS:000208435400001
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PT J
AU Sode, M
Burghardt, AJ
Kazakia, GJ
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Majumdar, S
AF Sode, Miki
Burghardt, Andrew J.
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Link, Thomas M.
Majumdar, Sharmila
TI Regional variations of gender-specific and age-related differences in trabecular bone structure of the distal radius and tibia
SO BONE
LA English
DT Article
DE Regional variations; Trabecular structure; HR-pQCT; Age; Tibia; Radius
ID quantitative computed-tomography; finite-element-analysis; postmenopausal women; estrogen deficiency; ultradistal radius; mineral density; stance phase; femoral-neck; hr-pqct; microarchitecture
AB Regional variation in trabecular structure across axial sections is often obscured by the conventional global analysis, which takes an average value for the entire trabecular compartment. The objective of this study is to characterize spatial variability in trabecular structure within a cross-section at the distal radius and tibia, and gender and age effects using in vivo high-resolution peripheral quantitative computed tomography (HR-pQCT). HR-pQCT images of the distal radius and tibia were acquired from 146 healthy individuals aged 20-78 years. Trabecular bone volume fraction (BV/TV), number (Tb.N), thickness (Tb.Th), separation (Tb.Sp), and heterogeneity (Tb.1/N.SD) were obtained in a total of 11 regions-the entire trabecular compartment (the global means), inner, outer, and eight defined subregions. Regional variations were examined with respect to the global means, and compared between women and men, and between young (20-29 years old) and elderly (65-79 years old) adults. Substantial regional variations in trabecular bone structure at the distal radius and tibia were revealed (e.g. BV/TV varied -40% to + 57% and -59% to + 100% of the global means, respectively, for elderly women). The inner-lateral (IL) subregion had low BV/TV, Tb.N, and Tb.Th, and low Tb.Sp and Tb.1/N.SD at both sites; the opposite was true in the outer-anterior (OA) subregion at the distal radius and the outer-medial (OM) and -posterior (OP) subregions at the distal tibia. Gender differences were most pronounced in the inner-anterior (IA) subregion compared to the other regions or the global mean differences at both sites. Trabecular structure associated with age and differed

between young and elderly adults predominantly in the inner-posterior (IP) subregion at the distal radius and in the IL and IA subregions at the distal tibia: on the other hand, it remained unchanged in the OA subregion at the distal radius and in the OM subregion at the distal tibia for both women and men. This study demonstrated that not only the conventional global analysis can obscure regional differences, but also assuming bone status from that of smaller subregion may introduce a confounding sampling error. Therefore, a combined approach of investigating the entire region, each subregion, and the cortical compartment may offer more complete information. (C) 2010 Elsevier Inc. All rights reserved.
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NR 61
TC 63
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U1 0
U2 11
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA
SN 8756-3282
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J9 BONE
JI Bone
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 607EF
UT WOS:000278481000022
PM 20188877
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PT J
AU Lamers, E
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Winnubst, Louis A. J. A.
Gardeniers, Han J. G. E.
Jansen, John A.
TI The influence of nanoscale grooved substrates on osteoblast behavior and extracellular matrix deposition
SO BIOMATERIALS
LA English
DT Article
DE Nanotopography; Osteoblast; Interface; Calcification; Cell morphology; Gene expression
ID osteoprogenitor response; contact guidance; in-vitro; cells; adhesion; alignment; titanium; topography; bone; nanotopography
AB To fight bone diseases characterized by poor bone quality like osteoporosis and osteoarthritis, as well as in reconstructive surgery, there is a need for a new generation of implantable biomaterials. It is envisioned that implant surfaces can be improved by mimicking the natural extracellular matrix of bone tissue, which is highly a organized nano-composite. In this study we aimed to get a better understanding of osteoblast response to nanometric grooved substrates varying in height, width and spacing. A throughput screening biochip was created using electron beam lithography. Subsequently, uniform large-scale nanogrooved substrates were created using laser interference lithography and reactive ion etching. Results showed that osteoblasts were responsive to nanopatterns down to 75 nm in width and 33 nm in depth. SEM and TEM studies showed that an osteoblast-driven calcium phosphate (CaP) mineralization was observed to follow the surface pattern dimensions. Strikingly, aligned mineralization was found on even smaller nanopatterns of 50 nm in width and 17 nm in depth. A single cell based approach for real time PCR demonstrated that osteoblast-specific gene expression was increased on nanopatterns relative to a smooth control. The results indicate that nanogrooves can be a very promising tool to direct the bone response at the interface between an implant and the bone tissue. (C) 2010 Elsevier Ltd. All rights reserved.
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NR 41
TC 197
Z9 215
U1 2
U2 108
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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J9 BIOMATERIALS
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WC Engineering, Biomedical; Materials Science, Biomaterials
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GA 576EB
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PT J
AU Cooper, C
Steinbuch, M
Stevenson, R
Miday, R
Watts, N
AF Cooper, C.
Steinbuch, M.
Stevenson, R.
Miday, R.
Watts, N. B.
TI The epidemiology of osteonecrosis: findings from the GPRD and THIN databases in the UK
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Avascular necrosis; Epidemiology; Osteonecrosis; Risk factors
ID systemic-lupus-erythematosus; avascular necrosis; symptomatic osteonecrosis; oral corticosteroids; risk; bisphosphonates; validation; jaws; fractures
AB We conducted a case-control study to examine osteonecrosis (ON) incidence, patient characteristics, and selected potential risk factors using two health record databases in the UK. Statistically significant risk factors for ON included systemic corticosteroid use, hospitalization, referral or specialist visit, bone fracture, any cancer, osteoporosis, connective tissue disease, and osteoarthritis. The purpose of this case-control study was to examine the incidence of osteonecrosis (ON), patient characteristics, and selected potential risk factors for ON using two health record databases in the UK: the General Practice Research Database and The Health Improvement Network. ON cases (n = 792) were identified from 1989 to 2003 and

individually matched (age, sex, and medical practice) up to six controls (n = 4,660) with no record of ON. Possible risk factors were considered for inclusion based on a review of published literature. Annual incidence rates were computed, and a multivariable logistic regression model was derived to evaluate selected risk factors. ON of the hip represented the majority of cases (75.9%). Statistically significant risk factors for ON were systemic corticosteroid use in the previous 2 years, hospitalization, referral or specialist visit, bone fracture, any cancer, osteoporosis, connective tissue disease, and osteoarthritis within the past 5 years. Only 4.4% of ON cases were exposed to bisphosphonates within the previous 2 years. This study provides further perspective on the descriptive epidemiology of ON. Studies utilizing more recent data may further elucidate the understanding of ON key predictors.
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NR 21
TC 101
Z9 123
U1 0
U2 4
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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WC Endocrinology & Metabolism
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PT J
AU Link, TM
AF Link, Thomas Marc

TI The Founder's Lecture 2009: advances in imaging of osteoporosis and osteoarthritis
SO SKELETAL RADIOLOGY
LA English
DT Review
DE Osteoporosis; Osteoarthritis; Quantitative imaging; MRI; CT
ID trabecular bone-structure; in-vivo assessment; subchondral insufficiency fracture; quantitative computed-tomography; reveals structural implications; t2 relaxation-times; high-resolution mri; vertebral fractures; articular-cartilage; knee cartilage
AB The objective of this review article is to provide an update on new developments in imaging of osteoporosis and osteoarthritis over the past three decades. A literature review is presented that summarizes the highlights in the development of bone mineral density measurements, bone structure imaging, and vertebral fracture assessment in osteoporosis as well as MR-based semiquantitative assessment of osteoarthritis and quantitative cartilage matrix imaging. This review focuses on techniques that have impacted patient management and therapeutic decision making or that potentially will affect patient care in the near future. Results of pertinent studies are presented and used for illustration. In summary, novel developments have significantly impacted imaging of osteoporosis and osteoarthritis over the past three decades.
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NR 103
TC 12
Z9 13
U1 0
U2 8
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0364-2348
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J9 SKELETAL RADIOL
JI Skeletal Radiol.
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WC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
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PT J
AU Panzer, S
Esch, U
Abdulazim, AN
Augat, P
AF Panzer, Stephanie
Esch, Ulrich
Abdulazim, Ahmed Nabil
Augat, Peter
TI Herniation pits and cystic-appearing lesions at the anterior femoral neck: an anatomical study by MSCT and AμCT
SO SKELETAL RADIOLOGY
LA English
DT Article
DE Spiral computed tomography; Bone cysts; Ganglion cyst; Femur neck; Hip joint
ID mr arthrographic findings; femoroacetabular impingement; degenerative arthritis; intraosseous ganglion; bone; osteoarthritis; prevalence; appearance; cam; hip
AB To determine distinguishing features between herniation pits (HPs) and other cystic-appearing lesions at the anterior femoral neck in multi-slice computed tomography (MSCT) and micro-computed tomography (microCT) examinations. Institutional review board approval was obtained to examine 37 proximal femora of 23 cadaveric specimens (mean age available in 19 cadavers, 83 years; range 68-100 years; 9 female, 8 male, 6 unknown). All 37 femora were investigated by MSCT. 23 femora, which revealed cystic-appearing lesions at the anterior femoral neck in MSCT examinations, were additionally examined by microCT. Cystic-appearing lesions were categorized by their location, sclerotic margin, demarcation and shape in MSCT with assessment of inter-observer agreement. Detailed cortical and trabecular properties were evaluated in microCT examinations. There were seven

HPs in three femora. There were a number of abnormalities potentially imitating HPs, including focal osteoporosis (13 in 13 femora), degenerative changes (5 in 4 femora) and trabecular restructuring (5 in 4 femora) at the anterior femoral neck. HPs were differentiated on the basis of their subchondral/subcortical location, completely surrounding sclerosis, clear demarcation and round-to-oval shape in MSCT. Because of their location and their microscopic appearance, HPs seem to resemble intra-osseous ganglia at the anterior femoral neck. HPs have to be differentiated from other cystic appearing lesions at the anterior femoral neck to avoid overestimation of their incidence in the context of diagnosis of femoroacetabular impingement.
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10.1016/S1063-4584(03)00075-X
NR 27
TC 13
Z9 15
U1 0
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PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
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WC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
SC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
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AU Daoussis, D
Andonopoulos, AP
Liossis, SNC

AF Daoussis, Dimitrios
Andonopoulos, Andrew P.
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TI Wnt Pathway and IL-17: Novel Regulators of Joint Remodeling in Rheumatic Diseases. Looking Beyond the RANK-RANKL-OPG Axis
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE Wnt; joint remodeling; bone; rheumatic diseases; rheumatoid arthritis; IL-17; Th17; osteoblastogenesis; osteoclastogenesis
ID collagen-induced arthritis; frizzled-related protein-1; ldl-receptor-related-protein-5 lrp5 gene; high bone mass; articular-cartilage; interleukin 17; t-cells; hip osteoarthritis; missense mutations; receptor activator
AB Objectives: During the last decade research has focused on the RANK-RANKL-OPG (Receptor Activator of Nuclear factor KappaB-Receptor Activator of Nuclear factor KappaB Ligand-Osteoprotegerin) pathway that is currently considered the final common route to bone and joint remodeling. The potential role of novel additional mediators has been highlighted by several reports. This review focuses on the recent information about the pathophysiology of the Wingless (Wnt) pathway and interleukin-17 (IL-17) in relation of their role in bone and joint remodeling. Methods: An extensive internet search was performed (PubMed) from 1998 and onward using the following keywords: Wnt, bone remodeling, bone, rheumatic diseases, rheumatoid arthritis, IL-17, Th17, osteoblastogenesis, and osteoclastogenesis. Results: Several members of the Wnt pathway play an important role in bone remodeling. Recent experimental data indicate a key role for Dickkopf-1, a soluble inhibitor of the Wnt pathway, in bone remodeling. Increased Dickkopf-1 levels are linked to bone resorption and decreased levels to new bone formation. Low-density lipoprotein receptor-related protein-5, the main receptor that mediates Wnt signaling, plays a critical role in bone mass regulation. Gain-of-function mutations of lipoprotein receptor-related protein-5 cause high bone mass phenotypes, whereas loss-of-function mutations are linked to severe osteoporosis. IL-17 is a proinflammatory, cytokine that is produced by a recently described T-cell subset, known as Th17 cells. Evidence suggests that IL-17 is a critical mediator of joint destruction in animal models of arthritis. IL-17 blockade has beneficial effects on murine arthritis, a fact that points to the direction of this cytokine as a potential therapeutic target in human inflammatory arthritides as well. Conclusions: The available data suggest that mediators in these 2 biologic systems are critical in joint remodeling and may be appropriate targets in the treatment of bone and joint abnormalities that characterize a variety of inflammatory arthritides and bone diseases. (C) 2010 Elsevier Inc. All rights reserved. Semin Arthritis Rheum 39:369-383
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TI COMPREHENSIVE REHABILITATION OF PATIENTS WITH RHEUMATIC DISEASES

IN A WARM CLIMATE: A LITERATURE REVIEW
SO JOURNAL OF REHABILITATION MEDICINE
LA English
DT Review
DE arthritis; climate; exercise therapy; physical therapy; rehabilitation; rheumatic disease; tropical climate
ID health-assessment questionnaire; ankylosing-spondylitis; preliminary definition; team care; arthritis; bath; improvement; efficacy; weather; index
AB Objective: To present the evidence for the efficacy of comprehensive rehabilitation in a warm climate of patients with a wide variety of rheumatic diseases. Methods: A systematic review of the literature was undertaken, searching in PubMed, Cinahl, Pedro, SweMed and Embase from 1970 to 2010, and using the GRADE (Grading of Recommendations, Assessment, Development and Evaluation system) criteria. Results: Six studies met the inclusion criteria. For patients with rheumatoid arthritis, moderate evidence was found for reduction of disease activity, pain, fatigue, and global disease impact. The evidence was also moderate that comprehensive rehabilitation in a warm climate did not improve fitness or reduce activity limitation beyond levels reached by rehabilitation in Scandinavia. Among patients with ankylosing spondylitis, low evidence was found for reduction of disease activity, pain, joint range of motion, activity limitation, and global disease impact. In groups with mixed rheumatic diagnoses, low evidence was found for reduction of pain, activity limitation, global disease impact and improved health-related quality of life. No studies on psoriatic arthritis, osteoarthritis, fibromyalgia or osteoporosis were found. Conclusion: Well-designed studies to validate and improve the low-to-moderate evidence found for the efficacy of comprehensive rehabilitation in a warm climate among patients with inflammatory rheumatic disease are greatly needed.
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TC 7
Z9 9
U1 0
U2 15
PU FOUNDATION REHABILITATION INFORMATION
PI UPPSALA
PA TRADGARDSGATAN 14, UPPSALA, SE-753 09, SWEDEN
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J9 J REHABIL MED
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WC Rehabilitation; Sport Sciences
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PT J
AU Holstein, JH
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TI Hyperhomocysteinemia is not associated with reduced bone quality in humans with hip osteoarthritis
SO CLINICAL CHEMISTRY AND LABORATORY MEDICINE
LA English
DT Article
DE biomechanics; bone mineral density; B vitamins; histomorphometry; hyperhomocysteinemia
ID collagen cross-linking; high-aged subjects; mineral density; homocysteine concentrations; folic-acid; osteoporotic fractures; mechanical-property; plasma homocysteine; cancellous bone; clinical-use
AB Background: Recent clinical and animal studies suggest that increased serum homocysteine (HCY) concentrations may be a risk factor for osteoporosis. In vitro studies showed that increasing HCY concentrations stimulate the activity of human osteoclasts. However, there is no data demonstrating that circulating HCY is related to structural and biomechanical properties of human bones. This study investigated the relationship between morphological as well as biomechanical bone properties and HCY serum concentrations in humans suffering from hip osteoarthritis (OA). Methods: Fasting blood samples and femoral heads were obtained from 94 males and females who underwent hip arthroplasty due to OA. Bones were assessed by dual energy X-ray absorptiometry (DXA), biomechanical testing (indentation method), and histomorphometry. Blood was collected for measurement of HCY, folate, vitamin B6, and vitamin B12. Subjects were classified as hyperhomocysteinemic (>12 mu mol/L, n = 47) and normohomocysteinemic (<12 mu mol/L, n = 47) according to their serum HCY concentrations. Results: Folate and vitamin B6, but not vitamin B12, were significantly lower in hyperhomocysteinemic subjects compared with controls. However, DXA, biomechanical testing, and histomorphometry did not reveal significant differences in bone quality between hyperhomocysteinemic subjects and controls. Conclusions: The results of the present study do not indicate a significant relationship between circulating HCY concentrations and morphological or biomechanical bone properties in humans with OA of the hip. Clin Chem Lab Med 2010;48:821-7.

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NR 43
TC 8
Z9 8
U1 0
U2 4
PU WALTER DE GRUYTER & CO
PI BERLIN
PA GENTHINER STRASSE 13, D-10785 BERLIN, GERMANY
SN 1434-6621
EI
J9 CLIN CHEM LAB MED
JI Clin. Chem. Lab. Med.

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PY 2010
VL 48
IS 6
BP 821
EP 827
DI 10.1515/CCLM.2010.155
PG 7
WC Medical Laboratory Technology
SC Medical Laboratory Technology
GA 618HP
UT WOS:000279342700014
PM 20345232
DA 2026-02-10
ER

PT J
AU Cooper, C
AF Cooper, Cyrus
TI Osteoporosis research thrives: IOF WCO-ECCEO10
SO EXPERT REVIEW OF PHARMACOECONOMICS & OUTCOMES RESEARCH
LA English
DT Article
DE fragility fractures; osteoporosis; prevention and treatment; world congress
AB The recent World Congress on Osteoporosis (IOF WCO-ECCEO10), held in Florence on 5-8 May 2010, not only drew a record number of researchers and clinicians, it also attracted a far greater number of scientific abstracts than ever before (850). Needless to say, the organizing societies, the International Osteoporosis Foundation (IOF) and the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO), were delighted to welcome a record number of attendees (5500). The record numbers suggest that research in the field is thriving and that there is strong interest in the epidemiology, diagnosis and management of osteoporosis and fragility fractures around the world. This is reflected in the attendance statistics, which showed that, as expected, the largest delegation of participants (73.89%) was from Europe, with comparatively large delegations from Asia (8.20%) and North America (6.35%). Researchers and clinicians from South America and the Middle East (similar to 3% each) were also in attendance. Participants experienced an enriching scientific program featuring a broad range of topics covered in 12 plenary sessions, 19 primarily clinically oriented meet-the-expert topics in multiple sessions, and eight special sessions and symposia. A total of 12 satellite symposia enhanced the program by offering a wealth of information and practical new knowledge for clinicians.
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FU Medical Research Council [U1475000001, MC_UP_A620_1014] Funding Source: researchfish; National Institute for Health Research [NF-SI-0508-10082] Funding Source: researchfish; Medical Research Council [MC_UP_A620_1014] Funding Source: Medline
CR Dawson-Hughes B, 2010, OSTEOPOROSIS INT, V21, P1151, DOI 10.1007/s00198-010-1285-3
NR 1
TC 1
Z9 1
U1 0
U2 1
PU EXPERT REVIEWS
PI LONDON
PA UNITEC HOUSE, 3RD FL, 2 ALBERT PLACE, FINCHLEY CENTRAL, LONDON N3 1QB, ENGLAND
SN 1473-7167
EI
J9 EXPERT REV PHARM OUT
JI Expert Rev. Pharmacoecon. Outcomes Res.
PD AUG 15
PY 2010
VL 10
IS 4
BP 367
EP 370
DI 10.1586/ERP.10.39
PG 4
WC Health Care Sciences & Services; Health Policy & Services; Pharmacology & Pharmacy
SC Health Care Sciences & Services; Pharmacology & Pharmacy
GA 847XW
UT WOS:000297009800009
PM 20715912
DA 2026-02-10
ER

PT J
AU Glowacki, J
AF Glowacki, J.
TI Osteoarthritis and osteoporosis: coexistence of osteoporosis in patients with

osteoarthritis
SO MINERVA ORTOPEDICA E TRAUMATOLOGICA
LA English
DT Review
DE Osteoarthritis; Osteoporosis; Bone density; Absorptiometry, photon
ID bone-mineral density; total hip-arthroplasty; human articular-cartilage; vitamin-d deficiency; age-related-changes; knee osteoarthritis; subchondral bone; postmenopausal women; proximal femur; risk-factors
AB Osteoarthritis (OA) and osteoporosis (OP) are two age-related degenerative diseases previously believed to be mutually exclusive. OA is a painful, debilitating disease, while OP may be silent until the subject has a fragility fracture. Several studies of bone mineral density (BMD) with dual-energy X-ray absorptiometry report that between 20% to 29% of women and men with OA have occult OP, which increases their risk of fracture. Furthermore, BMD measurements of the femoral neck of a hip with OA may be elevated due to subchondral osteosclerosis and may not reflect the status of the contralateral hip or the general skeleton. Vitamin D-deficiency is common in patients with OA, with OP, or with both, and should be corrected in order to reduce progression of OA and risk of fracture. Patients with hip OA who appear to be at risk for occult OP are those with advanced age and lower body mass index and with radiographic evidence of thin cortices and osteopenia. Awareness of fracture risk in patients with OA may require paradigm shifts in multidisciplinary care of those patients.
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NR 61
TC 1
Z9 2
U1 0
U2 8
PU EDIZIONI MINERVA MEDICA
PI TURIN
PA CORSO BRAMANTE 83-85 INT JOURNALS DEPT., 10126 TURIN, ITALY
SN 0026-4911
EI 1827-1707
J9 MINERVA ORTOP TRAUMA
JI Minerva Ortop. Traumatol.
PD APR 15
PY 2010
VL 61
IS 2
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EP 122
DI
PG 8
WC Orthopedics
SC Orthopedics

GA 596RB
UT WOS:000277701700003
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ER

PT J
AU Stogiannidis, I
Puolakka, T
Pajamäki, J
Moilanen, T
Konttinen, YT
AF Stogiannidis, Ioannis
Puolakka, Timo
Pajamaki, Jorma
Moilanen, Teemu
Konttinen, Yrjo T.
TI Whole-mount specimens in the analysis of en bloc samples obtained from revisions of resurfacing hip implants A report of 4 early failures
SO ACTA ORTHOPAEDICA
LA English
DT Article
ID surface replacement; femoral-head; arthroplasty; vascularity; density; femur
AB Background Modern metal-on-metal hip resurfacing implants are being increasingly used for young and active patients, although the long-term outcome and failure mechanisms of these implants are still unknown. In this consecutive revision case series, early failures of femoral implants (at < 4 years) were studied. Methods 3 revisions were done due to a fracture of the femoral neck and 1 due to loosening and varus position of the femoral component. Femoral heads were removed en bloc 2-46 months after the primary operation, embedded in methylmethacrylate, sectioned, stained, and analyzed as whole-mount specimens in 4 55-62-year-old patients with osteoarthritis. Results Histopathology was characterized by new but also partly healed trabecular microfractures, bone demineralization, cysts, metallosis, and abnormal formation of new woven bone. All samples displayed signs of notching, osteoporosis, and aseptic necrosis, which seemed to have been the main reason for the subsequent development and symptoms of the patients and revision operations of the hips. Interpretation Based on these early revision cases, it appears that aseptic necrosis is a common cause of early loosening of resurfacing hip implants.
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FU Danish Council for Strategic Research: "Individualized musculoskeletal regeneration and reconstruction network"; EU NMT ERA Net: "A new generation of titanium biomaterials"; EU COST Action: "Materials for Improved Wear Resistance of Total Artificial Joints"; Musculoskeletal Diseases and Biomaterials (TBGS); Evo; ORTON Foundation; Orion-Farmos Foundation; Sigrid Juselius Foundation; Finnish Medical Association
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NR 19
TC 2
Z9 2

U1 0
U2 2
PU TAYLOR & FRANCIS LTD
PI ABINGDON
PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
SN 1745-3674
EI 1745-3682
J9 ACTA ORTHOP
JI Acta Orthop.
PD JUN 15
PY 2010
VL 81
IS 3
BP 324
EP 330
DI 10.3109/17453674.2010.480934
PG 7
WC Orthopedics
SC Orthopedics
GA 620XK
UT WOS:000279535900009
PM 20367416
DA 2026-02-10
ER

PT J
AU Ding, CH
Cicuttini, FM
Boon, C
Boon, P
Srikanth, V
Cooley, H
Jones, G
AF Ding, Changhai
Cicuttini, Flavia M.
Boon, Catrina
Boon, Pip
Srikanth, Velandai
Cooley, Helen
Jones, Graeme
TI Knee and Hip Radiographic Osteoarthritis Predict Total Hip Bone Loss in Older Adults: A Prospective Study
SO JOURNAL OF BONE AND MINERAL RESEARCH
LA English

DT Article
DE OSTEOARTHRITIS; BONE LOSS; KNEE; HIP; OLDER ADULTS
ID mineral density; postmenopausal women; hand osteoarthritis; osteoporotic fractures; degenerative disease; vertebral fracture; cartilage volume; lumbar spine; elderly men; risk
AB The relationship between osteoarthritis (OA) and osteoporosis remains controversial This study was designed to determine the association between hip and knee radiographic OA and change in total hip bone mineral density (BMD) over 2 6 years A total of 867 population-based randomly selected subjects (mean age 62 years, range 51 to 80 years, and 49% female) were included Hip and knee joint space narrowing (JSN, 0 to 3) and osteophytes (0 to 3) in both lower limbs was assessed using Altman's atlas Total hip BMD was measured by dual-energy X-ray absorptiometry (DXA). We found that radiographic OA (score of JSN or osteophytes > 0) was common in this sample (hip 45%, knee 68%). In multivanable analyses, percentage change in total hip BMD per year was predicted by right and left hip axial (beta - -0.25% and -0.29% per grade, respectively, both p < .05), right hip superior femoral osteophytes (grades 2 and 3 versus 0 beta - -1 60, p < 05), combined right and left knee tibiofemoral JSN (beta = -006 per grade from grades 0 to 12, p < 05), and osteophytes (beta = -0 06 per grade from grades 0 to 14, p < 05) independent of each other and joint pain In conclusion, older subjects with radiographic hip and knee OA have higher total hip bone loss over 2.6 years regardless of symptoms, suggesting that consideration should be given to the monitoring of bone mass in these subjects. (C) 2010 American Society for Bone and Mineral Research.
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Arden NK, 2006, ARTHRIT RHEUM-ARTHR, V55, P610, DOI 10.1002/art.22088
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NR 43
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Z9 39
U1 1
U2 4
PU WILEY-BLACKWELL
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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J9 J BONE MINER RES
JI J. Bone Miner. Res.
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 589YF
UT WOS:000277189400018
PM 19821767
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PT J
AU Hall, KL
Denda, CE
Yeung, H
AF Hall, Kathryn L.
Denda, Caroline E.
Yeung, Helen
TI Dietary Vitamin D Intake Among Elderly Residents in a Veterans' Centre
SO CANADIAN JOURNAL OF DIETETIC PRACTICE AND RESEARCH

LA English
DT Article
ID supplementation; canadians; calcium
AB Purpose: Dietary vitamin D intake was assessed among residents in a long-term care (LTC) facility, so that recommendations could be made about vitamin D supplementation. Methods: Three-day tray audits were completed for all meals and snacks, including nutritional supplements (Boost (TM) and/or high-protein pudding). Total daily and three-day vitamin D intake was calculated for each resident, and the total sample was compared with the recommended Adequate Intake (AI) of 600 IU. Vitamin D content was calculated Using the Canadian Nutrient. File and product labels. Resident charts were reviewed for micronutrient supplements and diagnoses. Results: The daily average vitamin D available to and consumed by 30 residents was 414 IU and 295 IU, respectively. Those provided with nutritional supplements received an average of 480 IU and consumed 357 IU, while those without received an average of 245 IU and consumed 207 IU. Thirty-three percent of residents were diagnosed with osteoporosis, osteoarthritis, and falls and/or fractures. Vitamin D micronutrient supplementation varied from above 600 IU (43%) to below 600 IU (30%) to no supplementation (27%). Conclusions: None of the study participants met the recommended AI of 600 IU through dietary sources alone. Study results suggest that all LTC residents require vitamin D micronutrient supplementation of at least 400 IU to achieve the recommended AI of 600 IU. (Can J Diet Prac Res 2010;71:49-52) (DOI: 10.3148/71.1.2010.49)
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U1 0
U2 7
PU DIETITIANS CANADA
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Uludag, Hasan
Doschak, Michael R.
TI Synthesis, characterization and in vitro evaluation of a bone targeting delivery system for salmon Calcitonin

SO INTERNATIONAL JOURNAL OF PHARMACEUTICS
LA English
DT Article
DE Calcitonin; Bisphosphonate; Bone targeting; Drug delivery system; Osteoporosis; Paget's disease; Bone cancer; Rheumatoid arthritis; Osteoarthritis
ID bisphosphonate conjugation; receptors; peptide; identification; disposition; affinity; behavior; sites
AB Synthetic salmon Calcitonin (sCT) is currently used to treat and manage conditions associated with low bone mass, and elicits its antiresorptive effect by acting upon Calcitonin receptors (CTRs) located on bone-resorbing osteoclast cells. However, CTRs are also widely distributed in many non-skeletal tissues (such as kidney, brain, and lung), and the competitive uptake of available sCT amongst such CTRs likely reduces sCT availability for bone resident osteoclast cells, particularly if the drug is administered systemically and not specifically targeted to bone. Hence, the objective of this study was to synthesize and characterize a bisphosphonate (BP)-mediated bone targeting delivery system for sCT and to determine whether the bioactivity of sCT was retained after BP conjugation. BP-sCT conjugates were synthesized by initially reacting sCT with sulfosuccinimidyl-4-[N-maleimidomethylicyclohexane-1-carboxylate (sulfo-SMCC) in dimethyl formamide in the presence of triethylamine (TEA) at room temperature. Thiolated (Thiol)-BP was then reacted with the sCT-sulfo-SMCC conjugates to generate sCT-BP conjugates, which were purified by dialysis and assayed using the micro-BCA protein assay. Non-BP containing control sCT-Cysteine conjugates were also synthesized using the same procedure. Reactions were monitored and characterized using matrix-assisted laser desorption ionization time-of-flight mass spectrometer (MALDI-TOF) analysis and Tris-Tricine SDS-PAGE. Conjugates were evaluated for in vitro bone mineral affinity using a hydroxyapatite binding test, for bone mineral specificity using different calcium salt binding affinity assays, and for continued sCT bioactivity after conjugation using an intracellular cAMP stimulation in human T47D breast cancer cells. Our results confirmed that BP-conjugated sCT exhibited significantly greater affinity and specificity for bone mineral over unmodified sCT, and that sCT-BP conjugates retained strong CT bioactivity after conjugation. Our conjugation strategy holds the promise of facilitating the delivery of sCT preferentially to skeletal bony tissues, thereby increasing its local concentration to bone surfaces. This peptide hormone-bisphosphonate drug system represents a new class of antiresorptive drug that has not previously been attempted, nor has a bone targeting formulation of sCT been reported. Crown Copyright (C) 2010 Published by Elsevier B.V. All rights reserved.
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NR 37
TC 22
Z9 33
U1 0
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PI AMSTERDAM
PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
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WC Pharmacology & Pharmacy
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PT J
AU Tadic, N
Zogovic, M
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AF Tadic, Niksa
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Zimmermann, Horst
TI A low-voltage complementary metal-oxide semiconductor adapter circuit suitable for input rail-to-rail operation
SO INTERNATIONAL JOURNAL OF ELECTRONICS
LA English
DT Article
DE analogue basic building block; analogue CMOS integrated circuit; band-pass filter; current conveyor; input signal adapter; operational amplifier; rail-to-rail operation; voltage-controlled transconductor; voltage-controlled resistor
ID vlsi cell library; cmos op-amp; controlled resistance; current conveyors; optical receiver; class ab; stage; technology; amplifier; design
AB In this article, a low-voltage complementary metal-oxide semiconductor (CMOS) input signal adapter (ISA) suitable for input rail-to-rail operation of various types of analogue basic building blocks is presented. The adapter acts as a pre-stage with infinite input resistance and linear transfer characteristics. Its input signal is translated into the region fitting the operating range of the following stage. The generality of the proposed method is proven through the application of the ISA in different types of analogue basic building blocks designed in 0.5m CMOS technology. They are the following:
below-negative-rail-to-above-positive-rail voltage-controlled transconductor, quasi rail-to-rail voltage-controlled resistor (VCR), rail-to-rail operational amplifier (OA) and quasi rail-to-rail second generation current conveyor. The proposed negative resistance quasi rail-to-rail VCR and rail-to-rail OA have been used in a Sallen and Key band-pass filter. All of these analogue basic building blocks and their applications in the form of the Sallen and Key band-pass filter operate from a single supply of 1.5V. Simulation results confirm the predictions of the analysis performed.
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PT J
AU Teixeira, LEPP
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Trevisani, V. F. M.
TI Progressive load training for the quadriceps muscle associated with proprioception exercises for the prevention of falls in postmenopausal women with osteoporosis: a randomized controlled trial
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Exercises; Falls; Muscular strength; Osteoporosis; Prevention; Proprioception
ID bone-mineral density; hip fracture; older-people; go test; risk; balance; strength; osteoarthritis; probability; prediction

AB This study aims to evaluate the effect of 18-week progressive muscular strength and proprioception training program on the muscle strength of the quadriceps, in prevention of falls in postmenopausal women with osteoporosis. The incidence of falls in the intervention group was significantly lower than in the control group (incidence rate ratio (IRR) = 0.263, 95% CI 0.10-0.68). This study aims to evaluate the effect of a progressive muscular strength and proprioception training program on the muscle strength of the quadriceps, balance, quality of life, and reduction in the risk of falls in postmenopausal women with osteoporosis. One hundred sedentary postmenopausal women with osteoporosis, ages ranging from 55 to 75, were selected and randomized into two groups: the intervention group comprised of 50 patients who underwent a 18-week of progressive load training for the quadriceps muscle (50% up to 80% of 1-RM-one maximum repetition) and proprioception training associated to a drug treatment of osteoporosis and the control group that included 50 patients who only underwent a drug treatment of osteoporosis. The muscular strength, balance, functional mobility, and quality of life were evaluated in the beginning and end of the research. The number of falls was evaluated 24 weeks post-treatment. Eighty-five patients concluded the research. The program promoted a significant difference among the groups for SF-36 in the eight sub-scales (p a parts per thousand currency signaEuro parts per thousand 0.0018), Timed Up & Go Test ($p < 0.0001$), 1-RM test ($p < 0.0001$), Berg Balance Scale ($p < 0.0001$) and also a decrease in the number of falls in the intervention group compared to control (IRR = 0.263, 95% CI 0.10-0.68, $p = 0.0064$). The association of progressive strength training for the quadriceps and the proprioceptive training is effective for the prevention of falls, increasing the muscle power, the static and dynamic balance and increasing the speed of the motor responses, therefore improving the performance of daily activities.
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NR 44
TC 59
Z9 75
U1 3
U2 51
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD APR 15
PY 2010
VL 21
IS 4
BP 589
EP 596
DI 10.1007/s00198-009-1002-2
PG 8
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 567BD
UT WOS:000275416400006
PM 19562243
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ER

PT J

AU Gardner-Morse, MG
Tacy, NJ
Beynnon, BD
Roemhildt, ML
AF Gardner-Morse, Mack G.
Tacy, Nelson J.
Beynnon, Bruce D.
Roemhildt, Maria L.
TI In Situ Microindentation for Determining Local Subchondral Bone Compressive Modulus
SO JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME
LA English
DT Article
DE subchondral bone; microindentation; modulus; stiffness; osteoarthritis
ID articular-cartilage; elastic-modulus; osteoarthritis; nanoindentation; osteoporosis; progression
AB Alterations to joint tissues, including subchondral bone, occur With osteoarthritis. A microindentation technique was developed to determine the local compressive modulus of subchondral bone. This test, in conjunction with a cartilage indentation test at the same location, could evaluate changes of these material properties in both tissues. The accuracy of the technique was determined by applying it to materials of known moduli. The technique was then applied to rat tibial plateaus to characterize the local moduli of the subchondral bone. An established nanoindentation method was adopted to determine the modulus of subchondral bone following penetration of the overlying articular cartilage. Three cycles of repeated loadings were applied (2.452 N, 30 s hold). The slope of the load-displacement response during the unloading portion of the third cycle was used to measure the stiffness. Indentation tests were performed on two polyurethane foams and polymethyl-methacrylate for validation (n = 15). Regression analysis was used to compare the moduli with reference values. Subchondral bone moduli of tibial plateaus from Sprague-Dawley rats (n = 5) were measured for central and posterior locations of medial and lateral compartments. An analysis of variance was used to analyze the effects of compartment and test location. The measured moduli of the validation materials correlated with the reference values ($R(2) = 0.993$, $p = 0.05$). In rat tibial plateaus, the modulus of the posterior location was significantly greater than the center location (4.03 +/- 1.00 GPa and 3.35 +/- 1.16 GPa respectively, $p = 0.03$). The medial compartment was not different from the lateral compartment. This method for measuring the subchondral bone in the same location as articular cartilage allows studies of the changes in these material properties with the onset and progression of osteoarthritis. [DOI: 10.1115/1.4001872]
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FU NIH [T32 AR 07568, R21 AR 052815]
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NR 16
TC 6
Z9 10
U1 0
U2 14
PU ASME-AMER SOC MECHANICAL ENG
PI NEW YORK
PA THREE PARK AVE, NEW YORK, NY 10016-5990 USA
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J9 J BIOMECH ENG-T ASME
JI J. Biomech. Eng.-Trans. ASME
PD SEP 15
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IS 9
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PG 4
WC Biophysics; Engineering, Biomedical
SC Biophysics; Engineering
GA 666HS
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PM 20815650
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ER

PT J
AU Cordingley, R
Kohan, L
Ben-Nissan, B
AF Cordingley, R.
Kohan, L.
Ben-Nissan, B.
TI What happens to femoral neck bone mineral density after hip resurfacing surgery?
SO JOURNAL OF BONE AND JOINT SURGERY-BRITISH VOLUME
LA English
DT Article
ID x-ray absorptiometry; health survey questionnaire; physical-activity; osteo-arthritis; outcome measure; arthroplasty; fracture; osteoarthritis; osteoporosis; densitometry
AB The major advantage of hip resurfacing is the decreased amount of bone resection compared with a standard total hip replacement. Fracture of the femoral neck is the most common early complication and poor bone quality is a major risk factor. We undertook a prospective consecutive case control study examining the effect of bone mineral density changes in patients undergoing hip resurfacing surgery. A total of 423 patients were recruited with a mean age of 54 years (24 to 87). Recruitment for this study was dependent on pre-operative bilateral femoral bone mineral density results not being osteoporotic. The operated and non-operated hips were assessed. Bone mineral density studies were repeated over a two-year period. The results showed no significant deterioration in the bone mineral density in the superolateral region in the femoral neck, during that period. These findings were in the presence of a markedly increased level of physical activity, as measured by the short-form 36 health survey physical function score.
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NR 50
TC 8
Z9 10
U1 0
U2 0
PU BRITISH EDITORIAL SOC BONE JOINT SURGERY
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PA 22 BUCKINGHAM STREET, LONDON WC2N 6ET, ENGLAND
SN 0301-620X
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J9 J BONE JOINT SURG BR
JI J. Bone Joint Surg.-Br. Vol.
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WC Orthopedics; Surgery
SC Orthopedics; Surgery
GA 701BK
UT WOS:000285789100007
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ER

PT J
AU Hajlaoui, H
El Ayeb, N
Garrec, JP
Denden, M
AF Hajlaoui, Hichem
El Ayeb, Naceur
Garrec, Jean Pierre
Denden, Mounir
TI Differential effects of salt stress on osmotic adjustment and solutes allocation on the basis of root and leaf tissue senescence of two silage maize (Zea mays L.) varieties
SO INDUSTRIAL CROPS AND PRODUCTS
LA English
DT Article
DE Salt stress; Tissue senescence; Osmotic adjustment; Zea mays L.
ID low water potentials; increased proline deposition; glycine betaine; accumulation; plants; wheat; photosynthesis; tolerance; salinity; growth
AB The comparative effects of salt stress on osmotic adjustment and solutes accumulation in relation to root-leaf tissue senescence of two silage maize varieties were examined. Studies were carried out with seedlings of two forage maize varieties (Aristo and Arper) subjected to 0, 34, 68 and 102 mM NaCl for 6 weeks under glasshouse conditions. Osmotic potential (OP), osmotic adjustment (OA) and solutes accumulation were quantified in primary roots and in three leaf stages (young, mature and senescent leaves). Moreover, in order to assess the distribution of proline and glycine betaine during root development, the two components were analyzed at different position from the primary root apex of both varieties. The total dry matter was significantly dropped with increasing salinity and reduction was greater in Aristo than in Arper. Salt stress impact in terms of ionic status was more pronounced in roots than in leaves and in older leaves than younger ones. In this setting, Aristo displayed a more sensitivity than Arper. A close relationship

between the age of root-leaf tissue and proline and glycine betaine allocation, as salinity response. was shown. During the stress treatment, the accumulation of the two components was higher in growing regions of roots and in young leaves. While total free amino acids (FAA) and sugars were accumulated in roots as well as leaves but preferentially in the mature leaves. The capacity of OA was greater in young than in mature and/or senescent leaves and the contribution efficiency of organic solutes to this occurrence tended to be higher in Arper than in Arista. Moreover, glycine betaine and proline appeared to be the main solutes that contributed ably to OA mainly in growing regions followed by sugars and other FAA. Inorganic solutes (K+ and Ca2+), however, did not seem to play an important role in OA since their amounts were often reduced in response to salt tolerance. (C) 2009 Elsevier B.V. All rights reserved.
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NR 54
TC 100
Z9 119
U1 1
U2 57
PU ELSEVIER
PI AMSTERDAM
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PT J
AU Aslam, MN
Kreider, JM
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TI A Mineral-Rich Extract from the Red Marine Algae Lithothamnion calcareum Preserves Bone Structure and Function in Female Mice on a Western-Style Diet
SO CALCIFIED TISSUE INTERNATIONAL
LA English
DT Article
DE Bone mineralization; Bone strength; Mineral-rich red algae extract; Aquamin; High-fat Western-style diet; Osteoporosis
ID fat-sucrose diet; mechanical-property; knee osteoarthritis; colon-cancer; long-term; osteoporosis; calcium; metabolism; nutrition; copper
AB The purpose of this study was to determine whether a mineral-rich extract derived from the red marine algae Lithothamnion calcareum could be used as a dietary supplement for prevention of bone mineral loss. Sixty C57BL/6 mice were divided into three groups based on diet: the first group received a high-fat Western-style diet (HFWD), the second group was fed the same HFWD along with the mineral-rich extract included as a dietary supplement, and the third group was used as a control and was fed a low-fat rodent chow diet (AIN76A). Mice were maintained on the respective diets for 15 months. Then, long bones (femora and tibiae) from both males and females were analyzed by three-dimensional micro-computed tomography (micro-CT) and (bones from female mice) concomitantly assessed in bone strength studies. Tartrate-resistant acid phosphatase (TRAP), osteocalcin, and N-terminal peptide of type I procollagen (PINP) were assessed in plasma samples obtained from female mice at the time of sacrifice. To summarize, female mice on the HFWD had reduced bone mineralization and reduced bone strength relative to female mice on the low-fat chow diet. The bone defects in female mice on the HFWD were overcome in the presence of the mineral-rich supplement. In fact, female mice receiving the mineral-rich supplement in the HFWD had better bone structure/function than did female mice on the low-fat chow diet. Female mice on the mineral-supplemented HFWD had higher plasma levels of TRAP than mice of the other groups. There were no differences in the other two markers. Male mice showed little diet-specific differences by micro-CT.
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FU NCI NIH HHS [R21 CA140760, CA140760] Funding Source: Medline
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TC 71
Z9 76
U1 1
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PU SPRINGER
PI NEW YORK
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AU Kim, SK
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Choe, Jung-Yoon
TI Lower bone mineral density of forearm in postmenopausal patients with radiographic hand osteoarthritis
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE Osteoarthritis; Hand; Bone mineral density; AUSCAN index; Kellgren-Lawrence grade
ID women; knee; strength; mass; osteoporosis; association; incident; fracture; weight
AB The association between clinical parameters and forearm bone mineral density (BMD) in postmenopausal females with radiographic hand OA has not been determined. We investigated the difference in forearm BMD between radiographic hand OA and non-radiographic hand OA, and also the association between clinical parameters of patients and the level of forearm BMD. A total of 180 postmenopausal patients with hand OA were enrolled in this study. We classified them into two groups according to the Kellgren-Lawrence (K-L) radiological grade, one with radiographic hand OA (K-L grade a parts per thousand yen 2) and the other with non-radiographic OA (K-L grade < 2) as controls. The number of nodal joints, swollen joints and tender joints were determined in the physical examination, and measures of BMD (g/cm(2)), Australian Canadian (AUSCAN) OA hand index, grip strength, pinch strength, and visual analogue scale (VAS) were also estimated. Patients with radiographic hand OA had lower distal radius BMD when compared with controls (0.35 +/- A 0.06 vs. 0.40 +/- A 0.05, P < 0.001). After adjusting for variables such as age, menopausal duration, number of nodal joints, and AUSCAN function index, the difference in BMD between the two groups was also significantly different (0.35 +/- A 0.04 vs. 0.38 +/- A 0.04, P < 0.001). For analysis of risk factors for forearm BMD in hand OA, age and K-L OA grade in total hand OA are considered risk factors, whereas age and menopause duration contribute to the forearm BMD in radiographic hand OA patients (P < 0.001, P =

0.002, respectively). The development of osteoporosis at the distal radius in radiographic hand OA is associated with older age (OR = 1.216, P = 0.002), lower BMI (OR = 0.777, P = 0.004) and lower stiffness in the AUSCAN OA index (OR = 0.505, P = 0.003). This study shows that the BMD levels of the distal radius in patients with radiographic hand OA are significantly lower when compared to those of controls. Forearm BMD levels are positively associated with age and K-L radiological grade in total hand OA, whereas age and menopausal duration are closely related with radiographic hand OA. The presence of osteoporosis in the distal radius in radiographic hand OA may be influenced by age, BMI, and stiffness on the AUSCAN index.
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NR 25
TC 14
Z9 15
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PU SPRINGER HEIDELBERG
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AU Franklin, J
Englund, M
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TI The association between hip fracture and hip osteoarthritis: A case-control study

SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
ID bone-mineral density; joint space width; body-mass index; femoral-neck fracture; risk-factors; osteoporotic fractures; replacement; population; falls; chingford
AB Background: There have been reports both supporting and refuting an inverse relationship between hip fracture and hip osteoarthritis (OA). We explore this relationship using a case-control study design. Methods: Exclusion criteria were previous hip fracture (same side or contralateral side), age younger than 60 years, foreign nationality, pathological fracture, rheumatoid arthritis and cases were radiographic examinations were not found in the archives. We studied all subjects with hip fracture that remained after the exclusion process that were treated at Akureyri University Hospital, Iceland 1990-2008, n = 562 (74% women). Hip fracture cases were compared with a cohort of subjects with colon radiographs, n = 803 (54% women) to determine expected population prevalence of hip OA. Presence of radiographic hip OA was defined as a minimum joint space of 2.5 mm or less on an anteroposterior radiograph, or Kellgren and Lawrence grade 2 or higher. Possible causes of secondary osteoporosis were identified by review of medical records. Results: The age-adjusted odds ratio (OR) for subjects with hip fracture having radiographic hip OA was 0.30 (95% confidence interval [95% CI] 0.12-0.74) for men and 0.33 (95% CI 0.19-0.58) for women, compared to controls. The probability for subjects with hip fracture and hip OA having a secondary cause of osteoporosis was three times higher than for subjects with hip fracture without hip OA. Conclusion: The results of our study support an inverse relationship between hip fractures and hip OA.
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WOLF O, 2009, ACTA ORTHOP, V0, P1
NR 41
TC 32
Z9 44
U1 0
U2 4
PU BIOMED CENTRAL LTD
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PA 236 GRAYS INN RD, FLOOR 6, LONDON WC1X 8HL, ENGLAND
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AU Power, J
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TI Sclerostin and the Regulation of Bone Formation: Effects in Hip Osteoarthritis and Femoral Neck Fracture
SO JOURNAL OF BONE AND MINERAL RESEARCH
LA English
DT Article
DE SCLEROSTIN; OSTEOCYTE; BONE REMODELING; OSTEOARTHRITIS; OSTEOPOROSIS
ID van-buchem-disease; cancellous bone; mechanical strain; cortical porosity; bmp antagonist; up-regulation; iliac crest; sost gene; in-vivo; osteocytes
AB Remodeling imbalance in the elderly femoral neck can result in thin cortices and porosity predisposing to hip fracture. Hip osteoarthritis protects against intracapsular hip fracture. By secreting sclerostin, osteocytes may inhibit Wnt signaling and reduce bone formation by osteoblasts. We hypothesised that differences in osteocytic sclerostin expression might account for differences in osteonal bone-formation activity between controls and subjects with hip fracture or hip osteoarthritis. Using specific antibody staining, we determined the osteocytic expression of sclerostin within osteons of the femoral neck cortex in bone removed from subjects undergoing surgery for hip osteoarthritis (hOA: 5 males, 5 females, 49 to 92 years of age) or hip fracture fixation (FNF: 5 males, 5 females, 73 to 87 years of age) and controls (C: 5 males, 6 females, 61 to 90 years of age). Sclerostin expression and distances of each osteocyte to the canal surface and cement line were assessed for all osteonal osteocytes in 636 unremodeled osteons chosen from fields (similar to 0.5 mm in diameter) with at least one canal staining for alkaline phosphatase (ALP), a marker of bone formation. In adjacent sections, ALP staining was used to classify basic multicellular unit (BMUs) as quiescent or actively forming bone (ALP(+)). The areal densities of scl(-) and scl(+) osteocytes (number of cells per unit area) in the BMU were inversely correlated and were strong determinants of ALP status in the BMU. In controls and hip fracture patients only, sclerostin-negative osteocytes were closer to osteonal surfaces than positively stained cells. Osteon maturity (progress to closure) was strongly associated with the proportion of osteonal osteocytes expressing sclerostin, and sclerostin expression was the chief determinant of ALP status. hOA patients had 18% fewer

osteocytes per unit bone area than controls, fewer osteocytes expressed sclerostin on average than in controls, but wide variation was seen between subjects. Thus, in most hOA patients, there was increased osteonal ALP staining and reduced sclerostin staining of osteocytes. In FNF patients, newly forming osteons were similar in this respect to hOA osteons, but with closure, there was a much sharper reduction in ALP staining that was only partly accounted for by the increased proportions of osteonal osteocytes staining positive for sclerostin. There was no evidence for a greater effect on ALP expression by osteocytes near the osteonal canal. In line with data from blocking antibody experiments, osteonal sclerostin appears to be a strong determinant of whether osteoblasts actively produce bone. In hOA, reduced sclerostin expression likely mediates increased osteoblastic activity in the intracapsular cortex. In FNF, full osteonal closure is postponed, with increased porosity, in part because the proportion of osteocytes expressing sclerostin increases sharply with osteonal maturation. 0 2010 American Society for Bone and Mineral Research.
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NR 58
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PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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J9 J BONE MINER RES
JI J. Bone Miner. Res.
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DI 10.1002/jbmr.70
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Long, DL
Loeser, RF
AF Long, D. L.

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TI p38γ mitogen-activated protein kinase suppresses chondrocyte production of MMP-13 in response to catabolic stimulation
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Chondrocyte; Articular cartilage; Integrins; Cytokines; Cell signaling; Matrix metalloproteinase
ID p38 map kinase; human articular chondrocytes; c-jun; matrix metalloproteinase-13; subcellular-localization; fibronectin fragments; kappa-b; expression; isoforms; cartilage
AB Objective: The signaling protein p38 mitogen-activated protein kinase is required for inflammatory signaling in chondrocytes that regulates matrix metalloproteinase (MMP) production. We sought to determine the role of specific p38 isoforms in chondrocyte catabolic signaling in response to IL-1 beta and fibronectin fragments (Fn-f). Methods: Human articular chondrocytes isolated from normal ankle cartilage from tissue donors or from osteoarthritic knee cartilage obtained during knee replacement were stimulated with IL-1 beta or Fn-f, with or without pretreatment with p38 inhibitors (SB203580 or BIRB796) or growth factors (IGF-1 and OP-1). p38 isoform phosphorylation was measured by antibody array and immunoblotting. MMP-13 expression was measured by real-time polymerase chain reaction (PCR), enzyme-linked immunosorbent assay (ELISA), and immunoblotting. Chondrocytes were transfected with plasmids expressing constitutively active (CA) p38 gamma or with adenovirus expressing dominant negative (DN) p38 gamma. Results: Stimulation of chondrocytes with either IL-1 beta or Fn-f led to enhanced phosphorylation of p38 alpha and p38 gamma, with little phosphorylation of p38 beta or p38 delta isoforms. p38 alpha localized to the nucleus and p38 gamma to the cytosol. Inhibition of both p38 alpha and p38 gamma with BIRB796 resulted in less inhibition of MMP-13 production in response to IL-1 beta or FN-f than did inhibition of only p38 alpha with SB203580. Transfection with CA p38 gamma resulted in decreased MMP-13 production while transduction with DN p38 gamma resulted in increased MMP-13 production. IGF-1 and OP-1 pretreatment inhibited p38 alpha phosphorylation but not p38y phosphorylation. Conclusions: p38 gamma is activated by catabolic stimulation of human articular chondrocytes, but interestingly suppresses MMP-13 production. Treatments that increase p38 gamma activation may be of therapeutic benefit in reducing chondrocyte production of MMP-13. (C) 2010 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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Z9 31
U1 0
U2 11
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD SEP 15
PY 2010
VL 18
IS 9
BP 1203
EP 1210
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WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 657ZZ
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TI Differing patterns of peripheral blood leukocyte telomere length in rheumatologic diseases

SO MUTATION RESEARCH-FUNDAMENTAL AND MOLECULAR MECHANISMS OF MUTAGENESIS
LA English
DT Article
DE Telomere; Inflammation; Rheumatoid arthritis; Psoriatic arthritis; Ankylosing spondylitis; Osteoarthritis; Osteoporosis
ID systemic-lupus-erythematosus; connective-tissue diseases; mononuclear-cells; mammalian-cells; t-cells; recombination; elongation; reduction; arthritis; cancer
AB Telomeres progressively shorten with repeated somatic tissue cell division, their length being an indicator of cellular ageing. Telomeric dysfunction may be implicated in a variety of diseases. We measured mean telomere length in peripheral blood leukocytes (PBL) from patients with various rheumatologic diseases. Mean PBL telomere length was measured using real-time quantitative polymerase chain reaction (Q-PCR) assay in a control population (n = 130; age range: 3-94 years) and in subjects diagnosed with rheumatoid arthritis (RA; n = 86; age range: 31-82 years), psoriatic arthritis (PA; n = 56; age range: 26-79 years) and ankylosing spondylitis (AS; n = 59; age range: 21-75 years). These diseases are associated with chronic systemic inflammatory activity. Telomere length was also quantified in subjects with osteoarthritis (OA: n = 34; age range: 43-82 years) and osteoporosis (OP: n = 35: age range: 59-95 years), diseases without a chronic systemic inflammatory component. Telomere length in OA showed no differences from age-matched controls ($p = 0.234$), but was significantly shorter in OP ($p = 0.001$). Telomere length was significantly longer than controls in RA ($p = 0.015$), PA ($p < 0.001$) and AS ($p < 0.001$). Different patterns in telomere length from PBL are evidenced in rheumatologic pathologies, possibly dependent on the presence or absence of chronic systemic inflammation. (C) 2009 Elsevier B.V. All rights reserved.
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Kaneko, Kazuo
TI A longitudinal study of the relationship between the status of bone marrow abnormalities and progression of knee osteoarthritis
SO JOURNAL OF ORTHOPAEDIC SCIENCE
LA English
DT Article
ID transient osteoporosis; subchondral bone; edema; lesions; joint; mri; cartilage; disease
AB Bone marrow abnormalities (BMAs) detected on magnetic resonance imaging (MRI) are suggested to be involved in the pathogenesis of osteoarthritis (OA), and the size of the BMAs is associated with the progression of OA. However, it still remains unclear as to whether the associations of BMA size and OA severity are observed equally or whether they differ from early to advanced stages of OA. In the present study we examined whether BMA enlargement and OA progression differed according to the severity of OA. One hundred and eighty patients with knee OA were enrolled in the present study, and 122 of these patients completed this study. Radiography and knee MRI were done two times in all patients, at the baseline and 6 months or later at the time of patient follow-up. The severity of OA was evaluated by radiography using the Kellgren-Lawrence (K-L) grade. The patients who showed a deterioration in the K-L grade during the follow-up examination (59/122) were defined as the deterioration group. T2-weighted fat-suppressed MR images were used to score the size of the BMAs according to the whole-organ magnetic resonance imaging score (WORMS). A new scoring system, the spacial BMA score (s-score) was defined to assess the size of the BMAs three-dimensionally. In patients with K-L grade 2, the s-score changes during the follow-up period in the deterioration group were significantly increased in comparison to those in the no-change group (P = 0.04), and no significant s-score changes were observed in patients with either K-L grade 1 or 3 (P = 0.07 and 0.57) between the deterioration group and the no-change group during the follow-up examination. In patients with K-L grade 3, the s-score at the baseline in the deterioration group was higher than that in the no-change group (P = 0.05). The relationship between the size and enlargement of BMAs and the progression of OA changed depending upon the severity of OA.
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NR 23
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Z9 16
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TI Alterations in osteoclast function and phenotype induced by different inhibitors of bone resorption implications for osteoclast quality
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
ID autosomal recessive osteopetrosis; anhydrase-ii deficiency; cathepsin-k deficiency; matrix metalloproteinases; cysteine-proteinases; carbonic-anhydrase; long-bone; relative contribution; atpase inhibitor; structural basis
AB Background: Normal osteoclasts resorb bone by secretion of acid and proteases. Recent studies of patients with loss of function mutations affecting either of these processes have indicated a divergence in osteoclastic phenotypes. These difference in osteoclast phenotypes may directly or indirectly have secondary effects on bone remodeling, a process which is of importance for the pathogenesis of both osteoporosis and osteoarthritis. We treated human osteoclasts with different inhibitors and characterized their resulting function. Methods: Human CD14 + monocytes were differentiated into mature osteoclasts using RANKL and

M-CSF. The osteoclasts were cultured on bone in the presence or absence of various inhibitors: Inhibitors of acidification (bafilomycin A1, diphyllin, ethoxyzolamide), inhibitors of proteolysis (E64, GM6001), or a bisphosphonate (ibandronate). Osteoclast numbers and bone resorption were monitored by measurements of TRACP activity, the release of calcium, CTX-I and ICTP, as well as by counting resorption pits. Results: All inhibitors of acidification were equally potent with respect to inhibition of both organic and inorganic resorption. In contrast, inhibition of proteolysis by E64 potently reduced organic resorption, but only modestly suppressed inorganic resorption. GM6001 alone did not greatly affect bone resorption. However, when GM6001 and E64 were combined, a complete abrogation of organic bone resorption was observed, without a great effect on inorganic resorption. Ibandronate abrogated both organic and inorganic resorption at all concentrations tested [0.3-100 mu M], however, this treatment dramatically reduced TRACP activity. Conclusions: We present evidence highlighting important differences with respect to osteoclast function, when comparing the different types of osteoclast inhibitors. Each class of osteoclast inhibitors will lead to different alterations in osteoclast quality, which secondarily may lead to different bone qualities.
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NR 69
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PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
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TI Brake response time before and after total knee arthroplasty: a prospective cohort study
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
ID total hip; osteoarthritis; prevalence
AB Background: Although the numbers of total knee arthroplasty (TKA) are increasing, there is only a small number of studies investigating driving safety after TKA. The parameter 'Brake Response Time (BRT)' is one of the most important criteria for driving safety and was therefore chosen for investigation. The present study was conducted to test the hypotheses that patients with right-or left-sided TKA show a significant increase in BRT from pre-operative (pre-op, 1 day before surgery) to post-operative (post-op, 2 weeks post surgery), and a significant decrease in BRT from post-op to the follow-up investigation (FU, 8 weeks post surgery). Additionally, it was hypothesized that the BRT of patients after TKA is significantly higher than that of healthy controls. Methods: 31 of 70 consecutive patients (mean age 65.7 +/- 10.2 years) receiving TKA were tested for their BRT pre-op, post-op and at FU. BRT was assessed using a custom-made driving

simulator. We used normative BRT data from 31 healthy controls for comparison. Results: There were no significant increases between pre-op and post-op BRT values for patients who had undergone left-or right-sided TKA. Even the proportion of patients above a BRT threshold of 700 ms was not significantly increased postop. Controls had a BRT which was significantly better than the BRT of patients with right-or left-sided TKA at all three time points. Conclusion: The present study showed a small and insignificant postoperative increase in the BRT of patients who had undergone right-or left-sided TKA. Therefore, we believe it is not justified to impair the patient's quality of social and occupational life post-surgery by imposing restrictions on driving motor vehicles beyond an interval of two weeks after surgery.
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NR 25
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TI Effects of Estrogen Deficiency and Low Bone Mineral Density on Healthy Knee Cartilage in Rabbits
SO JOURNAL OF ORTHOPAEDIC RESEARCH
LA English
DT Article
DE ovariectomy; estrogens; osteoporosis; cartilage; animal models
ID articular-cartilage; subchondral bone; experimental-model; animal-models; osteoarthritis; osteoporosis; association; degradation; ovariectomy; population
AB The purpose of this study was to compare the effects of estrogen deficiency and bone mass loss on normal knee cartilage in mature rabbits. Bilateral ovariectomy (OVX) was performed in 13 rabbits, 6 of which also received systemic glucocorticoid for 4 weeks. Seven additional healthy rabbits were used as controls. Bone mineral density (BMD) was measured by dual X-ray absorptiometry in lumbar spine, knee, and subchondral bone of the knee at baseline and 22 weeks after OVX. After sacrifice, the knees were dissected, macroscopy was assessed, and histological cartilage abnormalities were evaluated according to the Mankin score. Correlations of Mankin with BMD at different regions were also performed. When compared to baseline, differences in BMD were only found in spine and knee of the animals receiving glucocorticoids. All the animals subjected to OVX had a significantly higher Mankin score than controls. Mankin was upper in OVX animals receiving glucocorticoids, but differences were not significant. The Mankin score was inversely related with BMD in lumbar spine ($r = -0.67$;$p<0.01$). Although low bone mineral density contributes to the minor osteoarthritic alterations observed in our model, estrogen deficiency itself seems to act directly to induce the main pathogenic effects in healthy cartilage of the rabbit. (C) 2010 Orthopaedic Research Society. Published by Wiley Periodicals, Inc. J Orthop Res 28:812-818, 2010
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PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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JI J. Orthop. Res.
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WC Orthopedics

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GA 592BI
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PT J
AU Watanabe, M
Sakai, D
Yamamoto, Y
Sato, M
Mochida, J
AF Watanabe, Masahiko
Sakai, Daisuke
Yamamoto, Yukihiro
Sato, Masato
Mochida, Joji
TI Upper cervical spine injuries: age-specific clinical features
SO JOURNAL OF ORTHOPAEDIC SCIENCE
LA English
DT Article
ID odontoid fractures; elderly-patients; older; osteoarthritis; cord; prevalence; survival; pattern; trauma; axis
AB There are few reports on the age-specific clinical features of upper cervical spine injury. To identify these age-specific changes, we reviewed 103 patients with upper cervical spine injury. We subdivided the patients into four groups according to age: 12 patients were classified as old elderly (a parts per thousand yen75 years), 18 patients as young elderly (65-74 years), 67 patients as young adults (18-64 years), and 6 patients as adolescents (a parts per thousand currency sign17 years). Data were collected on injury etiology, mortality, neurological deficit, distribution and pattern of injury, degenerative changes of each joint in the upper cervical spine and disc in the cervical spine, and osteoporosis of the axis. The proportion of patients with a simple fall as the etiology of their injury showed a statistically significant trend to increase with aging. Although no specific distribution or pattern of injury was statistically elucidated, we were able to detect some common features. A high proportion of the old elderly group (5/12) had a type II odontoid fracture. Body fracture of the axis tends to be frequent in the young elderly and traumatic spondylolisthesis and hyperextension teardrop fracture to be frequent in the young adults. In adolescents, a traffic accident as an unbelted rear seat passenger was the most frequent etiology. Among the 103 patients, 16 died during the initial hospitalization. The mortality rate for upper cervical spine injury was similar in all groups. In the old elderly, stiffness of the lower cervical spine, caused by degenerative changes and osteopenia, might contribute to upper cervical spine

injury in response to low-energy trauma. The disproportion of degenerative change in joints of the upper cervical spine might also contribute to the high frequency of type II odontoid fracture. In young adults, high-energy and hyperextension injury was the most frequent cause of upper cervical spine injury.
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NR 30
TC 61
Z9 72
U1 1
U2 9
PU SPRINGER TOKYO
PI TOKYO
PA 1-11-11 KUDAN-KITA, CHIYODA-KU, TOKYO, 102-0073, JAPAN
SN 0949-2658
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J9 J ORTHOP SCI
JI J. Orthop. Sci.
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WC Orthopedics
SC Orthopedics
GA 640YA
UT WOS:000281088900009
PM 20721716
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PT J
AU Arbuthnot, JE
Brink, RB
AF Arbuthnot, James Edmund
Brink, Rodney B.
TI The role of anterior cruciate ligament reconstruction in the older patients, 55 years or above
SO KNEE SURGERY SPORTS TRAUMATOLOGY ARTHROSCOPY
LA English
DT Article
DE ACL reconstruction; Age; Osteoarthritis; Ligament; Knee

ID patellar tendon-bone; follow-up; acl reconstruction; nonoperative treatment; hamstring tendon; age; knee; level; osteoarthritis; cartilage
AB Anterior cruciate ligament (ACL) deficiency can result in symptomatic functional instability of the knee regardless of the patient's age. We reviewed a single surgeon database of 908 ACL reconstructions carried out in the last 20 years for symptomatic instability. 14 patients were identified who were 55 years or above at surgery (mean: 60 years, range 55-75 years). Patients were evaluated clinically and with clinical outcome scoring and KT-1000 arthrometry assessment. 12 patients (86%) were available to attend for follow-up at a mean 9 years after ACL reconstruction. The median pre-injury Tegner score was 5.5 (range 1-7) and the median pre-operative Lysholm score was 33 (range 15-67). Initially, one patient had a good result but subsequently the patient undergone total knee replacement 5 years after ACL reconstruction. For the remainder, at the most recent review, the median Lysholm score had improved to 79 (range 43-100, $P < 0.05$) although it had deteriorated from the maximum achieved post-op score of 85.5 (range 53-100, $P < 0.05$); and the Tegner score had declined to 3 (range 1-5, $P < 0.05$). KT-1000 testing demonstrated a mean side-to-side difference improvement in laxity from 4.6 +/- A 1.3 mm (range 3-7) to 1.5 +/- A 1.2 mm (range 0-4, $P < 0.05$) and > 2 mm difference in only one knee (for which it was known that the graft had failed at 11 years after ACL reconstruction). At review, the same knee was the only one that demonstrated a pivot shift. ACL reconstruction with autograft in the above-55 patient with minimal osteoarthritis is a safe procedure that returns stability to the knee and permits a return to a reasonable level of activity.
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NR 47
TC 25
Z9 28
U1 0
U2 5
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0942-2056
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J9 KNEE SURG SPORT TR A
JI Knee Surg. Sports Traumatol. Arthrosc.
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WC Orthopedics; Sport Sciences; Surgery
SC Orthopedics; Sport Sciences; Surgery
GA 537DL
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ER

PT J
AU Iwamoto, J

Sato, Y
Takeda, T
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AF Iwamoto, Jun
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Matsumoto, Hideo
TI Effectiveness of exercise in the treatment of lumbar spinal stenosis, knee osteoarthritis, and osteoporosis
SO AGING CLINICAL AND EXPERIMENTAL RESEARCH
LA English
DT Review
DE Elderly people; exercise; knee osteoarthritis; lumbar spinal stenosis; osteoporosis
ID graded compression; eular recommendations; standing committee; preventing falls; muscle strength; cauda-equina; nerve roots; task-force; management; hip
AB Background and aims: Lumbar spinal stenosis (LSS), osteoarthritis (OA) of the knee, and osteoporosis are major locomotive diseases in the elderly population. The aim of this study was to examine the effectiveness of exercise in these three diseases. Methods: We reviewed the relevant literature, i.e., systematic reviews and meta-analyses searched with Pub Med. Results: There is not sufficient evidence to draw conclusions regarding the effectiveness of exercise for LSS. However, muscle strengthening and aerobic exercises are effective in reducing pain and improving physical function in patients with mild to moderate OA of the knee. On the other hand, aerobics, weight bearing and resistance exercises are effective in increasing the bone mineral density of the spine in postmenopausal women, and walking is effective for the hips. Muscle strengthening, balance training and traditional Chinese Tai Chi reduce the risk of falls in the elderly. Conclusions: Based on a review of the literature, appropriate exercises should be emphasized for elderly patients, especially for those with mild to moderate OA of the knee or osteoporosis. (Aging Clin Exp Res 2010: 22: 116-122) (C) 2010. Editrice Kurtis
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PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 1594-0667
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JI Aging Clin. Exp. Res.
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WC Geriatrics & Gerontology
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ER

PT J
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AF Fujita, Takuo
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TI Analgesic effect of raloxifene on back and knee pain in postmenopausal women with osteoporosis and/or osteoarthritis
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Raloxifene; Pain; Skin impedance; Osteoporosis; Osteoarthritis
ID vitamin-d; electroalgometry; risedronate; etidronate; collagen
AB To assess the effect of raloxifene on bone and joint pain, 24 postmenopausal women with back or knee pain or both were randomly divided into two groups, based on the chronological sequence of consultation, to be treated with 60 mg raloxifene and 1 mu g alfacalcidol (RA)/day (group RA) or 1 mu g alfacalcidol alone (A)/day (group A), respectively, for 6 months. Pain following knee loading (KL) by standing up from a chair and bending the knee by squatting, knee and spine loading (KSL) by walking horizontally and ascending and descending stairs, and spine loading (SL) by lying down supine on a bed and leaving the bed to stand was evaluated by electroalgometry (EAM), based on measurement of the fall of skin impedance, and a visual rating scale (VRS), recording subjective pain on a scale of 0-100 between no pain and unbearable pain. The two groups showed no significant difference as to age, indices of mineral metabolism, back and knee pain, and bone status. RA gave a significantly greater analgesic effect than A by both EAM ($P = 0.0158$) and VRS ($P = 0.0268$) on overall comparison of the mean response to all modalities of exercise loading. Paired comparison between pretreatment and posttreatment indicated a significant effect of RA by both EAM ($P = 0.0045$) and VRS ($P = 0.0017$), but not that of A. The analgesic effect was more clearly noted on combined knee-spine loading (KSL) and spine loading (SL) than simple knee loading (KL). Monthly comparison of the analgesic effect indicated a significantly better analgesic effect in the fifth month by VRS. RA effect greater than A was more evident by EAM than VRS and during months 3-6 than during 1-2 months, suggesting a slowly progressive effect of RA. Pain evaluation by EAM and VRS mostly gave parallel results, except for a few occasions such as knee loading and spine loading by sitting up and leaving a bed, when EAM detected a positive

effect but VRS failed to do so. RA appeared to be more effective on bone and joint pain than A in postmenopausal women according to both EAM and VRS measurements.
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CR Atherton K, 2009, ANN RHEUM DIS, V68, P817, DOI 10.1136/ard.2008.090456
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NR 17
TC 29
Z9 34
U1 0
U2 13
PU SPRINGER JAPAN KK
PI TOKYO
PA SHIROYAMA TRUST TOWER 5F, 4-3-1 TORANOMON, MINATO-KU, TOKYO, 105-6005, JAPAN
SN 0914-8779
EI 1435-5604
J9 J BONE MINER METAB
JI J. Bone Miner. Metab.

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VL 28
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WC Endocrinology & Metabolism; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Research & Experimental Medicine
GA 616LI
UT WOS:000279210500013
PM 20157745
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ER

PT J
AU Olivos-Meza, A
Fitzsimmons, JS
Casper, ME
Chen, Q
An, KN
Ruesink, TJ
O'Driscoll, SW
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TI Pretreatment of periosteum with TGF-β1 in situ enhances the quality of osteochondral tissue regenerated from transplanted periosteal grafts in adult rabbits
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Bone; Cartilage; Chondrogenesis; Joints; Periosteum; Regenerative medicine; Tissue engineering; Transforming growth factor-beta
ID continuous passive motion; mesenchymal stem-cells; autogenous osteoperiosteal grafts; deep cartilage defects; full-thickness defects; joint surface-defects; articular-cartilage; ii collagen; follow-up; repair

AB Objective: To compare the efficacy of in situ transforming growth factor-betal (TGF-beta 1)-pretreated periosteum to untreated periosteum for regeneration of osteochondral tissue in rabbits. Methods: In the pretreatment group, 12 month-old New Zealand white rabbits received subperiosteal injections of 200 ng of TGF-beta 1 percutaneously in the medial side of the proximal tibia, 7 days prior to surgery. Control rabbits received no treatment prior surgery. Osteochondral transverse defects measuring 5 mm proximal to distal and spanning the entire width of the patellar groove were created and repaired with untreated or TGF-beta 1-pretreated periosteal grafts. Post-operatively the rabbits resumed normal cage activity for 6 weeks. Results: Complete filling of the defects with regenerated tissue was observed in both the TGF-beta 1 -pretreated and control groups with reformation of the original contours of the patellar groove. The total histological score (modified O'Driscoll) in the TGF-beta 1-pretreated group, 20(95% Confidence Interval (CI), 19-21), was significantly higher (P=0.0001) than the control group, 18 (16-19). The most notable improvements were in structural integrity and subchondral bone regeneration. No significant differences in glycosaminoglycan or type II collagen content, or equilibrium modulus were found between the surgical groups. The cambium of the periosteum regenerated at the graft harvest site was significantly thicker (P=0.0065) in the TGF-beta 1-pretreated rabbits, 121 mu m (94-149), compared to controls, 74 mu m (52-96), after 6 weeks. Conclusions: This study demonstrates that in situ pretreatment of periosteum with TGF-beta 1 improves osteochondral tissue regeneration at 6-weeks post-op compared to untreated periosteum in 12 month-old rabbits. (C) 2010 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 47
TC 18
Z9 28
U1 0
U2 13
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD SEP 15
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WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 657ZZ
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PT J
AU Woolf, AD
Vos, T
March, L
AF Woolf, Anthony D.
Vos, Theo
March, Lyn
TI How to measure the impact of musculoskeletal conditions
SO BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY
LA English
DT Article
ID rheumatoid-arthritis; death certificate; health-status; mortality; expenditures; burden
AB Musculoskeletal conditions are universally prevalent among all age and gender groups, across all socio-demographic strata of society. Their impact is pervasive yet this is not widely recognised at the level of health policy and priority. Musculoskeletal conditions are a diverse group of disorders with regard to pathophysiology but are linked anatomically and by their association with pain and impaired physical function; encompassing a spectrum of conditions, including inflammatory diseases such as rheumatoid arthritis or gout; age-related conditions such as osteoporosis and osteoarthritis; common conditions of unclear aetiology such as back pain and fibromyalgia; and those related to activity or injuries such as occupational musculoskeletal disorders, sports injuries or the consequences of falls and major trauma. The increasing number of older people and the changes in lifestyle throughout the world with increasing obesity and reduced physical activity mean that the burden on people and society will increase dramatically. The growing awareness of the burden increases the need for accurate measurement and assessment of the burden as well as measurement of the impact of any public health action. This chapter considers theoretical and practical issues relevant to measuring the buden of musculoskeltal conditions in populations, societies and individuals. (C) 2010 Published by Elsevier Ltd.
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Unknown -, 2003, 919 TRS WHO, V0, P0
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World Health Organization, 1900, DISABILITY AND HEALTH, V0, P0
NR 20
TC 51
Z9 66
U1 0
U2 6
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PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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WC Rheumatology
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ER

PT J
AU Johnston, JD
Kontulainen, SA
Masri, BA
Wilson, DR
AF Johnston, James D.
Kontulainen, Saija A.
Masri, Bassam A.
Wilson, David R.
TI A comparison of conventional maximum intensity projection with a new depth-specific topographic mapping technique in the CT analysis of proximal tibial subchondral bone density
SO SKELETAL RADIOLOGY
LA English
DT Article
DE Subchondral bone; Bone mineral density; Computed tomography; Osteoarthritis; CT-OAM; CT-TOMASD
ID anterior cruciate ligament; articular-cartilage; trabecular bone; knee osteoarthritis; mineral density; computed-tomography; cancellous bone; cortical bone; osteoporosis; joints
AB The objective was to identify subchondral bone density differences between normal and osteoarthritic (OA) proximal tibiae using computed tomography osteoabsorptiometry (CT-OAM) and computed tomography topographic mapping of subchondral density (CT-TOMASD). Sixteen intact cadaver knees from ten donors (8 male:2 female; mean age:77.8, SD:7.4 years) were categorized as normal (n = 10) or OA (n = 6) based upon CT reconstructions. CT-OAM assessed maximum subchondral bone mineral density (BMD). CT-TOMASD assessed average subchondral BMD across three layers (0-2.5, 2.5-5 and 5-10 mm) measured in relation to depth from the subchondral surface. Regional analyses of CT-OAM and CT-TOMASD included: medial BMD, lateral BMD, and average BMD of a 10-mm diameter area that searched each medial and lateral plateau for the highest "focal" density present within each knee. Compared with normal knees, both CT-OAM and CT-TOMASD demonstrated an average of 17% greater whole medial compartment density in OA knees ($p < 0.016$). CT-OAM did not distinguish focal density differences between OA and normal knees ($p > 0.05$). CT-TOMASD focal region analyses revealed an average of 24% greater density in the 0- to 2.5-mm layer (p =

0.003) and 36% greater density in the 2.5- to 5-mm layer (p = 0.034) in OA knees. Both CT-OAM and TOMASD identified higher medial compartment density in OA tibiae compared with normal tibiae. In addition, CT-TOMASD indicated greater focal density differences between normal and OA knees with increased depth from the subchondral surface. Depth-specific density analyses may help identify and quantify small changes in subchondral BMD associated with OA disease onset and progression.
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NR 55
TC 21
Z9 21
U1 0
U2 4
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0364-2348
EI 1432-2161
J9 SKELETAL RADIOL
JI Skeletal Radiol.
PD SEP 15
PY 2010
VL 39
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WC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
SC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
GA 627WS
UT WOS:000280075300003
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PT J
AU Lambrinoudaki, I
Brincat, M
Erel, CT
Gambacciani, M
Moen, MH

Schenck-Gustafsson, K
Tremollieres, F
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Brincat, Marc
Erel, C. Tamer
Gambacciani, Marco
Moen, Mette H.
Schenck-Gustafsson, Karin
Tremollieres, Florence
Vujovic, Svetlana
Rees, Margaret
Rozenberg, Serge
TI EMAS position statement: Managing obese postmenopausal women
SO MATURITAS
LA English
DT Article
DE Obesity; Menopause; Hormone treatment; Venous thromboembolism; Stroke; Breast cancer
ID coronary-heart-disease; idiopathic venous thromboembolism; hormone replacement therapy; conjugated equine estrogen; body-mass index; risk-factors; plus progestin; cancer; menopause; stroke
AB Introduction: Obesity is a public health problem, with overweight individuals representing approximately 20% of the adult world population. Postmenopausal status is associated with higher prevalence of obesity, as 44% of postmenopausal women are overweight, among whom 23% are obese. Obesity often co-exists with other diseases, the most important being diabetes mellitus, dyslipidemia and hypertension. Furthermore, obesity increases the risk of gynecologic cancer, cardiovascular disease, venous thromboembolism, osteoarthritis and chronic back pain. Aim: To formulate a position statement on the management of the menopause in obese women. Materials and methods: Literature review and consensus of expert opinion. Results and conclusions: Obese women seeking hormone therapy should be evaluated for their individual baseline risk of developing breast cancer, cardiovascular disease and venous thromboembolism. These risks should be weighed against expected benefit from symptom relief, improved quality of life and osteoporosis prevention. The lowest effective estrogen dose should be used (GEE 0.300-0.400 mg or estradiol 0.5-1 mg orally daily or 25-50 mu g estradiol transdermally). With regard to progestogens, although no RCT data exist, there are observational studies showing that micronized progesterone or dydrogesterone may have a better risk profile with respect to breast cancer risk. There are no RCT data comparing various progestogens with regard to VTE risk. There are observational data, however, suggesting that

micronized progesterone or pregnane derivatives may be associated with a lower VTE Fisk in postmenopausal women taking HT compared to nonpregnane derivatives. There is a rationale in suggesting the use of transdermal HT in obese women, since this route of administration has been associated with a lesser risk of venous thromboembolism than oral therapy. (C) 2010 Elsevier Ireland Ltd. All rights reserved.
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U2 8
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J9 MATURITAS
JI Maturitas
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WC Geriatrics & Gerontology; Obstetrics & Gynecology
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PT J
AU Lingard, EA
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TI The prevalence of osteoporosis in patients with severe hip and knee osteoarthritis awaiting joint arthroplasty
SO AGE AND AGEING
LA English
DT Article
DE osteoporosis; osteoarthritis; hip; knee; bone mineral density; elderly
ID bone-mineral density; elderly-men; women; precision; fractures; arthritis; risk
AB Objective: to determine the prevalence of osteoporosis among patients with osteoarthritis awaiting total knee arthroplasty or total hip arthroplasty aged between 65 and 80 years. Design: cross-sectional observational study. Setting: tertiary referral centre in Newcastle upon Tyne, UK. Subjects: patients with osteoarthritis awaiting total knee hip arthroplasty aged between 65 and 80 years. Methods: lumbar spine, bilateral femoral and forearm bone mineral density (BMD) measurements were obtained using dual-energy X-ray absorptiometry. Results: the cohort consisted of 199 patients with a mean age of 72 years (SD 4), and 113 (57%) were women. The overall rate of osteoporosis at any site was 23% (46/199) and a further 43% (85/199) of patients would have been classified as osteopaenic according to World Health Organization criteria. Osteoporosis was more commonly detected in the forearm (14%) than the lumbar spine (8.5%) and proximal femur of the index side (8.2%). Conclusions: in summary, a significant proportion of patients with end-stage OA have osteoporosis but this diagnosis may be missed unless BMD measurements are performed at sites distant from joints affected by OA.
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U1 0
U2 11
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PI OXFORD
PA GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND
SN 0002-0729
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J9 AGE AGEING
JI Age Ageing
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WC Geriatrics & Gerontology
SC Geriatrics & Gerontology
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PT J
AU Rodríguez-Mañas, L
Gómez-Huelgas, R
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TI Thromboprophylaxis with the Low-Molecular-Weight Heparin Bemiparin Sodium in Elderly Medical Patients in Usual Clinical Practice The ANCIANOS Study
SO CLINICAL DRUG INVESTIGATION
LA English
DT Article
ID venous thromboembolism; hospitalized-patients; risk-factors; prevention; safety; prophylaxis; thrombosis; efficacy; placebo; care
AB Background: Venous thromboembolism (VTE) is a preventable common disease in geriatric medical patients, causing substantial morbidity and mortality. Objective: To assess the effectiveness and safety of bemiparin sodium thromboprophylaxis in non-surgical elderly medical patients (aged >= 65 years) bedridden for at least 4 days due to acute medical illness. Methods: This was a prospective, observational, multicentre cohort study carried out in patients treated in the setting of geriatric centres (GCs) or hospital-at-home units (HHUs). The study included 507 non-surgical elderly patients recruited from 49 Spanish centres who were administered subcutaneous bemiparin sodium (Hibor (R)) 2500 IU/day or 3500 IU/day, depending on the degree of VTE-risk moderate or high, respectively. Rates of VTE, major and minor bleeding events, thrombocytopenia and deaths that occurred during the 3-month study period were extracted. Results: Seventy-two percent of the subjects were women, and the mean (SD) age was 82 (8) years. Overall, 70.6% (358 patients) were treated in GCs and 29.4% (149 patients) in HHUs. The main causes of immobilization were: heart failure (30.4%), acute infectious disease (29.8%), acute respiratory insufficiency (19.9%), rheumatological disease (i.e. osteoarthritis, rheumatoid arthritis and osteoporosis) [15.4%] and acute cerebrovascular disease (14.4%). Most of the patients (63%) had a high VTE risk and received the highest dose of prophylactic bemiparin sodium (3500 IU/day) for a mean 33 days. The incidence of VTE was 0.6% (three distal deep vein thromboses confirmed by Doppler ultrasound). No cases of pulmonary embolism were reported. There were two (0.4%) major bleeding events, eight (1.6%) minor bleeding events and seven (1.4%) cases of mild thrombocytopenia; no cases of moderate or severe thrombocytopenia were reported. Twenty-four patients (4.7%) developed mild to moderate injection site complications. Twenty-one patients (4.1%) died, but all from causes not related to study medication. Conclusions: Bemiparin sodium thromboprophylaxis for 4-5 weeks was associated with a low incidence of VIE and a low rate of bleeding and other complications in non-surgical elderly patients at risk of VTE, treated either in GCs or in HHUs, in standard clinical practice.
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NR 31
TC 7
Z9 11
U1 0
U2 8
PU ADIS INT LTD
PI NORTHCOTE
PA 5 THE WAREHOUSE WAY, NORTHCOTE 0627, AUCKLAND, NEW ZEALAND
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JI Clin. Drug Invest.
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WC Pharmacology & Pharmacy
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PT J
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AF Keinan-Adamsky, Keren
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TI 23Na and 2H Magnetic Resonance Studies of Osteoarthritic and Osteoporotic Articular Cartilage
SO MAGNETIC RESONANCE IN MEDICINE
LA English
DT Article
DE osteoarthritis; osteoporosis; Na-23 and H-2 quadrupolar interactions; DQF; TQF
ID quantum-filtered nmr; multinuclear nmr; sodium; mri; glycosaminoglycan; microstructure; spectroscopy; quantitation; orientation; density
AB In this study, the short component of the Na-23 T-2 (T-2f) and the Na-23 and H-2 quadrupolar interactions (nu(Q)) were measured in bone-cartilage samples of osteoarthritic (OA) and osteoporotic (OP) patients. Na-23 nu(Q) was found to increase in osteoarthritic articular cartilage relative to controls. Similar results were found in bovine cartilage following proteoglycan (PG) depletion, a condition that prevails in osteoarthritis. Na-23 nu(Q) and 1/T-2f for articular cartilage obtained from osteoporotic patients were significantly larger than for control and osteoarthritic cartilage. Decalcification of both human and bovine articular cartilage resulted in an increase of Na-23 nu(Q) and 1/T-2f, showing the same trend as the osteoporotic samples. Differences in the ratio of the intensity of the large 2H splitting to that of the small one in the calcified zone were also observed. In osteoporosis, this ratio was twice as large as that obtained for both control and osteoarthritic samples. The H-2 and Na-23 results can be interpreted as due to sodium ions and water molecules filling the void created by the calcium depletion and to calcium ions being located in close association with the collagen fibers. To the best of our knowledge, this is the first study reporting differences of NMR parameters in cartilage of osteoporotic patients. Magn Reson Med 64:653-661, 2010. (C) 2010 Wiley-Liss, Inc.
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NR 36
TC 11
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U1 1
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PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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TI Microarchitectural adaptations in aging osteoarthrotic subchondral bone tissues
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DT Article
DE Three-dimensional reconstruction; microarchitectural properties; microarchitectural adaptation; micro-CT; mechanical properties; collagen; mineral; aging; osteoarthrosis; osteoporosis; rheumatoid arthritis; subchondral bone tissues; bone quality; human; guinea pig
ID age-related-changes; vertebral trabecular bone; collagen cross-links; cancellous bone; mechanical-property; cortical bone; rheumatoid-arthritis; mineral density; microdamage accumulation; 3-dimensional microarchitecture
AB The human skeleton optimizes its microarchitecture by elaborate adaptations to

mechanical loading during development and growth. The mechanisms for adaptation involve a multi-step process of cellular mechanotransduction stimulating bone modelling, and remodeling resulting in either bone formation or resorption. This process causes appropriate microarchitectural changes tending to adjust and improve the bone structure to its prevailing mechanical environment. Normal individual reaches peak bone mass at age between 25 and 30 years, and thereafter bone mass declines with age in both genders. The bone loss is accompanied by microarchitectural deterioration resulting in reduced mechanical strength likely leading to fragility fractures. With aging, inevitable bone loss occurs, which is frequently the cause of osteoporosis; and inevitable bone and joint degeneration happens, which often results in osteoarthrosis. These diseases are among the major health care problems in terms of socio-economic costs. The overall goals of the current series of studies were to investigate the age-related and osteoarthrosis (OA) related changes in the 3-D microarchitectural properties, mechanical properties, collagen and mineral quality of subchondral cancellous and cortical bone tissues. The studies included mainly two parts. For human subjects: aging- (I-IV) and early OA-related (V-VI) changes in cancellous bone properties were assessed. For OA guinea pig models (VII-IX), three topics were studied: firstly, the spontaneous, age-related development of guinea pig OA; secondly, the potential effects of hyaluronan on OA subchondral bone tissues; and thirdly, the effects on OA progression of an increase in subchondral bone density by inhibition of bone remodeling with a bisphosphonate. These investigations aimed to obtain more insight into the age-related and OA-related subchondral bone adaptations. Microarchitectural adaptation in human aging cancellous bone The precision of micro-CT measurement is excellent. Accurate 3-D micro-CT image datasets can be generated by applying an appropriate segmentation threshold. A fixed threshold may be used to obtain reliable volume fraction data, and this fixed threshold may be determined from the Archimedes-based volume fraction of a subgroup of specimens (1). Based on accurately generated micro-CT datasets, agerelated microarchitectural changes of human tibial cancelbus bone have been demonstrated (II, III). Apart from connectivity, all measured microarchitectural properties correlate significantly with age. However, age-related changes in the properties of human tibial cancellous bone do not follow the same pattern, nor do they occur at the same age. The observed increase of anisotropy and the constant nature of connectivity suggest an important bone remodeling mechanism that normal aging tibia may adapt trabecular volume orientation. Namely, that the aging trabeculae align preferentially to the primary loading direction to compensate bone loss (III). Age-related changes in trabecular thickness and structure type become significant first after 80 years of age. The plate-like structure reflects high mechanical stress whereas rod-like structure reflects low mechanical stress (II). Trabecular structure type and bone volume fraction correlates strongly. Trabecular structure type together with anisotropy correlates well with the Young's modulus. The most effective microarchitectural properties for predicting the mechanical properties of cancellous bone seem to differ with age (IV).

Microarchitectural adaptation in human osteoarthrotic subchondral bone In early human OA subchondral cancellous bone, none of the mechanical properties of cancellous bone can be predicted by the measured physical/compositional properties (V). The increased trabecular thickness and density, but relatively decreased connectivity suggests a mechanism of bone remodeling in early OA as a process of filling trabecular cavities. This process leads to a progressive change of trabeculae from rod-like to plate-like, the opposite to that of normal ageing. The increase in bone tissue accompanied with deteriorated microarchitecture in early-stage OA cancellous bone does not account for the loss of mechanical properties, which suggests deterioration in the quality of OA cancellous bone (VI). Microarchitectural adaptation in guinea pig osteoarthrotic subchondral bone Age-related pronounced changes of the microarchitecture and bone matrix composition of the subchondral bone tissues in guinea pig have been demonstrated. These changes do not appear to follow the same pattern as in normal aging and may have different influences on the resulting mechanical properties (VII). Intra-articular injection of hyaluronan effectively protects against cartilage degeneration in guinea pig primary OA. The decrease of subchondral bone density and thickness and change of trabecular structure toward rod-like result in more compliant subchondral bone and thereby reduces cartilage stress during impact loading. Moreover, hyaluronan maintains the mechanical properties of cancellous bone likely through increasing its mineralization. Early administration of hyaluronan is effective for intervention of OA initiation and progression, and short-term early HA treatment is sufficient to maintain treatment effects in OA guinea pig model (VIII). The inhibition of bone remodeling by ALN leads to significant increase of subchondral bone mass and bone mineral content, and marked changes of microarchitecture. Furthermore, the resulting increased bone mass accelerates articular cartilage degeneration at the medial condyle and, to some extent, at the lateral condyle. These results suggest that increased subchondral bone density promotes OA progression and call for circumspection in using bone density enhancing drugs for intervention of primary OA (IX). Conclusion Age-related musculoskeletal diseases increase as a result of increase in the elderly population and a change in lifestyle. Over the last a few decades, much significant research on the properties has been carried out on diseases such as age-related bone fracture, prosthetic loosening, bone remodeling, and degenerative bone diseases on both axial central vertebra and peripheral trabecular bone. We have now achieved a great deal of knowledge on normal aging- and diseases-related changes in bone properties and quality. This knowledge is of major importance for the understanding of degenerative bone diseases, and for the design, fixation, survival of joint prosthesis, functional adaptation of host bone; and for application of biomaterials regarding interface reaction, fracture repair and defect healing. Understanding the microarchitectural properties, mechanical adaptations, and collagen and mineral qualities of subchondral bone tissues highlighted in these studies may help to gain more insights into the pathogenesis of degenerative bone diseases and to target and develop novel approaches for the intervention and

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TI A Longitudinal Analysis of Urinary Biochemical Markers and Bone Mineral Density in STR/Ort Mice as a Model of Spontaneous Osteoarthritis
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID degenerative joint disease; body-mass index; knee osteoarthritis; cartilage damage; cross-links; mouse knee; x-ray; collagen; osteoporosis; pyridinoline
AB Objective. To investigate the longitudinal changes both in the urinary concentrations of biochemical markers and in bone mineral density (BMD) during disease progression in the STR/Ort mouse model of osteoarthritis (OA). Methods. Male STR/Ort mice were studied, with CBA mice used as nonarthritic controls. Radiographic evaluation and grading of the knee and measurements of urinary C-terminal crosslinking telopeptide of type II collagen (CTX-II), pyridinoline (Pyr), and deoxypyridinoline were performed between 8 weeks and 40 weeks of age. The BMD of the femoral shaft was measured from 20 weeks to 40 weeks of age and adjusted for body weight. Histologic evaluation and grading were performed at 40 weeks of age. STR/Ort mice were divided into 2 subgroups (STR OA and STR non-OA) based on histologic grading. Results. No significant differences between STR/Ort and CBA mice were observed for any biochemical marker or BMD at any time point. Urinary CTX-II levels and BMD in the STR OA subgroup were higher than those in the STR non-OA subgroup before radiographic changes of OA were apparent. Higher urinary Pyr levels in the STR OA subgroup were observed at the advanced stage of OA. Conclusion. Urinary CTX-II could be a useful marker in the early diagnosis and predicting the progression of OA, and urinary Pyr may be a potential marker to assess the severity of OA at an advanced stage. An increase in BMD prior to the establishment of radiographic OA may be related to the induction

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NR 46
TC 13
Z9 21
U1 0
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PU WILEY
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JI Arthritis Rheum.
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GA 619LQ
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PT J
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TI Subchondral bone microstructural damage by increased remodelling aggravates experimental osteoarthritis preceded by osteoporosis
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Article
ID kappa-b-ligand; experimental knee osteoarthritis; cruciate ligament transection; articular-cartilage; mineral density; trabecular bone; receptor-activator; cancellous bone; ii collagen; model
AB Introduction: Osteoporosis (OP) increases cartilage damage in a combined rabbit model of OP and osteoarthritis (OA). Accordingly, we assessed whether microstructure impairment at subchondral bone aggravates cartilage damage in this experimental model. Methods: OP was induced in 20 female rabbits, by ovariectomy and intramuscular injections of methylprednisolone hemisuccinate for four weeks. Ten healthy animals were used as controls. At week 7, OA was surgically induced in left knees of all rabbits. At 22 weeks, after sacrifice,

microstructure parameters were assessed by micro-computed tomography, and osteoprotegerin (OPG), receptor activator of nuclear factor-kappa B ligand (RANKL), alkaline phosphatase (ALP) and metalloproteinase 9 (MMP9) protein expressions were evaluated by Western Blot at subchondral bone. In addition, cartilage damage was estimated using the histopathological Mankin score. Mann-Whitney and Spearman statistical tests were performed as appropriate, using SPSS software v 11.0. Significant difference was established at $P < 0.05$. Results: Subchondral bone area/tissue area, trabecular thickness and polar moment of inertia were diminished in OPOA knees compared with control or OA knees ($P < 0.05$). A decrease of plate thickness, ALP expression and OPG/RANKL ratio as well as an increased fractal dimension and MMP9 expression occurred at subchondral bone of OA, OP and OPOA knees vs. controls ($P < 0.05$). In addition, the severity of cartilage damage was increased in OPOA knees vs. controls ($P < 0.05$). Remarkably, good correlations were observed between structural and remodelling parameters at subchondral bone, and furthermore, between subchondral structural parameters and cartilage Mankin score. Conclusions: Microstructure impairment at subchondral bone associated with an increased remodelling aggravated cartilage damage in OA rabbits with previous OP. Our results suggest that an increased subchondral bone resorption may account for the exacerbation of cartilage damage when early OA and OP coexist simultaneously in same individuals.
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TC 208
Z9 235
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PT J
AU Livshits, G
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AF Livshits, Gregory
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MacGregor, Alex J.
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TI Evidence that bone mineral density plays a role in degenerative disc disease: the UK Twin Spine Study
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID lumbar spine; genetic influences; risk-factors; osteoporosis; osteoarthritis; women; hip; heritability; chingford
AB Objective Osteoarthritis (OA) and osteoporosis are often considered to lie at opposite ends of a spectrum of bone phenotypes. Lumbar degenerative disc disease (LDD) may be associated with low back pain (LBP) and is similar in many

ways to OA. LDD is reported in small studies to be associated with increased spine bone mineral density (BMD). The present work aimed to confirm this association in a large population sample using MRI and explore the relationship further, in particular to determine whether it is mediated genetically. Methods A population based sample (N = 908, age range 32-74 years) of UK female twins having MRI of the lumbar spine was used in this study. LDD traits and summary measures and their relationship with BMD at the lumbar spine and hip were examined using multivariate multiple regression and maximum likelihood based variance decomposition. Results There was a significant positive correlation between LDD and BMD at the lumbar spine and hip, which remained significant after adjustment for confounders. Both traits were highly heritable and the associations between them were mediated genetically. Conclusions A clear, significant and independent association of BMD at hip and lumbar spine with LDD was found which is, in part, genetically mediated. The association with the non-axial site, the hip, is of particular interest and suggests a systemic bone effect. This should encourage the search for pleiotropic genes to help in the understanding of the bone-cartilage relationship. Moreover, genetic variants identified could provide novel therapeutic targets in the management of LBP.
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U1 1
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PI LONDON
PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR, ENGLAND
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JI Ann. Rheum. Dis.
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WC Rheumatology
SC Rheumatology
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PT J
AU Richette, P
Ottaviani, S
Vicaut, E
Bardin, T
AF Richette, Pascal
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Bardin, Thomas
TI Musculoskeletal Complications of Hereditary Hemochromatosis: A Case-Control Study
SO JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE HEREDITARY HEMOCHROMATOSIS; OSTEOARTHRITIS; OSTEOPOROSIS; CARTILAGE; PHLEBOTOMY; IRON
ID genetic hemochromatosis; iron-overload; hfe gene; arthritis; disease; bone; osteoporosis; arthropathy; mutations; symptoms
AB Objective. Arthropathy that mimics osteoarthritis (OA) and osteoporosis (OP) is considered a classic complication of hereditary hemochromatosis (HH) but has never been investigated in a cross-sectional study. We investigated whether HH is associated with increased prevalence of OA and OP and related factors. Methods. A self-administered questionnaire was completed by 306 patients with HH and 304 age and sex-matched unaffected controls. Results. The mean age of patients was 60.1 +/- 11.3 years, and 47.4% were women. More patients with HH than controls had been given a diagnosis of OA: 50.5% vs 28.9% [adjusted OR (aOR) 2.5, 95% CI 1.8-3.6]. Compared with controls, patients with HH had a higher risk of knee (aOR 5.3, 95% CI 1.1-25.6) and hip replacement prosthesis (aOR 5.2, 95% CI 2.2-11.9). More patients than controls had been diagnosed with OP: 23.3% vs 4.6% (aOR 7.3, 95% CI 3.2-17.0). Patients with FM showed an increased prevalence, although not significant, of wrist (aOR 1.7, 95% CI 0.9-3.0) or vertebral fractures (aOR 1.7, 95% CI 0.8-3.8). The severity of iron overload, as defined by a ferritin level > 1000 mu g/l at diagnosis, was associated with OA (p = 0.0005), OP (p = 0.01), presence of hip prosthesis (p = 0.04), wrist fractures (p = 0.002), and vertebral fractures (p = 0.02). Conclusion. This case-control study strongly suggests a significant association

among HH, OA, and OP. Joint involvement can be severe, especially in patients with substantially elevated ferritin levels. (First Release August 1 2010; J Rheumatol 2010:37:2145-50; doi:10.3899/jrheum.100234)
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TC 54
Z9 62
U1 0
U2 4
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JI J. Rheumatol.
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TI Partial medial meniscectomy and rotational differences at the knee during walking
SO JOURNAL OF BIOMECHANICS
LA English
DT Article
DE Knee; Meniscectomy; Walking gait; Moment; Internal/external rotation
ID arthroscopic partial meniscectomy; cruciate ligament reconstruction; cartilage morphology; matched controls; deficient knee; meniscal tear; gait analysis; acl injury; osteoarthritis; kinematics
AB Loss of meniscal function due to injury or partial meniscectomy is common and represents a significant risk factor for premature osteoarthritis. The menisci can influence the transverse plane movements (anterior-posterior (AP) translation and internal-external (IE) rotation) of the knee during walking. While walking is the most frequent activity of daily living, the kinematic differences at the knee during walking associated with the meniscal injury are not well understood. This study examined the influence of partial medial meniscectomy (PMM) on the kinematics and kinetics of the knee during the stance phase of gait by testing the differences in anterior-posterior translation, internal-external rotation, knee flexion range of movement, peak flexion/extension moments, and adduction moments between the PMM and healthy contralateral limbs. Ten patients (45 +/- 9 years old, height 1.75 +/- 0.06 m, weight 76.7 +/- 13.5 kg) who had undergone partial medial meniscectomy (33 +/- 100 months post-op) in one limb with a healthy contralateral limb were tested during normal walking. The contralateral limb was compared to a matched control group and no differences were found. The primary kinematic difference was a significantly greater external rotation (3.2 degrees) of the tibia that existed through stance phase, with 8 of 10 subjects demonstrating the same pattern. The PMM subjects also exhibited significantly lower peak flexion and extension moments in their PMM limbs. The altered rotational position found likely results in changes of tibio-femoral contact during walking and could cause the type of degenerative changes found in the articular cartilage following meniscal injury. (C) 2010 Elsevier Ltd. All rights reserved.
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TC 38
Z9 44
U1 0
U2 13
PU ELSEVIER SCI LTD
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TI Flare-up of hand osteoarthritis caused by zoledronic acid infusion
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Bisphosphonates; Osteoarthritis; Side effects; Zoledronic acid
ID nitrogen-containing bisphosphonates; in-vitro; alendronate; osteoporosis; synthase; statins; bone
AB Zoledronic acid is effective for osteoporosis at a single annual intravenous dose. It usually causes few adverse effects; the most common are related to acute phase reactions. We reported the case of a 64-year-old woman who presented flare-up of hand osteoarthritis after zoledronic acid infusions. Despite the fact that arthralgia is a common side effect of intravenous bisphosphonates, development of inflammatory signs in osteoarthritic joints is a rare event. We hypothesized that this side effect is caused by a release of cytokines secondary to activation of gamma-delta T lymphocytes.
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NR 12
TC 5
Z9 7
U1 0
U2 1
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WC Endocrinology & Metabolism
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TI Wnt pathway genes in osteoporosis and osteoarthritis: differential expression and genetic association study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Frizzled; Gene expression; LRP5; Osteoarthritis; Osteoporosis; Wnt
ID single-nucleotide polymorphisms; false discovery rate; hip osteoarthritis; articular chondrocytes; signaling pathway; bone; frzb; activation; women; sites
AB In comparison with hip fractures, increased expression of genes in the Wnt pathway and increased Wnt activity were found in bone samples and osteoblast cultures from patients with osteoarthritis, suggesting the involvement of this pathway in subchondral bone changes. No consistent differences were found in the genetic association study. This study aims to explore the allelic variations and expression of Wnt pathway genes in patients with osteoporosis and osteoarthritis.

The expression of 86 genes was studied in bone samples and osteoblast primary cultures from patients with hip fractures and hip or knee osteoarthritis. The Wnt-related activity was assessed by measuring AXIN2 and in transfection experiments. Fifty-five SNPs of the LRP5, LRP6, FRZB, and SOST genes were analyzed in 1,128 patients. Several genes were differentially expressed in bone tissue, with the lowest values usually found in hip fracture and the highest in knee osteoarthritis. Overall, seven genes were consistently upregulated both in tissue samples and in cell cultures from patients with knee osteoarthritis (BCL9, FZD5, DVL2, EP300, FRZB, LRP5, and TCF7L1). The increased expression of AXIN2 and experiments of transient transfection of osteoblasts with the TOP-Flash construct confirmed the activation of Wnt signaling. Three SNPs of the LRP5 gene and one in the LRP6 gene showed marginally significant differences in allelic frequencies across the patient groups, but they did not resist multiple-test adjustment. Genes in the Wnt pathway are upregulated in the osteoarthritic bone, suggesting their involvement not only in cartilage distortion but also in subchondral bone changes.
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NR 49
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Z9 97
U1 0
U2 35
PU SPRINGER LONDON LTD
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
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J9 OSTEOPOROSIS INT
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Ma, HT
Griffith, JF
Yeung, DK
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AF Ma, Heather Ting
Griffith, James F.
Yeung, David K.
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TI Modified Brix Model Analysis of Bone Perfusion in Subjects of Varying Bone Mineral Density
SO JOURNAL OF MAGNETIC RESONANCE IMAGING
LA English
DT Article
DE bone perfusion; pharmacokinetic model; osteoporosis; microcirculation
ID contrast-enhanced mri; peripheral arterial-disease; marrow fat-content; multiple-myeloma; lumbar spine; osteoporosis; spectroscopy; women; microcirculation; osteoarthritis
AB Purpose: To apply pharmacokinetic modeling to the investigation of bone perfusion in subjects of varying bone mineral density. Materials and Methods: This study re-analyzed previous experimental data. A modified pharmacokinetic model was applied to data obtained from two prior studies of dynamic contrast-enhanced MR imaging of L3 vertebral body in 165 subjects (65 males, 100 females), classified into three groups (normal, osteopenia, and osteoporosis) according to bone mineral density. Three parameters, amplitude A, exchange rate (k(ep)), and elimination rate (k(el)), were obtained by fitting the signal intensity to the pharmacokinetic model. These parameters were compared across the three groups for males and females, respectively. Results: Perfusion parameters, amplitude A was found to be reduced in osteoporotic subjects with additional, though less pronounced, reductions found in the permeability constant (A*k(ep)) and the elimination rate (k(el)). Increased marrow fat content was found in osteoporotic bone, which helped to partially explain the observed reduction in interstitial space. Conclusion: By pharmacokinetic model, bone perfusion can be quantitatively analyzed with alteration in functional parameters related to microcirculation in subjects of varying bone mineral density. Developing bone marrow specific pharmacokinetic models should help to deepen knowledge of physiological and pathological perfusion changes occurring in bone.
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PU JOHN WILEY & SONS INC
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J9 J MAGN RESON IMAGING
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PT J
AU Aula, AS
   Toyras, J
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AF Aula, A. S.
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TI Simultaneous ultrasound measurement of articular cartilage and subchondral bone
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Ultrasound; Articular cartilage; Subchondral bone; Proximal tibia; Mechanical properties; pQCT
ID cortical end-plate; cancellous bone; mechanical-property; in-vitro; human calcaneus; frequency; density; osteoarthritis; transmission; quantitation
AB Objective: In osteoarthritis (OA), subchondral sclerosis takes place during cartilage degeneration. High frequency ultrasound (12-55 MHz) has been shown to

diagnose degenerated articular cartilage, while 0.1-1 MHz ultrasound has been applied for clinical characterization of bone and diagnostics of osteoporosis. The aim of the study is to investigate, for the first time, the feasibility of 5 MHz ultrasound for simultaneous analysis of articular cartilage and subchondral bone. Methods: Osteochondral samples (n = 10) were prepared from fresh and visually normal bovine medial tibial plateaus. Acoustic properties of the cartilage and subchondral bone were measured with a scanning ultrasound system using the pulse-echo geometry and compared with biomechanical, histological and compositional reference data. Results: The apparent integrated backscatter (AIB) from internal cartilage showed significant partial correlations with hydroxyproline (Hypro) (r = 0.58, P = 0.000). water content (r = -0.52, P = 0.001) and dynamic modulus (r = 0.57, P = 0.000) of the tissue. Weak but statistically significant correlation was found between the bone AIB and mineral density of the subchondral plate (r = -0.34, P = 0.041). Topographical variations in cartilage thickness could be detected using ultrasound. Composition, thickness and mechanical properties of the cartilage varied significantly across the tibial plateau. For the calculated ultrasound parameters, the variation was significant only between a few locations. Conclusions: Pulse-echo ultrasound geometry at 5 MHz was feasible for simultaneous measurement of the acoustic properties of articular cartilage and subchondral bone. However, the relationships between the ultrasound parameters and properties of cartilage and bone were not as strong as reported earlier in studies focusing only either on bone or cartilage. Simultaneous measurement of both tissues compromises, due to natural curvature of articulating surfaces, the perpendicularity of the incidence of the ultrasound pulse. Obviously, this source of uncertainty should be minimized in order to enable effective clinical use of ultrasound in simultaneous measurement of articular cartilage and subchondral bone. (C) 2010 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 50
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U1 1
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PU ELSEVIER SCI LTD
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PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD DEC 15
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PT J
AU Glowacki, J
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AF Glowacki, Julie
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LeBoff, Meryl S.
TI Discordance in Femoral Neck Bone Density in Subjects With Unilateral Hip Osteoarthritis
SO JOURNAL OF CLINICAL DENSITOMETRY
LA English
DT Article
DE Bilateral BMD; hip; osteoarthritis
ID mineral density; osteoporosis; fracture; arthritis; women
AB Osteoarthritis (OA) is a common disease that increases in incidence with age and currently affects an estimated 27 million Americans. To determine whether site-specific hip bone mineral density (BMD) measures are confounded by the presence of OA, we measured bilateral hip BMD by dual X-ray absorptiometry in 34 subjects (19 women and 15 men) scheduled for hip replacement for confirmed advanced unilateral hip OA. The femoral neck (FN) BMD ($p = 0.035$) and T-score ($p = 0.017$) for the hip with OA was higher than those of the contralateral hip. There was a difference in osteoporosis classification depending on which hip was considered: for 11 of the 34 subjects (32%), the FN T-score was normal for OA hip, but the contralateral hip was classified as osteopenic (T-score between -1.0 and -2.5). For 1 subject, the FN T-score was normal for OA hip, but the contralateral hip was classified as osteoporotic (T-score below -2.5). Discordance was also present for trochanter values and not for total hip values. These data indicate that advanced hip OA can be associated with a higher bone density at the FN and

trochanter but not at total hip and that the discrepancy between hips at the FN may have an impact on patient treatment decisions.
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PT J
AU Hayashi, M
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Takahashi, T
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AF Hayashi, Masaya
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TI Intra-Articular Injections of Bone Morphogenetic Protein-7 Retard Progression of Existing Cartilage Degeneration
SO JOURNAL OF ORTHOPAEDIC RESEARCH
LA English
DT Article
DE bone morphogenetic protein; osteoarthritis; animal model

ID human articular chondrocytes; endogenous osteogenic protein-1; rabbit knee; proteoglycan synthesis; osteoarthritis; op-1; insulin-like-growth-factor-1; repair; model
AB We investigated the effect of weekly intra-articular injections of bone morphogenetic protein-7 (BMP-7) on prevention of progression of existing cartilage degeneration in an osteoarthritis model in rabbits. An anterior cruciate ligament transection (ACLT) model was used to create a progressive osteoarthritis model. BMP-7 was intra-articular injected weekly into the right knee and PBS into the left knee from 4 weeks after ACLT. Both sides of the knees were compared macroscopically, histologically, immunohistochemically, and by micro CT. Macroscopically, fibrillation in the femoral condyle was observed 4 weeks after ACLT. In the control knees, cartilage degeneration further progressed throughout the 12-week period. In the BMP-7 treated knee, osteoarthritis progression was milder than in the control knees. Histologically, safranin-O staining was decreased in the surgical knees at 4 weeks. Obvious erosions in both medial and lateral condyles were revealed in the control knees at 12 weeks, while cartilage matrix was predominantly retained in the BMP-7 treated knees. The macroscopic and microscopic OA score in the BMP-7 treated knee was better than that in the control in each rabbit. Immunohistochemical analysis demonstrated that both type II collagen and BMP-7 were more expressed in cartilage treated with BMP-7. Micro CT analysis showed that osteophytes were smaller in the BMP-7 treated knee compared to that of the control. Weekly intra-articular injections of BMP-7 inhibited progression of existing cartilage degeneration. (C) 2010 Orthopaedic Research Society. Published by Wiley Periodicals, Inc. J. Orthop. Res. 28: 1502-1506, 2010
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TI Beneficial effects of β-Ecdysone on the joint, epiphyseal cartilage tissue and trabecular bone in ovariectomized rats
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DT Article
DE beta-Ecdysone; Ovariectomy; Rat; Joint; Epiphysis; Trabeculae
ID growth-plate chondrocytes; estrogen-receptor-alpha; articular-cartilage; protein-synthesis; x receptor; osteoarthritis; phytoecdysteroids; ultraspiracle; hypertrophy; matrix
AB Ecdysteroids are steroids found in invertebrates and plants. In mammals they have protein anabolic effects. We have recently published antiosteoporotic effects of Tinospora cordifolia (TC) extract and the search for the possible active ingredients yielded the presence of beta-Ecdysone (Ecd). Therefore, we investigated the effects of pure Ecd in ovariectomized rats on morphological changes in joint, epiphyseal cartilage and trabecular tissue. Following ovariectomy rats were fed for 1 month with Ecd containing food at a dose of 52.8 mg/day/animal. Positive and negative control animals received 17-beta Estradiol (E-2, 132 mu g/day/animal) and soy free (sf) food respectively. At sacrifice, specimens consisting of upper tibiae-lower femurs and knee joint were harvested and processed for histomorphometry. The parameters measured included thickness of the joint cartilage, thickness of the whole epiphyseal growth plate and its three

zones. Furthermore, the percentage of trabecular bone in the metaphysis region of tibiae was quantified. Ecd and E-2 induced a significant increase in the thickness of joint cartilage. The whole epiphyseal growth plate and its proliferative and hypertrophic zones were also increased by Ecd whereas E-2 reduced their size. The percentage of trabecular area in the metaphysis of tibia was significantly increased in Ecd and E-2 treated animals. Results provide a plausible explanation for the antiosteoporotic effects of TC. Hence, TC as well as other Ecd producing plants or pure Ecd may be of value in the prevention and treatment of osteoporosis and osteoarthritis which is of increasing importance due to aging and obesity among individuals. (C) 2010 Elsevier GmbH. All rights reserved.
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TI Nerve Growth Factor in Rheumatic Diseases
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DE nerve growth factor; review; neurogenic inflammation; rheumatic diseases
ID tumor-necrosis-factor; systemic-lupus-erythematosus; gene-related peptide; affinity neurotrophin receptor; trk protooncogene product; factor messenger-rna; dorsal-root ganglia; mast-cells; factor ngf; tnf-alpha
AB Objectives: The nervous system modulates the immune response in many autoimmune syndromes by neurogenic inflammation. One of the pivotal mediators is nerve growth factor (NGF), which is known for its effects on neuronal survival and growth. There is considerable evidence that NGF acts as an important mediator of many immune responses. This article reviews the role of NGF in rheumatic diseases and strategies for potential therapeutic interventions. Methods: We conducted a

database search using Medline and Medpilot. Eight hundred abstracts containing the keyword NGF and 1 of the following terms were reviewed: arthritis, neurogenic inflammation, rheumatoid arthritis, osteoarthritis, collagen arthritis, arteritis, psoriasis, psoriatic arthritis, Sjogren syndrome, systemic lupus erythematosus, gout, osteoporosis, lower back pain, lumbar disc herniation, nerve root compression, spondyloarthritis, spondylarthropathy, algoneurodystrophy, fibromyalgia, Kawasaki syndrome, polyarteritis nodosa, cytokine, vasculitis, pain, therapy, and antagonist. Articles were analyzed based on relevance and content. Most clinical trials and studies with human specimens were included. Studies with experimental animal models were selected if they contained relevant data. Results: NGF is overexpressed in many inflammatory and degenerative rheumatic diseases. Concentrations differ to some extent and sometimes even show contradictory results. NGF is found in serum, synovial fluid, and cerebrospinal fluid, and tissue specimens. NGF concentrations can be correlated with the extent of inflammation and/or clinical activity in many conditions. In rheumatoid arthritis, NGF levels are significantly higher as compared with osteoarthritis. Conclusions: NGF is a significant mediator and modulator of inflammation. NGF sometimes shows detrimental and sometimes regenerative activity. These findings indicate potential therapeutic interventions using either NGF antagonists or recombinant NGF. (C) 2010 Published by Elsevier Inc. Semin Arthritis Rheum 40:109-126

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TI Small molecules for bone diseases
SO EXPERT OPINION ON THERAPEUTIC PATENTS
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DT Review
DE alpha(v)beta(3) antagonists; bisphosphonate; bone disease; cathepsin K; cyclooxygenase-2; MMP; prostaglandin EP4 receptor; secreted Frizzled-related protein; vacuolar H-ATPase
ID nonpeptide alpha(v)beta(3) antagonists; solid-phase synthesis; frizzled-related protein-1; cathepsin-k inhibitors; vacuolar h+-atpase; matrix-metalloproteinase inhibitors; rhinovirus 3c protease; biological evaluation; selective inhibitors; postmenopausal women
AB Importance of the field: Bones play many roles in the body, providing structure, protecting organs, anchoring muscles and storing calcium. Over 100 million people worldwide suffer from bone diseases, mainly osteoporosis, cancer-related bone loss, osteoarthritis and inflammatory arthritis. Osteoporosis itself has no specific symptoms, and the main consequence is the increased risk of bone fractures. Therefore, the prevention of bone diseases is important to maintain the quality of life in the human society. However, treatment options are still insufficient. Areas covered in this review: This review article gives a summary of the low molecular mass modulators of bone diseases targets disclosed in patent applications and articles, mainly during the last 5 years. What the reader will gain: Readers will rapidly gain an overview of these modulators not only for historical targets, but also of emerging and revisited targets. Readers will also be able to see the current research trend and the main players in this field. Take home message: Drug discovery for bone diseases has made progress in the last years. The research area has dynamically shifted from historical targets (bisphosphonate, parathyroid hormone and calcitonin) to newly confirmed targets or targets re-visited which were biologically validated in the past. Cathepsin K inhibitors should be very close to launching in the market.
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TI APPLICATIONS OF INTRANASAL LOW INTENSITY LASER THERAPY IN SPORTS MEDICINE
SO JOURNAL OF INNOVATIVE OPTICAL HEALTH SCIENCES
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DT Review
DE Photobiomodulation; homeostasis; nicotinamide adenine dinucleotide; sirtuin 1; sports medicine
ID low-level laser; traumatic brain-injury; onset muscle soreness; sirtuin 1; knee osteoarthritis; mouse model; melatonin; supplementation; inflammation; osteoporosis
AB Function-specific homeostasis (FSH) has been defined as a negative-feedback response of a biosystem to maintain its interior function-specific conditions so that the function is perfectly performed. There is no photobiomodulation of intranasal low intensity laser therapy (ILILT) on a function in its FSH, but ILILT could modulate a function far from its FSH. This rehabilitation has been found to be mediated by the ratio of intracellular nicotinamide adenine dinucleotide (NAD(+)) and its reduced form NADH, NAD(+)/NADH, and then sirtuin 1 (SIRT1). There might be FSH-specific NAD(+)/NADH (FSN) and SIRT1 activity (FSA). ILILT might enhance NAD(+)/NADH and SIRT1 activity until they arrive at FSN and FSA, respectively. The NAD(+)/NADH and SIRT1 activity of related cells of many athletic diseases such as upper respiratory tract infection, asthma, osteoarthritis, exercise-induced muscle damage, wound, traumatic brain injury, and osteoporosis are lower than FSN and FSA, respectively. Therefore, there may be therapeutic effects of ILILT on those athletic diseases. Furthermore, many phenomena and the ILILT mechanism have been integrated to support the prophylaxis effects of ILILT on the swine-origin influenza A (H1N1).
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TI Measurement of Foot Bone Mineral Density in Rheumatoid Arthritis: Its Application and Clinical Relevance
SO TURKISH JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE Foot; bone mineral density; DEXA; rheumatoid arthritis
ID x-ray absorptiometry; 1987 revised criteria; scoring methods; hand; osteoporosis; densitometry; erosions; mass; associations; radiographs
AB Objective: Hand and foot joints are the primary targets in rheumatoid arthritis (RA) and decrease in the periarticular bone mineral density (BMD) is one of the earliest and considerable change in the affected joint. This study aimed to assess the relationship between foot bone mineral density (fBMD) measured by Dual Energy X-ray absorptiometry (DEXA) and BMD at axial sites, disease activity, functional status and quality of life in patients with RA Materials and Methods: 50 patients with RA, 40 age-and sex-matched patients with osteoarthritis (OA) and 14 voluntary healthy individuals were included in the study. C-reactive protein, erythrocyte sedimentation rate (ESR), Ritchie Articular Index (RAI), Health Assesment Questionnare (HAQ), and Foot Function Index (FFI) were measured. X-ray of the feet was scored by Larsen and Sharp/van der Heijde methods. Axial and fBMD were measured by DXA. Results: The results of the present study revealed that Turkish patients with RA carrying SE with HLA-DRB1 genes is significantly related with the production of anti-CCP. The diagnostic sensitivity and specificity of anti-CCP for RA is determined as 73,3% and 100% respectively. Conclusion: These results suggest for the first time that foot BMD measurement by DEXA is a useful and precise method. Foot BMD may reflect both localized and generalized bone loss and may be a potential outcome measure particularly in patients with marked foot involvement. (Turk J Rheumatol 2010; 25: 56-62)
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TI Impact of knee and low back pain on health-related quality of life in Japanese women: the Research on Osteoarthritis Against Disability (ROAD)
SO MODERN RHEUMATOLOGY
LA English
DT Article
DE Epidemiology; Knee; Pain; Osteoarthritis; Quality of life
ID middle-aged women; postmenopausal women; vertebral fractures; elderly subjects; bone-marrow; osteoporosis; distress; hip; association; prevalence
AB Although knee and low back pain are major public health issues, little information is available on their impact on the quality of life (QOL). We have investigated the impact of knee and low back pain on the QOL in Japanese women by assessing the associations between knee pain and low back pain and various QOL domains using measures such as the Medical Outcomes Study Short Form-8, EuroQOL, and the Western Ontario and McMaster Universities Osteoarthritis Index. From the 3,040 Japanese women participating in the Research on Osteoarthritis Against Disability (ROAD) study, we analyzed data on 1,369 women > 40 years old (mean age 68.4 years). We further examined the associations of Kellgren-Lawrence (KL) grade at the knee and lumbar spine and the presence of vertebral fracture (VFx) with the magnitude of QOL loss in women with knee pain and low back pain, respectively. Knee pain and low back pain were found to be significantly associated with lower QOL scores among the women comprising the study cohort. In women with knee pain KL = 4, knee osteoarthritis was strongly associated with the magnitude of QOL loss. For women with low back pain, no significant associations were found between KL grade and magnitude of QOL loss, while there was a moderate association between the latter and VFx.
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TI Transcriptional regulation of bone and joint remodeling by NFAT
SO IMMUNOLOGICAL REVIEWS
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DT Review
DE NFAT; osteoporosis; osteoarthritis; rheumatoid arthritis; osteoclast; osteoblast
ID activated t-cells; endothelial growth-factor; osteoclast-associated receptor; vasoactive-intestinal-peptide; gastrin-releasing-peptide; ae2 cl-/hco3-exchanger; nuclear-factor; gene-expression; rheumatoid-arthritis; substance-p
AB Osteoporosis and arthritis are highly prevalent diseases and a significant cause of morbidity and mortality worldwide. These diseases result from aberrant tissue remodeling leading to weak, fracture-prone bones or painful, dysfunctional joints. The nuclear factor of activated T cells (NFAT) transcription factor family controls diverse biologic processes in vertebrates. Here, we review the scientific evidence that links NFAT-regulated gene transcription to bone and joint pathology. A particular emphasis is placed on the role of NFATs in bone resorption and formation by osteoclasts and osteoblasts, respectively. In addition, emerging data that connect NFATs with cartilage biology, angiogenesis, nociception, and neurogenic inflammation are explored. The goal of this article is to highlight the importance of tissue remodeling in musculoskeletal disease and situate NFAT-driven cellular responses within this context to inspire future research endeavors.
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NR 147
TC 100
Z9 115
U1 0
U2 20
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0105-2896
EI 1600-065X
J9 IMMUNOL REV
JI Immunol. Rev.
PD JAN 15
PY 2010
VL 233
IS
BP 286
EP 300
DI 10.1111/j.0105-2896.2009.00849.x
PG 15
WC Immunology
SC Immunology
GA 536TW
UT WOS:000273067700018
PM 20193006
DA 2026-02-10

ER

PT J
AU Cieza, A
Bostan, C
Oberhauser, C
Bickenbach, JE
AF Cieza, Alarcos
Bostan, Cristina
Oberhauser, Cornelia
Bickenbach, Jerome E.
TI Explaining functioning outcomes across musculoskeletal conditions: a multilevel modelling approach
SO DISABILITY AND REHABILITATION
LA English
DT Article
DE MHADIE; functioning; disability; ICF; musculoskeletal
ID chronic widespread pain; icf core set; international-classification; rheumatoid-arthritis; health icf; patient perspective; disability; validation; rehabilitation; fibromyalgia
AB Purpose. To determine whether changes in health outcomes result from changes in domains of functioning and relevant environmental factors in musculoskeletal conditions. Method. Longitudinal observational study on a convenience sample of 291 patients with low back pain, osteoarthritis, osteoporosis, rheumatoid arthritis and chronic widespread pain. The study was part of the MHADIE project. Data collection was performed at baseline, after 4 and 8 weeks using the ICF Core Sets for the corresponding musculoskeletal conditions. Multilevel models for change were used to determine which ICF categories explain the variability and change over time of the general, physical and mental health according to the SF-36. Results. There are only small fluctuations in the health outcomes. These are related to functions of the locomotor apparatus, such as muscle power, and to activities and participation domains related to them, such as lifting and carrying objects. A large amount of baseline variance is explained with a relatively small number of ICF categories of functioning. Conclusions. This study presents a list of functioning problems and environmental factors relevant to map out both the patterns and the variations in the experience of living with a chronic and painful condition. These are intervention targets common across MSC conditions.
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World Health Organization, 2001, INT CLASS FUNCT DIS, V0, P0
NR 25
TC 6
Z9 7
U1 0
U2 7
PU TAYLOR & FRANCIS LTD
PI ABINGDON
PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
SN 0963-8288
EI 1464-5165
J9 DISABIL REHABIL
JI Disabil. Rehabil.
PD JUN 15

PY 2010
VL 32
IS
BP S85
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DI 10.3109/09638288.2010.515702
PG 9
WC Rehabilitation
SC Rehabilitation
GA 671HR
UT WOS:000283492200011
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ER

PT J
AU Henry, MJ
Pasco, JA
Korn, S
Gibson, JE
Kotowicz, MA
Nicholson, GC
AF Henry, M. J.
Pasco, J. A.
Korn, S.
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Kotowicz, M. A.
Nicholson, G. C.
TI Bone mineral density reference ranges for Australian men: Geelong Osteoporosis Study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Bone mineral density; Men; Normative data; Random population-based; Reference range
ID lumbar spine; multicenter osteoporosis; fracture risk; femoral-neck; women; population; osteoarthritis; femur; standardization; prevalence
AB A large population-based random sample of Australian white men was used to provide normative bone mineral density (BMD) data at multiple anatomical sites. The femoral neck BMD data are very similar to those obtained in USA non-Hispanic white males participating in the National Health and Nutrition Examination Survey III (NHANES III). The reference ranges will be suitable for similar populations. To provide normative BMD data for Australian men derived from a large population-based random sample. An age-stratified random sample of men was

recruited from the Australian electoral rolls (n = 1,467 aged 20-97 years). BMD was quantified at multiple sites using Lunar densitometers. Age-related differences in BMD were best predicted by linear relationships at the spine and hip and by quadratic functions at the whole body and forearm. At the spine, a small age-related increase in mean BMD was observed. Although in the subset with no spinal abnormalities, there was a decrease of 0.003 g/cm(2) per year from age 20. At the hip sites, mean BMD decreased at 0.001-0.006 g/cm(2) per year from age 20. At the forearm and whole body, BMD peaked at 41-47 years. Apart from a small difference in men greater than or equal to 80 years, the Australian femoral neck BMD data are not different to those obtained in USA non-Hispanic white males participating in NHANES III and were generally similar to those of large studies from Canada (CaMos) and Spain. These data supply BMD reference ranges at multiple anatomical sites that will be applicable to white Australian men and similar populations such as USA non-Hispanic white men.
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NR 22
TC 69
Z9 76
U1 0
U2 1
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD JUN 15
PY 2010
VL 21
IS 6
BP 909
EP 917
DI 10.1007/s00198-009-1042-7
PG 9
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 590DL
UT WOS:000277204100003
PM 19707703
DA 2026-02-10
ER

PT J
AU Fowkes, LA
Toms, AP
AF Fowkes, Lucy A.
Toms, Andoni P.
TI Bone marrow oedema of the knee
SO KNEE
LA English
DT Review

DE Knee; MRI; Bone marrow oedema
ID early rheumatoid-arthritis; transient osteoporosis; transitory demineralization; femoral-head; mri; osteoarthritis; osteonecrosis; classification; pattern; lesions
AB Magnetic resonance (MR) imaging is a frequently performed investigation for disease of the knee. Bone marrow oedema (BME) is a common MR finding with a number of causes including trauma, tumour, infection, inflammatory arthropathies and BME syndromes. This article illustrates the range of MR appearances of BME around the knee and describes secondary signs that allow the reader to determine the cause of disease and to distinguish BME from normal marrow signal changes.
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Zanetti M, 2000, RADIOLOGY, V215, P835, DOI 10.1148/radiology.215.3.r00jn05835
NR 41
TC 12
Z9 16
U1 0
U2 2
PU ELSEVIER SCIENCE BV
PI AMSTERDAM
PA PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
SN 0968-0160
EI
J9 KNEE
JI Knee
PD JAN 15
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IS 1

BP 1
EP 6
DI 10.1016/j.knee.2009.06.002
PG 6
WC Orthopedics; Sport Sciences; Surgery
SC Orthopedics; Sport Sciences; Surgery
GA 547HP
UT WOS:000273877900001
PM 19608420
DA 2026-02-10
ER

PT J
AU Curtis, JR
Arora, T
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Bingham, CO
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AF Curtis, Jeffrey R.
Arora, Tarun
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Bingham, Clifton O., III
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Saag, Kenneth G.
Safford, Monika
Delzell, Elizabeth
TI The delivery of evidence-based preventive care for older Americans with arthritis
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Article
ID antitumor necrosis factor; congestive-heart-failure; rheumatoid-arthritis; influenza-vaccination; osteoporosis care; factor therapy; bone mass; risk; disease; quality
AB Introduction: Previous research suggests patients with rheumatoid arthritis (RA) may receive suboptimal care with respect to preventive tests and services. We evaluated the proportion of older Americans with RA, psoriatic arthritis (PsA), and osteoarthritis (OA) receiving these services and the specialty of the providers delivering this care. Methods: Using data from 1999 to 2006 from the Medicare Chronic Conditions Warehouse, we identified persons age >/= 65 in the national

5% sample. Over the required five-year observation period, we identified tests and services recommended for older adults and the associated healthcare provider. Services of interest included dual energy x-ray absorptiometry (DXA), influenza and pneumococcal vaccination, hyperlipidemia lab testing, mammography and colonoscopy. Results: After accounting for the sampling fraction, we identified 141,140 RA, 6,300 PsA, and 770,520 OA patients eligible for analysis. Over five years, a majority of RA, PsA, and OA patients were tested for hyperlipidemia (84%, 89% and 87% respectively) and received DXA (69%, 75%, and 52%). Only approximately one-third of arthritis patients received pneumococcal vaccination; 19% to 22% received influenza vaccination each year. Approximately 20% to 35% of arthritis patients never underwent mammography and colonoscopy over five years. Concomitant care from both a rheumatologist and a primary care physician was significantly associated with a greater likelihood of receiving almost all preventive tests and services. Conclusions: Among older Americans on Medicare, the absolute proportion of persons with arthritis receiving various recommended preventive services and screening tests was substantially less than 100%. Improved co-management between primary care and arthritis physicians may in part improve the delivery of preventive care for arthritis patients, but novel systematic interventions in this area are needed.
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NR 47
TC 32

Z9 41
U1 0
U2 1
PU BMC
PI LONDON
PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
SN 1478-6354
EI 1478-6362
J9 ARTHRITIS RES THER
JI Arthritis Res. Ther.
PD JUN 15
PY 2010
VL 12
IS 4
BP
EP
DI 10.1186/ar3086
PG 9
WC Rheumatology
SC Rheumatology
GA 675PB
UT WOS:000283841500018
PM 20637072
DA 2026-02-10
ER

PT J
AU Rozental, TD
AF Rozental, Tamara D.
TI Gender-specific Issues in Orthopaedic Surgery: Editorial Comment
SO CLINICAL ORTHOPAEDICS AND RELATED RESEARCH
LA English
DT Article
ID knee arthroplasty; women; men; sex; osteoarthritis; osteoporosis; fractures; hip
C1 Harvard Univ, Sch Med, Beth Israel Deaconess Med Ctr, Dept Orthopaed Surg, Boston, MA 02215 USA.
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Tosi LL, 2005, J BONE JOINT SURG AM, V87A, P1631, DOI 10.2106/JBJS.E.00218
NR 14
TC 2
Z9 2
U1 0
U2 2
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0009-921X
EI
J9 CLIN ORTHOP RELAT R
JI Clin. Orthop. Rel. Res.
PD JUL 15
PY 2010
VL 468
IS 7
BP 1727
EP 1728
DI 10.1007/s11999-010-1237-4
PG 2
WC Orthopedics; Surgery
SC Orthopedics; Surgery
GA 607QM
UT WOS:000278521400001
PM 20108132

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ER

PT J
AU Brach, M
Sabariego, C
Stuckl, G
AF Brach, M.
Sabariego, C.
Stuckl, G.
TI Development of an Instrument to Collect Health Care Resource use Data in the Context of Rehabilitation
SO PHYSIKALISCHE MEDIZIN REHABILITATIONSMEDIZIN KURORTMEDIZIN
LA English
DT Article
DE health resource use; data collection; cost measure; rehabilitation; economic evaluation
ID low-back-pain; rheumatoid-arthritis; economic-evaluation; cost assessment; questionnaire; accuracy; illness; records
AB Purpose: The objective of this paper is to describe the development of an instrument to collect health resource utilization data in rehabilitation research and to discuss lessons learned. Materials and Methods: The questionnaire was developed to collect data about health resource use aiming at the alongside economic evaluations of 5 rehabilitation studies. Considering the health condition of study patients, the specific questions of associated studies and the methodological standards proposed by the "Working Group Methods in Health Economic Evaluation" (MEA), it was decided which health resource use components should be part of the questionnaire and which recall period would be adequate. Health resource use information was assessed in order to calculate direct medical, direct non medical and indirect costs. Results: The standardized self-administered retrospective health resource use assessment questionnaire was answered by a total of 1 042 subjects with one of the following indications: osteoarthritis, osteoporosis, back pain, cancer, fibromyalgia or brain/cranial traumata. Discussion: Although the questionnaire was adapted for each rehabilitation study, it could be learned that the development of a standardized general brief questionnaire to collect health resource use with fixed cost categories is of fundamental importance in order to facilitate comparability across indications and studies in rehabilitation. Conclusions: The instrument to collect health resource utilization provided enough information to calculate direct medical, direct non medical and indirect costs. The core version omitting disease-specific aspects could serve as a starting point towards a standardized and validated, general, self-administered questionnaire suitable for alongside comparative economic evaluations in rehabilitation.
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NR 27
TC 3
Z9 3
U1 1
U2 5
PU GEORG THIEME VERLAG KG
PI STUTTGART
PA RUDIGERSTR 14, D-70469 STUTTGART, GERMANY
SN 0940-6689
EI 1439-085X
J9 PHYS MED REHAB KUROR
JI Physik. Med. Rehabilitationsmed. Kurort.
PD OCT 15
PY 2010
VL 20
IS 5
BP 256
EP 261
DI 10.1055/s-0030-1261887
PG 6
WC Rehabilitation; Sport Sciences
SC Rehabilitation; Sport Sciences
GA 671PJ
UT WOS:000283518500002
DA 2026-02-10
ER

PT J
AU Berry, PA
Maciewicz, RA
Cicuttini, FM
Jones, MD
Hellawell, CJ
Wluka, A
AF Berry, Patricia A.
Maciewicz, Rose A.
Cicuttini, Flavia M.
Jones, Mark D.
Hellawell, Caroline J.
Wluka, Anita
TI Markers of Bone Formation and Resorption Identify Subgroups of Patients with Clinical Knee Osteoarthritis Who Have Reduced Rates of Cartilage Loss
SO JOURNAL OF RHEUMATOLOGY
LA English

DT Article
DE OSTEOARTHRITIS; BONE METABOLISM; MAGNETIC RESONANCE IMAGING; PROGRESSION
ID biochemical markers; turnover markers; marrow lesions; joint damage; iliac crest; progression; collagen; women; osteoporosis; metabolism
AB Objective. To determine whether serum markers of bone formation and resorption, used individually or in combination, can be used to identify subgroups who lose cartilage volume at different rates over 2 years within a knee osteoarthritis (OA) population. Methods. Changes in cartilage volume over 2 years were measured in 117 subjects with knee OA using magnetic resonance imaging. We examined relationships between Change in cartilage volume and baseline serum markers of bone formation [intact N-terminal propeptide of type I procollagen (PINP) and osteocalcin] and resorption [N-telopeptide of type I collagen (NTX-I), C-telopeptide of type I collagen (CTX-I), and C-telopeptide of type I collagen (ICTP). Results. The baseline markers of bone formation, PINP and osteocalcin ($p = 0.02$, $p = 0.01$, respectively), and the baseline markers of bone resorption. CTX-I and NTX-I ($p = 0.02$ for both), were significantly associated with reduced cartilage loss. There were no significant associations between baseline ratios of bone formation to resorption markers and cartilage loss. However, when subjects were divided into subgroups with high or low bone formation markers (based on levels of marker mean or < mean for the population, respectively), in the subgroup with high PINP there was a significant association between increasing bone resorption markers CTX-I and NTX-I and reduced cartilage loss ($p = 0.02$, $p = 0.001$, respectively). Similarly, in the subgroup with high osteocalcin, there was a significant association between increasing CTX-I and NTX-I and reduced cartilage loss ($p = 0.02$, $p = 0.003$, respectively). In contrast, in subgroups with low bone formation markers, no significant associations were obtained between markers of bone resorption and cartilage loss. Conclusion. Overall, the results suggest that higher bone remodeling (i.e., higher serum levels of bone formation and resorption) is associated with reduced cartilage loss. Considering markers of bone formation and resorption together, it is possible to identify subgroups within the OA population who have reduced rates of cartilage loss. (First Release April 15 2010; J Rheumatol 2010;37:1252-9; doi:10.3899/jrheum.091055)
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FU NHMRC [980914, 545876]; Australian Post-graduate Association Scholarship; National Health and Medical Research Council (NHMRC) [980914, 545876] Funding

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TC 31
Z9 36
U1 0
U2 9
PU J RHEUMATOL PUBL CO
PI TORONTO
PA 365 BLOOR ST E, STE 901, TORONTO, ONTARIO M4W 3L4, CANADA
SN 0315-162X
EI 1499-2752
J9 J RHEUMATOL
JI J. Rheumatol.
PD JUN 15
PY 2010
VL 37
IS 6
BP 1252
EP 1259
DI 10.3899/jrheum.091055
PG 8
WC Rheumatology
SC Rheumatology
GA 616FO
UT WOS:000279194600028
PM 20395641
DA 2026-02-10
ER

PT J
AU Li, X
Yang, SB
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Chen, TL
Su, MM
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Jia, W
AF Li, Xin
Yang, Songbing
Qiu, Yunping
Zhao, Tie
Chen, Tianlu

Su, Mingming
Chu, Lixi
Lv, Aiping
Liu, Ping
Jia, Wei
TI Urinary metabolomics as a potentially novel diagnostic and stratification tool for knee osteoarthritis
SO METABOLOMICS
LA English
DT Article
DE Metabolomics; Osteoarthritis; Phenotype; Stratification; Biomarker; Histamine
ID histamine; chondrocytes; disease; acid; classification; osteoporosis; metabolism; biomarkers; cartilage; reveals
AB Metabolomics has been used as a tool in disease diagnosis and phenotype prediction. A urinary metabolomic study based on GC-MS in combination with multivariate statistics was used here to classify between knee osteoarthritis (OA) and healthy controls. OPLS-DA of the spectral data showed distinct metabolic profile variations between OA patients and healthy controls and between two OA phenotypes. Differential metabolites reveal up-regulated TCA cycle associated with OA and histamine metabolism disorders accompanied with knee effusion symptoms. This metabolomic method is potentially applicable as a novel strategy for OA diagnosis and patient stratification.
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FU National Basic Research Program of China [2007CB914700, 2006DFA02700]; E-institutes of Shanghai Municipal Education Commission [E03008]
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Yi LZ, 2006, FEBS LETT, V580, P6837, DOI 10.1016/j.febslet.2006.11.043
NR 44
TC 39
Z9 47
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PT J
AU Shen, WW
Zhao, JH
AF Shen, Wei-Wei
Zhao, Jian-Hua

TI Pulsed Electromagnetic Fields Stimulation Affects BMD and Local Factor Production of Rats With Disuse Osteoporosis
SO BIOELECTROMAGNETICS
LA English
DT Article
DE pulsed electromagnetic fields; disuse osteoporosis; bone mineral density; interleukin-6; transforming growth factor-beta 1
ID hormone replacement therapy; double-blind; bone; osteoarthritis; calcitonin; model; risk
AB Pulsed electromagnetic fields (PEMF) have been used widely to treat nonunion fractures and related problems in bone heating, as a biological and physical method. With the use of Helmholtz coils and PEMF stimulators to generate uniform time-varying electromagnetic fields, the effects of extremely low frequency electromagnetic fields on bone m ineral density (BMD) and local factor production in disuse osteoporosis (DOP) rats were investigated. Eighty 4-month-old female Sprague Dawley (SD) rats were randomly divided into intact (INT) group, DOP group, calcitonin-treated (CT) group, and PEMF stimulation group. The right hindlimbs of all the rats were immobilized by tibia-tail fixation except for those rats in the INT group. Rats in the CT group were injected with calcitonin (2 IU/kg, i.p., once a day) and rats in the PEMF group were irradiated with PEMF immediately postoperative. The BMD, serum transforming growth factor-beta 1 (TGF-beta 1), and interleukin-6 (IL-6) concentration of the proximal femur were measured 1, 2, 4, and 8 weeks after treatment. Compared with the CT and DOP groups, the BMD and serum TGF-beta 1 concentration in the PEMF group increased significantly after 8 weeks. The IL-6 concentration in the DOP group was elevated significantly after operation. The PEMF group showed significantly lower IL-6 level than the DOP group. The results found demonstrate that PEMF stimulation can efficiently suppress bone mass loss. We, therefore, conclude that PEMF may affect bone remodeling process through promoting TGF-beta 1 secretion and inhibiting IL-6 expression. Bioelectromagnetics 31:113-119, 2010. (C) 2009 Wiley-Liss, Inc.
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AU Peyrin, F
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Chappard, Christine
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TI Local plate/rod descriptors of 3D trabecular bone micro-CT images from medial axis topologic analysis
SO MEDICAL PHYSICS
LA English
DT Article
DE three-dimensional image analysis; x-ray computed tomography
ID skeleton graph analysis; cancellous bone; architecture; quantification; osteoarthritis; decomposition; thickness; models; women; spine
AB Purpose: Trabecular bone microarchitecture is made of a complex network of plate and rod structures evolving with age and disease. The purpose of this article is to propose a new 3D local analysis method for the quantitative assessment of parameters related to the geometry of trabecular bone microarchitecture. Methods: The method is based on the topologic classification of the medial axis of the 3D image into branches, rods, and plates. Thanks to the reversibility of the medial axis, the classification is next extended to the whole 3D image. Finally, the percentages of rods and plates as well as their mean thicknesses are calculated. The method was applied both to simulated test images and 3D micro-CT images of human trabecular bone. Results: The classification of simulated phantoms made of plates and rods shows that the maximum error in the quantitative percentages of plate

and rods is less than 6% and smaller than with the structure model index (SMI). Micro-CT images of human femoral bone taken in osteoporosis and early or advanced osteoarthritis were analyzed. Despite the large physiological variability, the present method avoids the underestimation of rods observed with other local methods. The relative percentages of rods and plates were not significantly different between osteoarthritis and osteoporotic groups, whereas their absolute percentages were in relation to an increase of rod and plate thicknesses in advanced osteoarthritis with also higher relative and absolute number of nodes. Conclusions: The proposed method is model-independent, robust to surface irregularities, and enables geometrical characterization of not only skeletal structures but entire 3D images. Its application provided more accurate results than the standard SMI on simple simulated phantoms, but the discrepancy observed on the advanced osteoarthritis group raises questions that will require further investigations. The systematic use of such a local method in the characterization of trabecular bone samples could provide new insight in bone microarchitecture changes related to bone diseases or to those induced by drugs or therapy. (C) 2010 American Association of Physicists in Medicine. [DOI: 10.1118/1.3447728]
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PT J
AU Ichchou, L
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TI Relationship between spine osteoarthritis, bone mineral density and bone turn over markers in post menopausal women
SO BMC WOMENS HEALTH
LA English
DT Article
ID postmenopausal women; disc degeneration; cortical bone; lumbar spine; iliac crest; elderly-men; hip; osteoporosis; fracture
AB Background: Several studies have observed an inverse relationship between osteoporosis and spinal osteoarthritis, the latter being considered as possibly delaying the development of osteoporosis. The aim of this study was to determine the association between individual radiographic features of spine degeneration, bone mineral density (BMD) and bone-turn over markers. Methods: It was a cross sectional study of 277 post menopausal women. BMD of all patients was assessed at the spine and hip using dual-energy X-ray absorptiometry. Lateral spinal radiographs were evaluated for features of disc degeneration. Each vertebral level from L1/2 to L4/5 was assessed for the presence and severity of osteophytes and disc space narrowing (DSN). For Bone turn-over markers, we assessed serum osteocalcin and C-terminal cross-linking telopeptide of type I collagen (CTX). Linear regressions and partial correlation were used respectively to determine the association between each of disc degeneration features, BMD, and both CTX and osteocalcin. Results: Mean age of patients was 58.7 +/- 7.7 years. Eighty four

patients (31.2%) were osteoporotic and 88.44% had spine osteoarthritis. At all measured sites, there was an increase in BMD with increasing severity of disc narrowing while there was no association between severity of osteophytes and BMD. After adjustment for age and BMI, there was a significant negative correlation between CTX and DSN. However, no significant correlation was found between CTX and osteophytes and between osteocalcin and both osteophytes or DSN. Conclusion: In post menopausal women the severity of disc narrowing, but not osteophytes, is associated with a generalized increase in BMD and a decreased rate of bone resorption. These results are consistent with the hypothesis that osteoarthritis, through DSN, has a protective effect against bone loss, mediated by a lower rate of bone resorption. However, spine BMD is not a relevant surrogate marker for the assessment of osteoporosis in the spine in patients with osteoarthritis and debate as to the relationship between OA and OP is still open because of the contradictory data in the literature.
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TC 35
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PU BMC
PI LONDON
PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
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AU Bhavnani, V
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Fisher, Brian
TI Patient factors in the implementation of decision aids in general practice: a qualitative study
SO HEALTH EXPECTATIONS
LA English
DT Article
DE decision aids; focus groups; general practice; onus of responsibility; suitability
ID patients preferences; breast-cancer; involvement; choice; care; participation; conflict; therapy; people; trial
AB Background Decision aids (DAs) have been developed to help patients make treatment decisions. Research shows that they are effective in increasing patients' knowledge of treatment options without raising anxiety or conflict. However, they have not been routinely adopted for use in general practice in the UK and there are few reports addressing strategies to introduce them. Objective To examine patients' views about a variety of DAs for different conditions (heart disease, osteoporosis, osteoarthritis and breast cancer) in order to inform a strategy to introduce them into general practice. Setting and participants General practice patients over the age of 18 years being or having been treated for one of the conditions above. Methods Qualitative study involving 12 focus groups with 77 patients evaluating decision aids relevant to their conditions. A semi-structured interview guide was used to generate discussions about the applicability of the DAs in routine general practice. Results Patients welcomed DAs for their educational and informational content. Reactions to the DAs were influenced by patients' own personal desires for involvement. The main concerns were that the use of DAs would potentially shift the onus of decision making responsibility on to the patient and about the practical challenges to implementation. Conclusions Clinicians will need to make explicit to patients that DAs are an adjunct to routine care and not a replacement, and therefore do not represent a derogation of responsibility. DAs need to be used as an integral part of the communication and support process for patients who want them.
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NR 48
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Z9 28
U1 0
U2 7
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 1369-6513
EI 1369-7625
J9 HEALTH EXPECT
JI Health Expect.
PD MAR 15
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BP 45
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PG 10
WC Health Care Sciences & Services; Health Policy & Services; Public, Environmental & Occupational Health
SC Health Care Sciences & Services; Public, Environmental & Occupational Health
GA 557LI
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Dai, L. -Y.
TI Micro-CT and mechanical evaluation of subchondral trabecular bone structure between postmenopausal women with osteoarthritis and osteoporosis
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Menopause; Micro-CT; Microstructure; Osteoarthritis; Osteoporosis
ID tibial cancellous bone; age-related-changes; femoral-head; microstructure; metabolism; estrogen; model; hip; men; quantification
AB An inverse relationship between osteoarthritis and osteoporosis has been debated over years. The microstructure of the femoral heads from postmenopausal osteoarthritic and osteoporotic women was evaluated with micro-CT. Significant differences were observed in microstructural parameters between them. Different microstructure might relate to the opposite bone defects in osteoarthritis and osteoporosis. This study was undertaken to verify the inverse relationship between osteoarthritis (OA) and osteoporosis (OP) by comparing the structural and mechanical indices. Femoral head specimens were obtained from 17 postmenopausal women (OA, n = 8; OP, n = 9) during hip surgery. The microstructural parameters were measured with micro-CT. Mechanical test was performed after bone cube scanning. Significant difference in bone volume fraction (BV/TV) and trabecular thickness was noted between OA and OP groups. Structure model index decreased in OA, and increased in OP. The higher apparent density (AD) and lower material density (MD) were also shown in OA. Different from OP, positive correlation were noted between connectivity density and mechanical indices in OA. In OA group, BV/TV was associated with Young's modulus and AD, while trabecular number was the only parameter that correlated with MD. However, in OP group, only BV/TV correlated with yield strength, AD, and MD. We observed the difference in microstructure between postmenopausal women with OA and OP, which might relate to the opposite bone defects in OA and OP. BV/TV might play an important role in mechanical properties of the subchondral bone in either OA or OP.
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NR 37
TC 94
Z9 106
U1 0
U2 32
PU SPRINGER LONDON LTD
PI LONDON
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TI Treatment of osteoporosis: recognizing and managing cutaneous adverse reactions and drug-induced hypersensitivity
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Review
DE Anti-osteoporotic treatments; Cutaneous adverse reactions; Hypersensitivity reactions; Osteoporosis
ID toxic epidermal necrolysis; stevens-johnson-syndrome; strontium ranelate; postmenopausal women; systemic symptoms; alendronate; fracture; england; rash; eosinophilia
AB Cutaneous adverse reactions are reported for many treatments including antiosteoporotic agents. This position paper includes an algorithm for their recognition. With early recognition and proper management, including immediate and permanent withdrawal of the culprit agent, accompanied by hospitalization, rehydration, and systemic corticosteroids, if necessary, the prognosis is good. Cutaneous adverse reactions are reported for many therapeutic agents and observed in between 0% and 8% of treated patients depending on the drug. The antiosteoporotic agents are reputed to be safe in terms of cutaneous effects; however, there have been a number of case reports of cutaneous adverse reactions, which merit consideration. This was the subject of a Working Group meeting of the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis in April 2009, to focus on the impact of cutaneous adverse reactions and drug-induced hypersensitivity in the management of postmenopausal osteoporosis. We prepared this position paper following these discussions, and include an algorithm for their recognition. We reviewed cutaneous adverse reactions observed with antiosteoporotic agents, including information from case reports, regulatory documents, and pharmacovigilance. The cutaneous adverse reactions range from benign reactions including exanthematous or maculopapular eruption (drug rash), photosensitivity, and urticaria to the severe and potentially life-threatening reactions, angioedema, drug rash with eosinophilia and systemic symptoms (DRESS), Stevens Johnson syndrome (SJS), and toxic epidermal necrolysis (TEN). Review of available evidence shows that cutaneous adverse reactions occur with all commonly used antiosteoporotic agents. Notably, there are reports of SJS and TEN for bisphosphonates, and of DRESS and TEN for strontium ranelate. These severe reactions remain very rare (< 1 in 10,000 cases). With early recognition and proper management, including immediate and permanent withdrawal of the culprit agent, accompanied by hospitalization and rehydration and systemic corticosteroids if necessary, the prognosis is good.
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Z9 57
U1 0
U2 9
PU SPRINGER LONDON LTD
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PT J
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TI The effects of bone turnover rate on subchondral trabecular bone structure and cartilage damage in the osteoarthritis rat model
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE Iodoacetate; Trabeculae; Osteoarthritis; Rat; Ovariectomy; Bisphosphonate; Bone turnover rate

ID articular-cartilage; knee osteoarthritis; osteoporosis; bisphosphonates; tomography; deficiency; strength; tissue; joints
AB The effects of bone turnover rate on subchondral trabecular changes and cartilage destruction were evaluated in an iodoacetate-induced osteoarthritis rat model. Thirty female rats were randomly divided into three groups as the ovariectomized group, the no-treatment group and the bisphosphonate medication group. Arthritis was induced by a single intra-articular iodoacetate injection into the right tibiofemoral joint. Eight weeks after this injection, tibiofemoral joints on both sides were scanned with a micro-CT. Subchondral trabecular indices were measured on both sides of the tibial lateral condyle epiphysis. In the ovariectomized group, the percentage of bone volume, trabecular thickness and trabecular bone pattern factor of the arthritic sides were lower than those of the control sides, while trabecular separation and structure model index of the arthritic sides were higher than those of the control sides ($p < 0.05$). In the no-treatment group, only trabecular thickness of the arthritic sides was lower than in the control sides ($p < 0.05$). In the bisphosphonate medication group, trabecular indices were no different between the arthritic and control sides. Articular cartilage destruction and severity of arthritis increased significantly in the order: ovariectomized group < no-treatment group < bisphosphonate medication group ($p < 0.05$). After osteoarthritis development, severities of subchondral trabecular changes appeared to be strongly affected by bone turnover rate. Furthermore, a correlation was found between cartilage destruction severity and subchondral trabecular change in the intra-articular iodoacetate-injected osteoarthritis rat model.
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U2 10
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WC Rheumatology
SC Rheumatology
GA 613FE
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PT J
AU Oka, H
Muraki, S
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TI Normal and threshold values of radiographic parameters for knee osteoarthritis using a computer-assisted measuring system (KOACAD): the ROAD study
SO JOURNAL OF ORTHOPAEDIC SCIENCE
LA English
DT Article
ID women; risk
AB Background. Although radiographic severity of the knee is commonly determined by the Kellgren-Lawrence (KL) grading scale, it does not separately assess joint space narrowing or osteophyte formation. The present study aimed to establish normal and threshold values of radiographic parameters for knee osteoarthritis (OA) using the knee osteoarthritis computer-aided diagnosis (KOACAD) measuring system on a large-scale population-based cohort of the Research on Osteoarthritis/Osteoporosis Against Disability (ROAD) population.

Methods. From a total of 3040 participants in the ROAD study, standing anteroposterior radiographs of the knee were obtained from 2975 subjects (1041 men, 1934 women) in the ROAD cohort, and 5950 knees were evaluated using the KOACAD system to obtain the medial and lateral minimum joint space width (mJSW), medial and lateral joint space area (JSA), osteophyte area (OPA), and femorotibial angle (FTA). These indices were compared with the KL scores, and cutoff values for radiographic knee OA were determined by receiver operating characteristic (ROC) curve analysis. Results. The mean KOACAD parameters for KL = 0 were as follows: medial mJSW 3.70 mm; lateral mJSW 4.77 mm, medial JSA 125.0 mm(2), lateral JSA 140.0 mm(2), OPA 0, and FTA 176.1 degrees in men; for women they were medial mJSW 3.26 mm, lateral mJSW 4.22 mm, medial JSA 100.9 mm(2), lateral JSA 111.0 mm(2), OPA 0, and FTA 174.9 degrees. Threshold values for KL >= 2 provided by ROC curve analysis with area under the curve (AUC) > 0.7 were medial mJSW 2.8 mm and medial JSA 107.3 mm(2) in men and medial mJSW 2.7 mm in women. Those for KL >= 3 were medial mJSW 2.1 mm, medial JSA 81.1 mm(2), OPA 2.4 mm(2), and FTA 179.6 degrees in men; and medial mJSW 2.1 mm, medial JSA 66.6 mm(2), OPA 2.5 mm(2), and FTA 178.1 degrees in women. We then determined the cutoff values for medial knee OA and lateral knee OA. Conclusions. The present study established normal and threshold values of parameters for knee OA using an automated computer-assisted program on plain radiographs.
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NR 19
TC 29
Z9 31
U1 0
U2 2
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PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
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J9 J ORTHOP SCI
JI J. Orthop. Sci.
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WC Orthopedics
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PT J
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TI Improving care for people with osteoarthritis of the hip and knee: How has national policy for osteoarthritis been translated into service models in Australia?
SO INTERNATIONAL JOURNAL OF RHEUMATIC DISEASES
LA English
DT Review
DE clinical aspects; education; epidemiology; health services and health care economics; osteoarthritis
ID chronic disease management; quality-of-life; replacement surgery; recommendations; physicians; burden
AB There is strong rationale for improving care for people with chronic conditions, including osteoarthritis (OA). Successful implementation of healthcare reform requires new concepts and directions that are strongly supported by policy, new models of care (service redesign) and changes in day-to-day practice (healthcare provider and patient practice). In this paper we discuss the extent to which policy about management of OA of the hip and knee has been translated into new service models in Australia. A structured search of government and other key health websites in Australia was performed to identify policy, funding initiatives and new services models for managing OA of the hip and knee. This search was supported by a literature review. Musculoskeletal conditions were designated a National Health Priority in Australia in 2002. Under the Better Arthritis and Osteoporosis Care initiative, Australia has developed a national policy for OA care and national evidence-based clinical practice guidelines for management of OA of the hip and knee. Only two well-described examples of new chronic disease management service models, the Osteoarthritis Clinical Pathway (OACP) model and the Osteoarthritis Hip and Knee Service (OAHKS) were identified. Primarily focused within acute care public hospital settings, these have been shown to be feasible and acceptable but have limited data on clinical impact and cost-effectiveness. While policy is extant, implementation has not been systematic and comprehensive. Clinicians have evidence-based recommendations for OA management but are poorly supported by service models to deliver these effectively and efficiently.
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NR 54
TC 30
Z9 30
U1 0
U2 7
PU WILEY-BLACKWELL
PI MALDEN

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JI Int. J. Rheum. Dis.
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WC Rheumatology
SC Rheumatology
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PT J
AU Bleicher, K
Cumming, RG
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Creasey, H. M.
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TI Lifestyle factors, medications, and disease influence bone mineral density in older men: findings from the CHAMP study

SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Aging; Bone mineral density; Exercise; Men; Population studies; Risk factors
ID risk-factors; elderly-men; physical-activity; proximal femur; lumbar spine; chinese men; determinants; fracture; hip; osteoporosis
AB Aging alone is not the only factor accounting for poor bone health in older men. There are modifiable factors and lifestyle choices that may influence bone health and result in higher bone density and lower fracture risk even in very old men. Introduction The aim of this cross-sectional analysis was to identify the factors associated with areal bone mineral density (BMD) and their relative contribution in older men. Methods The Concord Health and Ageing in Men Project is a population-based study in Sydney, Australia, involving 1,705 men aged 70-97. Data were collected using questionnaires and clinical assessments. BMD of the hip and spine was measured by dual X-ray absorptiometry. Results In multivariate regression models, BMD of the hip was associated with body weight and bone loading physical activities, but not independently with age. The positive relationship between higher BMD and recreational activities is attenuated with age. Factors independently associated with lower BMD at the hip were inability to stand from sitting, a history of kidney stones, thyroxine use, and Asian birth and at the spine, chronic obstructive pulmonary disease, paternal fracture history, and thyroxine use. Higher body weight, participation in dancing, tennis or jogging, quadriceps strength, alcohol consumption, and statin use were associated with higher hip BMD, while older age, osteoarthritis, higher body weight, and aspirin use were associated with higher spinal BMD. Conclusion Maintaining body weight, physical activity, and strength were positively associated with BMD even in very elderly men. Other parameters were also found to influence BMD, and once these were included in multivariate analysis, age was no longer associated with BMD. This suggests that age-related diseases, lifestyle choices, and medications influence BMD rather than age per se.
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NR 52
TC 29
Z9 33
U1 0
U2 10
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
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TI Raloxifene protects cultured human chondrocytes from IL-1β induced damage: A biochemical and morphological study
SO EUROPEAN JOURNAL OF PHARMACOLOGY
LA English
DT Article
DE Raloxifene; Chondrocyte; Interleukin-1 beta; Proteoglycan; Metalloproteinase-3; Nitric oxide
ID estrogen replacement therapy; human articular chondrocytes; nitric-oxide synthase; nf-kappa-b; receptor modulator; postmenopausal women; cartilage turnover; osteoarthritis; expression; knee
AB It is well known that estrogens are implicated in the pathogenesis of osteoarthritis. Raloxifene is a selective estrogen receptor modulator used in the treatment of osteoporosis, though little is known about the possible effects of raloxifene on cartilage metabolism. The aim of our study was to evaluate the possible in vitro effects of raloxifene in human osteoarthritis chondrocytes cultivated in the presence or absence of Interleukin-1 beta (IL-1 beta) (5 ng/ml). The effects of 0.1 mu M and 1 mu M of raloxifene in the culture medium were assessed using an immuno-enzymatic method for proteoglycans and metalloproteinase-3 (MMP-3), and the Griess method for nitrite. Gene expression of inducible Nitric Oxide Synthase (iNOS) was detected by real-time PCR. A morphological analysis was performed by transmission electron microscopy (TEM).

Cell viability was significantly (P<0.01) reduced by the IL-1 beta. and restored to basal levels by raloxifene at both of the concentrations used. The presence of IL-1 beta led to a significant decrease (P<0.01) in proteoglycan levels as well as a significant increase of MMP-3 and NO (P<0.01). When the cells were co-incubated with IL-1 beta and raloxifene, a significant and dose-dependent increase in proteoglycans and a reduction of MMP-3 and nitric oxide (NO) were detected. iNOS was noticeably expressed in IL-1 beta stimulated chondrocytes, while raloxifene decreased in a very significant manner the gene expression of iNOS at both of the concentrations used. The results of the biochemical evaluation were confirmed by TEM. Our data suggest that raloxifene may have a potential chondroprotective role in osteoarthritis. (C) 2011 Elsevier B.V. All rights reserved.
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PT J
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TI The increased in vitro osteoclastogenesis in patients with rheumatoid arthritis is due to increased percentage of precursors and decreased apoptosis - The In Vitro Osteoclast Differentiation in Arthritis (IODA) study
SO BONE
LA English
DT Article
DE Rheumatoid arthritis; Bone; Osteoclast; Apoptosis; CD14(+); Osteoclastogenesis; Biomarker; Diagnostic model
ID bone erosion; osteoprotegerin; cells; classification; osteoarthritis; osteoporosis; expression; cytokine; criteria; ligand
AB Increases in local and systemic bone resorption are hallmarks of rheumatoid arthritis (RA). Osteoclasts are implicated in these processes and their enhanced differentiation may contribute to bone destruction. We observed that in vitro osteoclastogenesis varies among healthy individuals and hypothesized that increased osteoclastogenesis could be a marker for the presence of RA. Our objective in the present study was to determine if in vitro osteoclastogenesis from peripheral blood mononuclear cells (PBMCs) was different in patients with RA compared to healthy controls and osteoarthritis (OA) patients. Expression of CD14 in PBMCs was quantified and PBMCs were incubated for 21 days in the presence of the osteoclastogenic cytokines M-CSF and RANKL. Differentiation on cortical bone slices permitted the analysis of bone resorption while apoptotic potential was assessed by terminal deoxynucleotidyl transferase-mediated dUTP nick end labeling. In vitro osteoclastogenesis was higher in PBMCs from RA patients compared to controls, and a similar increase was observed in the percentage of osteoclast precursors in RA patients. Osteoclasts from RA patients showed lower apoptotic rates than osteoclasts from healthy controls. No difference was observed in bone resorption activity between RA patients and controls. Interestingly, the difference in osteoclast number and apoptosis rate allowed the implementation of an algorithm capable of distinguishing patients with RA from controls. In conclusion, our study shows that osteoclast differentiation from PBMCs is enhanced in patients with RA, and this difference can be explained by both a higher percentage of osteoclast precursors in the blood and by the reduced

apoptotic potential of mature osteoclasts. (C) 2010 Elsevier Inc. All rights reserved.
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TI Osteocyte Deficiency in Hip Fractures
SO CALCIFIED TISSUE INTERNATIONAL
LA English
DT Article
DE FGF23; Osteocytes; Osteoporosis; PHEX; Sclerostin
ID femoral-neck fracture; bone-formation; sclerostin expression; gene-expression; in-vivo; pth; sost/sclerostin; osteoporosis; modulation; apoptosis
AB Osteocytes play a central role in the regulation of bone remodeling. The aim of this study was to explore osteocyte function, and particularly the expression of SOST, a Wnt inhibitor, in patients with hip fractures. Serum sclerostin levels were measured by ELISA. The expression of several osteocytic genes was studied by quantitative PCR in trabecular samples of the femoral head of patients with hip fractures, hip osteoarthritis and control subjects. The presence of sclerostin protein and activated caspase 3 was revealed by immunostaining. There were no significant differences in serum sclerostin between the three groups. Patients with fractures have fewer lacunae occupied by osteocytes (60 +/- 5% vs. 64 +/- 6% in control subjects, P = 0.014) and higher numbers of osteocytes expressing activated caspase 3, a marker of apoptosis. The proportion of sclerostin-positive lacunae was lower in patients with fractures than in control subjects (34 +/- 11% vs. 69 +/- 10%, P = 2 x 10(-8)). The proportion of sclerostin-positive osteocytes was also lower in patients. RNA transcripts of SOST, FGF23 and PHEX were also less abundant in fractures than in control bones (P = 0.002, 5 x 10(-6), and 0.04, respectively). On the contrary, in patients with osteoarthritis, there was a decreased expression of SOST and FGF23, without differences in PHEX transcripts or osteocyte numbers. Osteocyte activity is altered in patients with hip fractures, with increased osteocyte apoptosis and reduced osteocyte numbers, as well as decreased transcription of osteocytic genes.

Therefore, these results suggest that an osteocyte deficiency may play a role in the propensity to hip fractures.
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NR 39
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U1 0
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PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
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J9 CALCIFIED TISSUE INT
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AU Illich, DJ
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AF Illich, Damir J.
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TI Concise Review: Induced Pluripotent Stem Cells and Lineage Reprogramming: Prospects for Bone Regeneration
SO STEM CELLS
LA English
DT Review
DE Induced pluripotent stem cells; Lineage reprogramming; Bone regeneration; Osteogenic differentiation
ID in-vitro differentiation; osteoblast differentiation; osteogenic differentiation; gene-expression; functional cardiomyocytes; enhances osteogenesis; mesenchymal cells; nuclear transfer; trabecular bone; up-regulation
AB Bone tissue for transplantation therapies is in high demand in clinics. Osteodegenerative diseases, in particular, osteoporosis and osteoarthritis, represent serious public health issues affecting a respectable proportion of the elderly population. Furthermore, congenital indispositions from the spectrum of craniofacial malformations such as cleft palates and systemic disorders including osteogenesis imperfecta are further increasing the need for bone tissue. Additionally, the reconstruction of fractured bone elements after accidents and the consumption of bone parts during surgical tumor excisions represent frequent clinical situations with deficient availability of healthy bone tissue for therapeutic transplantations. Epigenetic reprogramming represents a powerful technology for the generation of healthy patient-specific cells to replace or repair diseased or damaged tissue. The recent generation of induced pluripotent stem cells (iPSCs) is probably the most promising among these approaches dominating the literature of current stem cell research. It allows the generation of pluripotent stem cells from adult human skin cells from which potentially all cell types of the human body could be obtained. Another technique to produce clinically interesting cell types is direct lineage reprogramming (LR) with the additional advantage that it can be

applied directly in vivo to reconstitute a damaged organ. Here, we want to present the two technologies of iPSCs and LR, to outline the current states of research, and to discuss possible strategies for their implementation in bone regeneration. STEM CELLS 2011; 29: 555-563
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NR 120
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Z9 60
U1 0
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PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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JI Stem Cells
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WC Cell & Tissue Engineering; Biotechnology & Applied Microbiology; Oncology; Cell Biology; Hematology
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AU Brennan, SL
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AF Brennan, S. L.
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TI Bone mineral density is cross sectionally associated with cartilage volume in healthy, asymptomatic adult females: Geelong Osteoporosis Study
SO BONE
LA English
DT Article
DE Bone mineral density; Knee structure; Cartilage; Defects; Adult females
ID early radiographic osteoarthritis; knee osteoarthritis; marrow lesions; surface-area; women; defects; risk; compartment; population; fracture
AB Introduction: The association between osteoporosis and osteoarthritis (OA) is controversial. Although previous studies have shown total body, lower limb, spinal and knee BMD and knee cartilage volume to be positively associated, the relationship between other distant site-specific measures of BMD and other knee structures is unknown. The aim of this study was to determine the associations between BMD at eight skeletal sites, and knee structure in asymptomatic young to

middle-aged females without any clinical signs of OA. Methods: One hundred and sixty healthy, asymptomatic females (29-50 yr) underwent magnetic resonance imaging of the knee. BMD was measured at the spine, hip, total body and forearm by dual energy X-ray absorptiometry, and at the calcaneus by quantitative ultrasound. BMD was tested for an association with cartilage volume, defects, and bone marrow lesions (BMLs). Results: Medial cartilage volume was positively associated with BMD at the spine, total body, femoral neck, and Ward's triangle (all $p<0.05$), with non-significant associations in the same direction at the trochanter ($p=0.07$). Findings in the lateral compartment were similar. The presence of medial cartilage knee defects were also associated with BMD at the spine; defects in the lateral compartment were associated with BMD at the forearm (both $p=0.05$). BMD was not associated with the presence of BMLs. No associations were observed with calcaneus BMD. Conclusions: Site-specific BMD is associated with cartilage volume at the knee in asymptomatic young to middle-aged adults, with the direction and effects trending in the same direction. The magnitude of changes correlates with clinically relevant changes. QUS defined calcaneus BMD, showed no associations with knee structure. Although systemic factors may underlie the association between knee cartilage volume and axial/lower limb BMD, these data suggest that common local, possibly biomechanical factors may also play a role. (C) 2011 Elsevier Inc. All rights reserved.
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NR 39
TC 19
Z9 21
U1 0
U2 3
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA
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J9 BONE
JI Bone
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WC Endocrinology & Metabolism
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PT J
AU Masterson, LM
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TI Autoimmune disease as a risk factor for globus pharyngeus: a cross-sectional epidemiological study
SO CLINICAL OTOLARYNGOLOGY
LA English
DT Article
ID rheumatoid-arthritis; symptom
AB Objective: To assess the prevalence and severity of globus-type symptoms in individuals who have a prior diagnosis of autoimmune disease. Design: Cross-sectional questionnaire. Participants and setting: One hundred and nine patients with autoimmune disease (rheumatoid arthritis, seronegative spondarthritis, connective tissue disease, systemic vasculitis) and 41 patients with non-autoimmune disease (osteoarthritis/osteoporosis) attending a rheumatology tertiary referral clinic at Norfolk & Norwich University Hospitals NHS Foundation Trust. The results from this study were compared to previous published figures in patients with globus pharyngeus (n = 105) and normal population (n = 174). Main outcome measures: Glasgow Edinburgh Throat Scale questionnaire; Reflux Symptom Index; Anxiety/Depression Scale. Results: Patients with autoimmune disease demonstrate a significantly higher prevalence for 5/10 symptoms on the Glasgow Edinburgh Throat scale score when compared to the non-autoimmune control group ($P < 0.01$). This significant difference increases to 9/10 symptoms when compared to published results for the normal population ($P = 0.01$). No significant difference was found when comparing the autoimmune and non-autoimmune control group reflux symptom index ($P = 0.64$) or anxiety depression scale ($P = 0.71$). Conclusion: Patients with autoimmune disease have a significantly increased prevalence of globus symptoms when compared to the healthy population. A further prospective study is required to decipher the effect of pharmacotherapy as a possible causative factor.
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AU Vaishya, R
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Singh, Ajay Pal
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Singh, Arun Pal
TI Treatment of resistant nonunion of supracondylar fractures femur by megaprosthesis
SO KNEE SURGERY SPORTS TRAUMATOLOGY ARTHROSCOPY
LA English
DT Article
DE Supracondylar fracture; Resistant nonunion; Megaprosthesis; Osteoarthritis; Arthroplasty
ID total knee arthroplasty; distal femoral nonunions; internal-fixation; elderly-patients; salvage; surgery
AB Resistant nonunion of distal femoral fractures in the elderly is a great challenge to treat because it is often associated with multiple problems like poor bone quality, arthritis, disuse osteopenia, joint contractures, and implant failure. We treated ten patients with megaprosthesis and report the outcome. Ten elderly patients of resistant nonunion of distal femoral fractures with arthritis knee were treated with megaprosthesis. The median patient age was 74 years (68-85 years). All these patients had undergone at least two prior operative procedures and were operated by us, 24-33 months following the first index surgery. Modular Resection System was used in all the patients. Eight patients were available for follow-up. Median follow-up period was 4 years. Two patients required extended local wound care for wound skin necrosis. One patient sustained traumatic periprosthetic subtrochanteric fracture following a subsequent trauma. No thromboembolic complications were seen. All knees showed satisfactory alignment and range of motion. Postoperative, median knee society pain score, and knee society function score were 84 (80-88) and 88 (84-92) at last follow-up. Megaprosthesis can be offered as a one-stage salvage procedure for difficult nonunion in distal femoral fractures associated with bone loss, osteoporosis, and secondary knee arthritis. IV.
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NR 12
TC 33
Z9 41
U1 0
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PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0942-2056
EI 1433-7347
J9 KNEE SURG SPORT TR A
JI Knee Surg. Sports Traumatol. Arthrosc.
PD JUL 15
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VL 19
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WC Orthopedics; Sport Sciences; Surgery
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PT J
AU Rizzoli, R
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AF Rizzoli, R.
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TI Subtrochanteric fractures after long-term treatment with bisphosphonates: a European Society on Clinical and Economic Aspects of Osteoporosis and Osteoarthritis, and International Osteoporosis Foundation Working Group Report
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Atypical; Bisphosphonate; Femur; Low trauma; Osteoporosis; Subtrochanteric
ID monthly oral ibandronate; suppressed bone turnover; femoral-shaft fractures; postmenopausal osteoporosis; stress-fractures; alendronate therapy; randomized-trial; zoledronic acid; microdamage accumulation; insufficiency fractures
AB This paper reviews the evidence for an association between atypical subtrochanteric fractures and long-term bisphosphonate use. Clinical case reports/reviews and case-control studies report this association, but retrospective phase III trial analyses show no increased risk. Bisphosphonate use may be associated with atypical subtrochanteric fractures, but the case is yet unproven. A Working Group of the European Society on Clinical and Economic Aspects of Osteoporosis and Osteoarthritis and the International Osteoporosis Foundation has reviewed the evidence for a causal association between subtrochanteric fractures and long-term treatment with bisphosphonates, with the aim of identifying areas for further research and providing recommendations for physicians. A PubMed search of literature from 1994 to May 2010 was performed using key search terms,

and articles pertinent to subtrochanteric fractures following bisphosphonate use were analysed. Several clinical case reports and case reviews report a possible association between atypical fractures at the subtrochanteric region of the femur in bisphosphonate-treated patients. Common features of these 'atypical' fractures include prodromal pain, occurrence with minimal/no trauma, a thickened diaphyseal cortex and transverse fracture pattern. Some small case-control studies report the same association, but a large register-based study and retrospective analyses of phase III trials of bisphosphonates do not show an increased risk of subtrochanteric fractures with bisphosphonate use. The number of atypical subtrochanteric fractures in association with bisphosphonates is an estimated one per 1,000 per year. It is recommended that physicians remain vigilant in assessing their patients treated with bisphosphonates for the treatment or prevention of osteoporosis and advise patients of the potential risks. Bisphosphonate use may be associated with atypical subtrochanteric fractures, but the case is unproven and requires further research. Were the case to be proven, the risk-benefit ratio still remains favourable for use of bisphosphonates to prevent fractures.
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Z9 194
U1 0
U2 19
PU SPRINGER LONDON LTD
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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IS 2
BP 373
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AU Iwamoto, N
Inaba, Y
Kobayashi, N
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AF Iwamoto, Naoyuki
Inaba, Yutaka
Kobayashi, Naomi
Ishida, Takashi

Yukizawa, Yohei
Saito, Tomoyuki
TI A Comparison of the Effects of Alendronate and Alfacalcidol on Bone Mineral Density Around the Femoral Implant and in the Lumbar Spine After Total Hip Arthroplasty
SO JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME
LA English
DT Article
ID postmenopausal osteoporosis; vertebral fractures; double-blind; women; stem; trial; surface; dexa
AB Background: Several previous studies have demonstrated that bone mineral density loss around femoral implants is common, particularly in the proximal part of the femur, soon after total hip arthroplasty. The purpose of the present study was to compare the effects of alendronate and alfacalcidol on bone mineral density loss around the femoral implant and in the lumbar spine after total hip arthroplasty. Methods: The present study included sixty patients with osteoarthritis of the hip who had undergone a primary cementless total hip arthroplasty. We assigned these individuals to treatment with alendronate (n = 20), alfacalcidol (n = 18), or no medication (n = 22). Periprosthetic and lumbar spine bone mineral density was measured one week after surgery, and biochemical markers (bone-specific alkaline phosphatase and serum N-terminal telopeptides of type-1 collagen) were measured before surgery as a reference baseline. Subsequent measurements were performed at twelve, twenty-four, and forty-eight weeks after surgery. The periprosthetic measurement area in the femur was defined as Regions 1 to 7, which are consecutively located around the implant from the greater trochanter to the lesser trochanter and calcar. Results: Bone mineral density in the alendronate group was maintained in all regions. In the alfacalcidol and no-medication groups, bone mineral density in Region 7 was lower than in Regions 3 to 6 throughout the study period ($p < 0.0001$ as a result of repeated measures analysis of variance). Bone mineral density in the lumbar spine in the alendronate and alfacalcidol groups was higher than in the no-medication group at forty-eight weeks. The serum level of N-terminal telopeptides of type-1 collagen in the alendronate group was lower than that in the no-medication group throughout the study period ($p = 0.003$, 0.02 and 0.005). Conclusions: Alendronate prevented bone mineral density loss around femoral implants, particularly in Region 7 (calcar), but alfacalcidol did not show any effects in any regions. However, bone mineral density losses in the lumbar spine were effectively prevented by either alendronate or alfacalcidol.
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NR 28
TC 30
Z9 38
U1 0

U2 2
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
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J9 J BONE JOINT SURG AM
JI J. Bone Joint Surg.-Am. Vol.
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WC Orthopedics; Surgery
SC Orthopedics; Surgery
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UT WOS:000292752800004
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PT J
AU Moritz, N
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Lankinen, P
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AF Moritz, Niko
Alm, Jessica J.
Lankinen, Petteri
Makinen, Tatu J.
Mattila, Kimmo
Aro, Hannu T.
TI Quality of intertrochanteric cancellous bone as predictor of femoral stem RSA migration in cementless total hip arthroplasty
SO JOURNAL OF BIOMECHANICS
LA English
DT Article
DE Total hip arthroplasty; Bone quality; Osteoporosis; RSA; mu CT
ID follow-up; osteoarthritis; osteoporosis; replacement; prostheses; stability;

precision; survival; density; 2-year
AB In cementless total hip arthroplasty, osteoporosis may jeopardize the achievement of immediate stability and lead to migration of anatomically shaped femoral stems. Poor quality of proximal cancellous bone per se may also affect the rate of osseointegration. In a selected group of female total hip arthroplasty patients (mean age 64 years) with unremarkable medical history, intertrochanteric cancellous bone biopsy was taken from the site of stem implantation. Local bone quality, determined by structural mu CT imaging and destructive compression testing of the biopsy tissue, was used as the predictor of three-dimensional stem migration determined by radiostereometric analysis (RSA) up to 24 months. The patients exhibited major differences in mechanical properties of the intertrochanteric cancellous bone, which were closely related to the structural parameters calculated from mu CT data. Unexpectedly, the major differences observed in the quality of trochanteric cancellous bone had only minor reflections in the RSA migration of the femoral stems. In statistical analysis, the mu CT-based bone mineral density quartile (low, middle, high) was the only significant predictor for stem translation at 24 months ($p = 0.022$) but only a small portion ($R-2=0.16$) of the difference in translation could be explained by changes in bone mineral density quartile. None of the other parameters investigated predicted stem migration in translation or rotation. In conclusion, poor quality of intertrochanteric cancellous bone seems to contribute to the risk of implant migration less than expected. Probably also the importance of surgical preservation of intertrochanteric cancellous bone has been over-emphasized for osseointegration of cementless stem. (C) 2010 Elsevier Ltd. All rights reserved.
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WC Biophysics; Engineering, Biomedical
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PT J
AU Askari, M
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AF Askari, Marjan
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TI Assessing Quality of Care of Elderly Patients Using the ACOVE Quality Indicator Set: A Systematic Review
SO PLOS ONE
LA English
DT Review

ID vulnerable older patients; nursing-hm; community; management; medicare; uk; incontinence; project; adults; falls
AB Background: Care of the elderly is recognized as an increasingly important segment of health care. The Assessing Care Of Vulnerable Elderly (ACOVE) quality indicators (QIs) were developed to assess and improve the care of elderly patients. Objectives: The purpose of this review is to summarize studies that assess the quality of care using QIs from or based on ACOVE, in order to evaluate the state of quality of care for the reported conditions. Methods: We systematically searched MEDLINE, EMBASE and CINAHL for English-language studies indexed by February 2010. Articles were included if they used any ACOVE QIs, or adaptations thereof, for assessing the quality of care. Included studies were analyzed and relevant information was extracted. We summarized the results of these studies, and when possible generated an overall conclusion about the quality of care as measured by ACOVE for each condition, in various settings, and for each QI. Results: Seventeen studies were included with 278 QIs (original, adapted or newly developed). The quality scores showed large variation between and within conditions. Only a few conditions showed a stable pass rate range over multiple studies. Overall, pass rates for dementia (interquartile range (IQR): 11%-35%), depression (IQR: 27%-41%), osteoporosis (IQR: 34%-43%) and osteoarthritis (IQR: 29-41%) were notably low. Medication management and use (range: 81%-90%), hearing loss (77%-79%) and continuity of care (76%-80%) scored higher than other conditions. Out of the 278 QIs, 141 (50%) had mean pass rates below 50% and 121 QIs (44%) had pass rates above 50%. Twenty-three percent of the QIs scored above 75%, and 16% scored below 25%. Conclusions: Quality of care per condition varies markedly across studies. Although there has been much effort in improving the care for elderly patients in the last years, the reported quality of care according to the ACOVE indicators is still relatively low.
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PU PUBLIC LIBRARY SCIENCE
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J9 PLOS ONE
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PT J
AU Allen, J
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AF Allen, Jeralyn
Morelli, Vincent
TI Aging and Exercise
SO CLINICS IN GERIATRIC MEDICINE
LA English
DT Article
DE Elderly; Exercise; Benefits; Barriers
ID randomized controlled-trial; promote physical-activity; aerobic exercise; older-adults; cardiovascular-disease; knee osteoarthritis; resistance exercise; public-health; reduced risk; primary-care
AB In older adults, regular exercise provides numerous health benefits that include improvements in blood pressure, coronary artery disease, diabetes, lipid profile, osteoarthritis, osteoporosis, mood, neurocognitive function, and overall morbidity and mortality. This article discusses the benefits of exercise in the elderly and how physicians can help such patients overcome barriers to exercise (eg, sedentary lifestyle, lack of education, coexisting morbidities), and offers some practical exercise prescriptions for both healthy and compromised elderly patients.
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WC Geriatrics & Gerontology
SC Geriatrics & Gerontology
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PT J
AU Jiang, SS
Chen, CH
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Chang, IS
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AF Jiang, Shih Sheng
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Wang, Ming Jen
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Lin, Jiunn-Liang
Lin, Shankung
TI Gene expression profiling suggests a pathological role of human bone marrow-derived mesenchymal stem cells in aging-related skeletal diseases
SO AGING-US
LA English

DT Article
DE human bone marrow mesenchymal stem cell; aging; osteoporosis; osteoarthritis
ID rat osteoprogenitor cells; tumor-suppressor; mitogenic activity; stromal cells; target gene; differentiation; osteoarthritis; aggrecanolysis; susceptibility; proliferation
AB Aging is associated with bone loss and degenerative joint diseases, in which the aging of bone marrow-derived mesenchymal stem cell (bmMSC)(1) may play an important role. In this study, we analyzed the gene expression profiles of bmMSC from 14 donors between 36 and 74 years old, and obtained age-associated genes (in the background of osteoarthritis) and osteoarthritis-associated genes (in the background of old age). Pathway analysis of these genes suggests that alterations in glycobiology might play an important role in the aging of human bmMSC. On the other hand, antigen presentation and signaling of immune cells were the top pathways enriched by osteoarthritis-associated genes, suggesting that alteration in immunology of bmMSC might be involved in the pathogenesis of osteoarthritis. Most intriguingly, we found significant age-associated differential expression of HEXA, HEXB, CTSK, SULF1, ADAMTS5, SPP1, COL8A2, GPNMB, TNFAIP6, and RPL29; those genes have been implicated in the bone loss and the pathology of osteoporosis and osteoarthritis in aging. Collectively, our results suggest a pathological role of bmMSC in aging-related skeletal diseases, and suggest the possibility that alteration in the immunology of bmMSC might also play an important role in the etiology of adult-onset osteoarthritis.
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NR 47
TC 42
Z9 49
U1 0
U2 12
PU IMPACT JOURNALS LLC
PI ORCHARD PARK
PA 6666 E QUAKER ST, STE 1, ORCHARD PARK, NY 14127 USA
SN 1945-4589
EI
J9 AGING-US
JI Aging-US
PD JUL 15
PY 2011
VL 3
IS 7
BP 672
EP 684
DI 10.18632/aging.100355
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WC Cell Biology; Geriatrics & Gerontology
SC Cell Biology; Geriatrics & Gerontology
GA 845AU
UT WOS:000296796000003
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PT J
AU Mutasingwa, DR
Ge, H
Upshur, REG
AF Mutasingwa, Donatus R.
Ge, Hong
Upshur, Ross E. G.
TI How applicable are clinical practice guidelines to elderly patients with

comorbidities?
SO CANADIAN FAMILY PHYSICIAN
LA English
DT Article
ID practice good medicine; canadian consensus conference; older-people; diagnosis; dementia; management; disease; quality; recommendations; osteoporosis
AB Objective To examine the applicability of 10 common clinical practice guidelines (CPGs) to elderly patients with multiple comorbidities. Design Content analysis of published Canadian CPGs for the following chronic diseases: diabetes, dyslipidemia, dementia, congestive heart failure, depression, osteoporosis, hypertension, gastroesophageal reflux disease, chronic obstructive pulmonary disease, and osteoarthritis. Main outcome measures Presence or absence of 4 key indicators of applicability of CPGs to elderly patients with multiple comorbidities. These indicators include any mention of older adults or people with comorbidities, time needed to treat to benefit in the context of life expectancy, and barriers to implementation of the CPG. Results Out of the 10 CPGs reviewed, 7 mentioned treatment of the elderly, 8 mentioned people with comorbidities, 4 indicated the time needed to treat to benefit in the context of life expectancy, 5 discussed barriers to implementation, and 7 discussed the quality of evidence. Conclusion This study shows that although most CPGs discuss the elderly population, only a handful of them adequately address issues related to elderly patients with comorbidities. In order to make CPGs more patient centred rather than disease driven, guideline developers should include information on elderly patients with comorbidities.
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10.5694/j.1326-5377.2008.tb02079.x
NR 42
TC 93
Z9 102
U1 0
U2 13
PU COLL FAMILY PHYSICIANS CANADA
PI MISSISSAUGA
PA 2630 SKYMARK AVE, MISSISSAUGA, ONTARIO L4W 5A4, CANADA
SN 0008-350X
EI 1715-5258
J9 CAN FAM PHYSICIAN
JI Can. Fam. Phys.
PD JUL 15
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VL 57
IS 7
BP E253
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DI
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WC Primary Health Care; Medicine, General & Internal
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PT J
AU Muraki, S
Akune, T
Oka, H
En-yo, Y
Yoshida, M
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TI Health-Related Quality of Life in Subjects With Low Back Pain and Knee Pain in a Population-Based Cohort Study of Japanese Men The Research on Osteoarthritis Against Disability Study
SO SPINE
LA English
DT Article
DE knee pain; low back pain; osteoarthritis; quality of life; vertebral fracture
ID postmenopausal women; vertebral fractures; elderly subjects; osteoporosis; association; prevalent; hip
AB Study Design. Cross-sectional surveys of health-related quality of life (QOL) in subjects with low back pain and knee pain using a population-based cohort. Objective. The purpose of the present study was to clarify the impact of low back pain and knee pain on QOL in men. In addition, we analyzed the impacts of vertebral fracture (VFx), lumbar spondylosis, and knee osteoarthritis (OA) on the magnitude of QOL loss in men with low back pain and knee pain. Summary of Background Data. Low back pain and knee pain are major public health issues causing disability among the elderly men, but there were no population-based studies to compare the impact of low back pain on QOL with that of knee pain in Japanese men. Methods. From 3040 participants in the Research on Osteoarthritis Against Disability study, data from 767 men older than 40 years who completed questionnaires (mean age = 69.7 years) were examined. To carry out the QOL assessment, the Medical Outcomes Study Short Form 8 (SF-8) and EuroQol (EQ-5D) were used. We examined the association of low back pain and knee pain with QOL. Furthermore, we also examined the presence of VFx and the severity of lumbar spondylosis and knee OA with the magnitude of QOL loss in men with low back pain and knee pain, respectively. Results. The impact of low back pain on QOL was larger than that of knee pain. In men with low back pain, there were few associations between Kellgren-Lawrence grade and QOL, whereas VFx was associated with physical QOL. For men with knee pain, Kellgren-Lawrence grade

equal to 4 knee OA was associated with QOL. Conclusion. This study revealed that low back pain has a larger impact than knee pain on QOL. Furthermore, low back pain with VFx is strongly associated with physical QOL loss.
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NR 29
TC 43
Z9 45
U1 0
U2 5
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 0362-2436
EI 1528-1159
J9 SPINE
JI SPINE
PD JUL 15
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VL 36
IS 16
BP 1312
EP 1319
DI 10.1097/BRS.0b013e3181fa60d1
PG 8
WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
GA 788MY
UT WOS:000292450300018
PM 21730819
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ER

PT J
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Partington, PF
AF Malviya, Ajay
Reed, Mike R.
Partington, Paul F.
TI Acute primary total knee arthroplasty for peri-articular knee fractures in patients over 65 years of age
SO INJURY-INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED
LA English
DT Article
DE Knee replacement; Outcome; Fracture; Peri-articular; Elderly
ID distal femoral fractures; elderly-patients; tibial plateau; periarticular fractures; hinge prosthesis; femur; replacement; fixation; stabilization; liss
AB Peri-articular knee fractures in osteoporotic or osteoarthritic bone present a challenge to fixation, mobilisation or non-operative management. We present a series of 15 proximal tibial and 11 distal femoral fractures treated with total knee arthroplasty at over mean follow-up period of 38.8 months. The mean age of the patients was 80 years. The choice of the implant and level of constraint was determined as per the nature of injury and preference of the surgeon dealing with the fracture. Patients were allowed rapid mobilisation with immediate full weight-bearing. Good clinical results were achieved with fracture healing, sound fixation and well-aligned flexible knees. Mean Knee Society knee score was 90.2; Knee Society function score was 35.5; Oxford Knee score was 39.5; and Short Form (SF)-36 physical function score was 37.3 and mental score 50.6. Good correlation was noted between Knee society knee score and SF-36 physical function score (Pearson's 0.76, p = 0.001), suggesting that generic health would dictate the final function achieved, whilst high knee scores suggest the satisfactory results of the operation. Analogous to arthroplasty for hip fractures, this technique should be considered as a treatment option in elderly peri-articular knee fractures with osteoporosis and/or osteoarthritis. (C) 2011 Elsevier Ltd. All rights reserved.
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NR 26
TC 37
Z9 47
U1 0
U2 4
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 0020-1383
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JI Injury-Int. J. Care Inj.
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WC Critical Care Medicine; Emergency Medicine; Orthopedics; Surgery
SC General & Internal Medicine; Emergency Medicine; Orthopedics; Surgery
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PT J
AU Madsen, SH
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AF Madsen, Suzi H.
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TI Glucocorticoids exert context-dependent effects on cells of the joint in vitro
SO STEROIDS
LA English
DT Article
DE Prednisolone; Dexamethasone; Chondrocytes; Osteoclasts; Osteoblasts; Ex vivo model
ID suppress bone-formation; induced osteoporosis; rheumatoid-arthritis; osteoclast formation; articular-cartilage; femoral-head; ex-vivo; dexamethasone; apoptosis; differentiation
AB Introduction: Glucocorticoids are known to attenuate bone formation in vivo leading to decreased bone volume and increased risk of fractures, whereas effects on the joint tissue are less characterized. However, glucocorticoids appear to have a reducing effect on inflammation and pain in osteoarthritis. This study aimed at characterizing the effect of glucocorticoids on chondrocytes, osteoclasts, and osteoblasts. Experimental: We used four model systems to investigate how glucocorticoids affect the cells of the joint; two intact tissues (femoral head- and

cartilage-explants), and two separate cell cultures of osteoblasts (2T3-pre-osteoblasts) and osteoclasts (CD14(+)-monocytes). The model systems were cultured in the presence of two glucocorticoids; prednisolone or dexamethasone. To induce anabolic and catabolic conditions, cultures were activated by insulin-like growth factor I/bone morphogenetic protein 2 and oncostatin M/tumor necrosis factor-alpha, respectively. Histology and markers of bone- and cartilage-turnover were used to evaluate effects of glucocorticoid treatment. Results: Prednisolone treatment decreased collagen type-II degradation in immature cartilage, whereas glucocorticoids did not affect collagen type-II in mature cartilage. Glucocorticoids had an anti-catabolic effect on catabolic-activated cartilage from a bovine stifle joint and murine femoral heads. Glucocorticoids decreased viability of all bone cells, leading to a reduction in osteoclastogenesis and bone resorption; however, bone morphogenetic protein 2-stimulated osteoblasts increased bone formation, as opposed to non-stimulated osteoblasts. Conclusions: Using highly robust in vitro models of bone and cartilage turnover, we suggest that effects of glucocorticoids highly depend on the activation and differential stage of the cell targeted in the joint. Present data indicated that glucocorticoid treatment may be beneficial for articular cartilage, although detrimental effects on bone should be taken into account. (C) 2011 Elsevier Inc. All rights reserved.
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AF Skoldenberg, Olof Gustaf
Salemyr, Mats Olof
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TI The Effect of Weekly Risedronate on Periprosthetic Bone Resorption Following Total Hip Arthroplasty A Randomized, Double-Blind, Placebo-Controlled Trial
SO JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME
LA English
DT Article
ID femoral components; implant migration; cyclic therapy; ebra-fca; replacement; stem; etidronate; fractures; failure; osteoporosis
AB Background: Bone loss leading to late-occurring periprosthetic femoral fracture is a mode of failure in cementless total hip arthroplasty. The aim of this trial was to investigate the effect of a bisphosphonate, risedronate, on femoral penprosthetic bone resorption following total hip arthroplasty in patients with osteoarthritis of the hip. Methods: We enrolled seventy-three patients between the ages of forty and seventy years who were scheduled to undergo total hip arthroplasty in a single-center, randomized, double-blind, placebo-controlled trial. Subjects were randomly assigned to receive either 35 mg of risedronate (n = 36) or a placebo (n = 37) orally once weekly for six months. The primary end point was the change in bone mineral density in Gruen femoral zones 1 and 7. Bone mineral density scans were made preoperatively and at two days and three, six, twelve, and twenty-four months postoperatively. Secondary end points included migration of the femoral stem and clinical outcome. Results: Seventy of the seventy-three patients (thirty-three in the risedronate group and thirty-seven in the placebo group) were analyzed for the primary end point. The mean bone mineral density in zone 1 was 9.2% higher (95% confidence interval [Cl], 4.2% to 14.1%) in the risedronate group than in the placebo group at six months postoperatively and 7.2% higher (95% CI, 1.0% to 13.3%) at one year. The mean bone mineral density in zone 7 was 8.0% higher (95% CI, 2.7% to 13.4%) in the risedronate group than in the placebo group at six months postoperatively and 4.3% higher (95% CI, -1.5% to 10.1%) at one

year. Migration of the femoral stern, the clinical outcome, and the frequency of adverse events did not differ between the groups. Conclusions: Risedronate taken once weekly for six months following total hip arthroplasty was effective in reducing periprosthetic bone resorption around an uncemented femoral stem up to one year after surgery but had no discernible effect on implant migration or clinical outcome. Future studies of bisphosphonate treatment following total hip arthroplasty should focus on clinically relevant end points such as the risks of fracture and revision arthroplasty.
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TI Regenerative potentials of platelet-rich plasma enhanced by collagen in retrieving pro-inflammatory cytokine-inhibited chondrogenesis
SO BIOMATERIALS
LA English
DT Article
DE Osteoarthritis (OA); Platelet-rich plasma (PRP); Collagen matrix; Physiological microenvironment; Pro-inflammatory cytokines
ID necrosis-factor-alpha; in-vitro; articular chondrocytes; growth-factors; osteoarthritis; cells; differentiation; matrix; interleukin-1; mechanisms
AB This study was undertaken to evaluate the role of collagen matrix to enhance platelet-rich plasma (PRP) effects on pro-inflammatory cytokine-induced arthritic

model. We have previously demonstrated the highly regenerative roles of PRP to restore disc degeneration and osteoporosis. In this study. PRP modulated by collagen matrix was used as a regenerative and anti-inflammatory mediator to rescue the chondrocyte degeneration induced by pro-inflammatory cytokines IL-1 beta (10 ng/ml)+TNF-alpha (20 ng/ml). First, the mu result indicated that 1 ng/ml TGF-beta 1 in PRP showed an optimal dosage for chondrocytes proliferation. The chondrogenic-specific gene expressions were rescued by PRP from the inhibition of IL-1 beta+TNF-alpha, especially under the modulation of collagen matrix. The inflammatory molecules activated by IL-1 beta+TNF-alpha were also significantly diminished by PRP with collagen matrix. The membrane receptors integrin alpha 1 beta 1 and CD44 were strongly inhibited by IL-1 beta+TNF-alpha, while this inhibition was then recovered by PRP in collagen coating condition. In a 3D model encapsulated with collagen, PRP-induced chondrogenesis were highly enhanced, such as strong restoration of type II collagen and proteoglycan from the inhibition of IL-1 beta+TNF-alpha. The result indicated that collagen matrix enhances the effect of PRP on chondrogenesis in response to pro-inflammatory cytokines. The combination of PRP and collagen matrix might facilitate a physiological microenvironment beneficial for maintaining chondrocyte homeostasis and represents an advanced osteoarthritis therapy for clinical applications. (C) 2011 Elsevier Ltd. All rights reserved.
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PT J
AU Okano, K
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TI Bone Mineral Density Is Not Related to Osteophyte Formation in Osteoarthritis of the Hip
SO JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE BONE MINERAL DENSITY; DUAL-ENERGY X-RAY ABSORPTIOMETRY; OSTEOARTHRITIS; HIP
ID femoral-neck; iliac crest; joint; osteoporosis; women; replacement; arthroplasty; association; dysplasia; arthritis
AB Objective. Reports have suggested that bone mineral density (BMD) is higher in patients with osteoarthritis (OA) of the hip than in healthy controls. Various types of OA of the hip caused by osteophyte formation were observed on radiographs during progression to the advanced degenerative stage, and the preoperative type of OA was reported to influence the results of surgical treatment. However, the mechanism underlying the development of different types of OA is still unknown. We measured BMD of patients with hip OA and determined whether higher BMD was observed in patients with osteophyte formation than in those without osteophytes. Methods. We measured BMD of the lumbar spine, radius, and calcaneus using dual-energy x-ray absorptiometry in 88 women who were scheduled to undergo total hip arthroplasty for endstage OA. Hips were evaluated for osteophyte formation using Bombelli's classification; 31 were graded as atrophic type, 30 as normotrophic, and 27 as hypertrophic. BMD at different skeletal sites were compared among the 3 types of OA. Results. No significant difference in BMD of the lumbar spine, ultradistal radius, mid-radius, or calcaneus was observed among the atrophic, normotrophic, and hypertrophic types of OA. Conclusion. Our data suggest that osteophyte formation is not related to general BMD. Factors other than general bone status, for example the morphology of the hip joint, need to be analyzed to determine the pathomechanism of osteophyte formation in the osteoarthritic hip. (First Release Dec 15 2010; J Rheumatol 2011;38:358-61; doi:10.3899/jrheum.100533)
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TI Teriparatide as a Chondroregenerative Therapy for Injury-Induced Osteoarthritis
SO SCIENCE TRANSLATIONAL MEDICINE
LA English
DT Article
ID parathyroid-hormone 1-34; endochondral bone-formation; experimental mouse models; knee-joint instability; articular-cartilage; hip osteoarthritis; metalloproteinase inhibitor; chondrocyte differentiation; osteoblast apoptosis; molecular-mechanisms
AB There is no disease-modifying therapy for osteoarthritis, a degenerative joint disease that is projected to afflict more than 67 million individuals in the United States alone by 2030. Because disease pathogenesis is associated with inappropriate articular chondrocyte maturation resembling that seen during normal endochondral ossification, pathways that govern the maturation of articular chondrocytes are candidate therapeutic targets. It is well established that parathyroid hormone (PTH) acting via the type 1 PTH receptor induces matrix synthesis and suppresses maturation of chondrocytes. We report that the PTH receptor is up-regulated in articular chondrocytes after meniscal injury and in osteoarthritis in humans and in a mouse model of injury-induced knee osteoarthritis. To test whether recombinant human PTH(1-34) (teriparatide) would inhibit aberrant chondrocyte maturation and associated articular cartilage degeneration, we administered systemic teriparatide (Forteo), a Food and Drug Administration-approved treatment for osteoporosis, either immediately after or 8 weeks after meniscal/ligamentous injury in mice. Knee joints were harvested at 4, 8, or 12 weeks after injury to examine the effects of teriparatide on cartilage degeneration and articular chondrocyte maturation. Microcomputed tomography revealed increased bone volume within joints from teriparatide-treated mice compared to saline-treated control animals. Immediate systemic administration of teriparatide increased proteoglycan content and inhibited articular cartilage degeneration, whereas delayed treatment beginning 8 weeks after injury induced a regenerative effect. The chondroprotective and chondroregenerative effects of teriparatide correlated with decreased expression of type X collagen, RUNX2 (runt-related transcription factor 2), matrix metalloproteinase 13, and the carboxyl-terminal aggrecan cleavage product NITEGE. These preclinical findings provide proof of concept that Forteo may be useful for decelerating cartilage degeneration and inducing matrix regeneration in patients with osteoarthritis.
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AU Johnston, JD
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AF Johnston, James D.
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TI Predicting subchondral bone stiffness using a depth-specific CT topographic mapping technique in normal and osteoarthritic proximal tibiae
SO CLINICAL BIOMECHANICS
LA English
DT Article
DE Stiffness; Subchondral bone; Bone mineral density; Computed tomography; Osteoarthritis
ID trabecular bone; mechanical-property; knee osteoarthritis; articular-cartilage; cancellous bone; finite-element; femoral-head; density; modulus; osteoporosis
AB Background: Subchondral bone stiffness is thought to be involved in osteoarthritis pathogenesis. Our objective was to determine if a CT imaging technique, which measures density in relation to depth from the subchondral

surface, could predict the stiffness of proximal tibial subchondral bone. A second objective was to determine whether cartilage degeneration (an indicator of osteoarthritis) affected predictions. Methods: Thirteen proximal tibial compartments (4 medial, 9 lateral) from 10 male donors (age: mean 73.2, SD 10.6 years) were scanned using quantitative CT. We assessed average subchondral bone mineral density across different depths (0-2.5, 0-5, 0-10 mm) and layers (2.5-5, 5-10 mm) measured relative to the subchondral surface. We classified cartilage status as normal or degenerated using the International Cartilage Repair Society system. We performed macro indentation testing directly at the subchondral surface, and related stiffness to density measures using power-law regression models adjusted for side, age and cartilage status. We tested the coincidence of normal and degenerated regression models using F test statistics. Findings: Density measures nearest the subchondral bone surface (0-2.5 mm) were most effective at predicting subchondral bone stiffness ($r(2) = 0.67$, $p<0.001$). The predictive ability of depth-specific density measures decreased when density was averaged across larger depths or layers deep to the subchondral surface. Cartilage status did not affect model predictions. Interpretation: Depth-specific density measures have potential use as in vivo imaging tools for characterizing subchondral bone density and estimating stiffness. This information could help explain the role of subchondral bone in osteoarthritis pathogenesis. (C) 2011 Elsevier Ltd. All rights reserved.
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TC 18
Z9 18
U1 0
U2 8
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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J9 CLIN BIOMECH
JI Clin. Biomech.
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BP 1012
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WC Engineering, Biomedical; Orthopedics; Sport Sciences
SC Engineering; Orthopedics; Sport Sciences
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PT J
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Schmidt-Rohlfing, B
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TI Effects of Controlled Released BMP-7 on Markers of Inflammation and Degradation During the Cultivation of Human Osteoarthritic Chondrocytes
SO JOURNAL OF BIOMATERIALS APPLICATIONS
LA English
DT Article
DE osteoarthritic chondrocyte; PGLA microspheres; BMP-7; inflammation
ID human articular chondrocytes; osteogenic protein-1 op-1; nf-kappa-b; matrix metalloproteinase-13; proinflammatory cytokine; soluble receptor; gene-expression; tnf-alpha; il-1; proteoglycan
AB The aim of the present study is to investigate the effects of BMP-7 released from polylactide microspheres on the appearance of various catabolic and inflammatory cytokines secreted by osteoarthritic chondrocytes cultivated in a collagen gel. Articular chondrocytes of 15 patients suffering from osteoarthritis are transferred to a collagen type-I gel. Additionally, BMP-7 encapsulated into polylactide microspheres (50 ng BMP-7/mL gel) is added. After 14 days, gene expression and protein appearance of various genes involved in matrix turnover and inflammation are investigated by immunohistochemical staining and RT-PCR and compared to untreated controls. TNF-alpha, MMP-13, IL-6, IL-1 beta, and VEGF gene expressions are decreased in the treatment group. In contrast, BMP-7-induced matrix synthesis is not affected, leaving collagen type-II (Col-II) gene expression to be elevated, while collagen type-I (Col-I) is decreased. In summary, controlled release of low concentrated BMP-7 from polylactide microspheres leads to a decrease in gene expression of the investigated inflammation and matrix degradation markers whereas matrix synthesis is induced.
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PI LONDON
PA 1 OLIVERS YARD, 55 CITY ROAD, LONDON EC1Y 1SP, ENGLAND
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JI J. Biomater. Appl.
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SC Engineering; Materials Science
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PT J
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Houssiau, Frederic A.
TI Hand Radiological Damage in Systemic Sclerosis: Comparison with a Control Group and Clinical and Functional Correlations
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE systemic sclerosis; hands; radiology
ID disease-activity; arthropathy; criteria
AB Objective: To define the burden of hand radiological damage in systemic sclerosis (SSc) patients, compared with a control group. Methods: Both hands of 167 SSc patients and 168 hands (82 right and 86 left) of age- and gender-matched controls were imaged by conventional radiograph. Two musculoskeletal radiologists semiquantitatively scored the following lesions: tuft acro-osteolysis, tuft calcinosis, joint space narrowings, marginal erosions, surface erosions, collapse arthropathies, periarticular calcifications, and juxta-articular osteoporosis, at the following areas: tufts, distal interphalangeal, proximal interphalangeal, metacarpophalangeal, carpal, and first carpometacarpal joints. Clinical and functional characteristics of the 167 SSc patients were obtained from the Belgian Systemic Sclerosis Cohort database. Results: Tuft acro-osteolysis and calcinosis were the most common findings observed in SSc patients and were almost absent in controls. SSc patients displaying tuft acro-osteolysis/calcinosis suffered from more severe disease. Arthropathies were infrequently detected and mainly consisted of a mixture of osteoarthritis-related changes (joint space narrowing and surface erosions) also observed in controls and of 2 types of rare SSc-associated arthropathies: a rheumatoid arthritis-like pattern, characterized by marginal erosions (n = 7 patients), and a collapse arthropathy (n = 6 patients), characterized by pressure erosions and joint subluxation. Conclusions: Although a rheumatoid arthritis-like or a collapse arthropathy can be observed in SSc patients, arthropathies are less common than previously reported. (C) 2011 Elsevier Inc. All rights reserved. Semin Arthritis Rheum 40:455-460
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NR 14
TC 74
Z9 82
U1 0
U2 4
PU W B SAUNDERS CO-ELSEVIER INC
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PA 1600 JOHN F KENNEDY BOULEVARD, STE 1800, PHILADELPHIA, PA 19103-2899 USA
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PT J
AU Newa, M
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AF Newa, Madhuri
Bhandari, Krishna Hari
Tang, Lili
Kalvapalle, Rohit
Suresh, Mavanur
Doschak, Michael R.
TI Antibody-Mediated "Universal" Osteoclast Targeting Platform using Calcitonin as a Model Drug
SO PHARMACEUTICAL RESEARCH
LA English
DT Article
DE drug delivery system; monoclonal antibody; osteoclast; osteoporosis; post-traumatic osteoarthritis; RANK receptor; salmon calcitonin
ID salmon-calcitonin; methyl 4-mercaptobutyrimidate; differentiation factor; postmenopausal women; sulfhydryl-groups; bone-resorption; delivery; cells; rank; osteopetrosis
AB To generate and characterize a specific monoclonal antibody (mAb) against recombinant human RANK receptor and to develop an antiresorptive strategy using this mAb as an osteoclast-targeting platform that selectively targets osteoclast cells whilst delivering an attached (i.e. chemically conjugated) active drug cargo. Using hybridoma technology, we generated a specific monoclonal antibody (mAb) against recombinant human RANK receptor and characterized by SDS PAGE, ELISA, Western Blot and immunocytochemistry, then synthesized osteoclast-targeting bioconjugates of salmon calcitonin (sCT) using this antibody

by generating thiol groups on mAb using 2-Iminothiolane and subsequently reacting them with sCT-PEG-MAL synthesised from sCT and NHS-PEG-MAL. To test the efficacy of the conjugate in vitro, osteoclasts were generated from precursor RAW 264.7 cells by dosing with the cytokines macrophage-colony-stimulating factor (M-CSF), and RANK Ligand (RANKL) and TRAP activity assay, Resorption Pit Assay, TRAP staining were performed. Cytotoxicity of the mAb-sCT conjugate was also evaluated in RAW 264.7 cells; sCT bioactivity and CTR binding potential were evaluated by in vitro intracellular cAMP stimulation assay in human T47D breast cancer cells. Generation of antibody against human RANK receptor was confirmed by SDS PAGE, ELISA and Western Blot. Immunocytochemistry confirmed the osteoclast targeting potential of the antibody. Successful conjugation of the antibody with sCT was confirmed by SDS PAGE and ELISA.Multinucleated osteoclast formation was confirmed by staining for tartrate-resistant acid phosphatase (TRAP). Conjugate functionality was confirmed by TRAP activity and Resorption Pit assay, showing the inhibitory effect on osteoclast differentiation. cAMP assay confirmed the retention of calcitonin bioactivity after conjugation. Our strategy offers the potential for a "universal" osteoclast-targeting platform-one that targets the RANK receptor on osteoclast cells by simply altering the conjugated cargo in order to affect the specific regulation of osteoclast cells.
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PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
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J9 PHARM RES-DORDR
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WC Chemistry, Multidisciplinary; Pharmacology & Pharmacy
SC Chemistry; Pharmacology & Pharmacy
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PT J
AU Wang, Y
Boyd, SK
Battié, MC
Yasui, Y
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AF Wang, Yue
Boyd, Steven K.
Battie, Michele C.
Yasui, Yutaka
Videman, Tapio
TI Is Greater Lumbar Vertebral BMD Associated With More Disk Degeneration? A Study Using μCT and Discography
SO JOURNAL OF BONE AND MINERAL RESEARCH
LA English

DT Article
DE LUMBAR SPINE; DISK DEGENERATION; BONE MINERAL DENSITY; DISCOGRAPHY; MCT
ID bone-mineral density; intervertebral-disk; back-pain; osteoporosis; women; osteoarthritis; spine; hip; men; densitometry
AB It is well documented that osteoarthritis is associated with greater BMD in peripheral extremities. Yet the relationship between vertebral BMD and disk degeneration (DD) remains controversial in the lumbar spine, which may be due largely to the inadequacies of BMD and DD measures. Aiming to clarify the association between vertebral BMD and adjacent DD, we studied 137 cadaveric lumbar vertebrae and 209 corresponding intervertebral disks from the spines of 48 white men aged 21 to 64 years. DD was evaluated using discography. The vertebrae were scanned using a micro-computed tomography (mu CT) system to obtain volumetric BMD for the whole vertebra, the vertebral body, the vertebral body excluding osteophytes, and the vertebral body excluding osteophytes and endplates. A random effects model was used to examine the association between the different definitions of vertebral BMD and adjacent DD. No significant association was found between the BMD of the whole vertebra and adjacent DD. However, when the posterior elements were excluded, there was a significant association between greater vertebral body BMD and more severe degeneration in the disk cranial to the vertebra. This association remained after further excluding osteophytes and endplates from the vertebral body BMD measurements. Also, a trend of greater BMD of the vertebral body associated with more adjacent DD was evident. These results clarify the association between vertebral BMD and DD and specifically indicate that it is higher BMD of the vertebral body, not the entire vertebra, that is associated with more severe adjacent DD. This association may be obscured by the posterior elements and is not confounded by osteophytes and endplate sclerosis. (C) 2011 American Society for Bone and Mineral Research.
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CR Adams MA, 2006, SPINE, V31, P2151, DOI 10.1097/01.brs.0000231761.73859.2c
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J9 J BONE MINER RES
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AF Forsyth, A. L.
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TI Role of exercise and physical activity on haemophilic arthropathy, fall prevention and osteoporosis
SO HAEMOPHILIA
LA English
DT Review
DE ageing; exercise; fall prevention; haemophilic arthropathy; osteoporosis; physical activity
ID knee osteoarthritis; older-people; risk-factors; bone mass; program; adults; association; walking; scores; fear
AB In older men with haemophilia, arthropathy resulting from a lifetime of intra-articular bleeding contributes to the loss of independence and increased morbidity that occurs with age. A regular exercise programme that incorporates aerobics, strength training and balance and flexibility activities is a key component of successful ageing, helping to improve functional mobility and reduce the risk of falls, osteoporosis and osteoporotic fractures. Because of the special challenges associated with haemophilia, which include both the underlying coagulopathy and, in many cases, extensive joint damage, patients beginning an exercise regimen should be referred to appropriately trained physiotherapists (preferably someone associated with a haemophilia treatment centre) for evaluation, education and instruction and follow-up. Various assistive devices may make exercise easier to perform and more comfortable.
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AU Compston, JE
Watts, NB
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TI Obesity Is Not Protective against Fracture in Postmenopausal Women: GLOW
SO AMERICAN JOURNAL OF MEDICINE
LA English
DT Article
DE Fractures; Obesity; Osteoporosis; Postmenopausal
ID body-mass index; bone-mineral density; self-report; osteoporotic fractures; knee osteoarthritis; visceral fat; risk-factors; older men; validity; management
AB OBJECTIVE: To investigate the prevalence and incidence of clinical fractures in obese, postmenopausal women enrolled in the Global Longitudinal study of Osteoporosis in Women (GLOW). METHODS: This was a multinational, prospective, observational, population-based study carried out by 723 physician practices at 17 sites in 10 countries. A total of 60,393 women aged >= 55 years were included. Data were collected using self-administered questionnaires that covered domains that included patient characteristics, fracture history, risk factors for fracture, and anti-osteoporosis medications. RESULTS: Body mass index (BMI) and fracture history were available at baseline and at 1 and 2 years in 44,534 women, 23.4% of whom were obese (BMI >= 30 kg/m(2)). Fracture prevalence in obese women at baseline was 222 per 1000 and incidence at 2 years was 61.7 per 1000, similar to rates in nonobese women (227 and 66.0 per 1000, respectively). Fractures in obese women accounted for 23% and 22% of all previous and incident fractures, respectively. The risk of incident ankle and upper leg fractures was significantly higher in obese than in nonobese women, while the risk of wrist fracture was significantly lower. Obese women with fracture were more likely to have experienced early menopause and to report 2 or more falls in the past year. Self-reported asthma, emphysema, and type 1 diabetes were all significantly more common in obese than nonobese women with incident fracture. At 2 years, 27% of obese women with incident fracture were receiving bone protective therapy, compared with 41% of nonobese and 57% of underweight women. CONCLUSIONS: Our results demonstrate that obesity is not protective against fracture in postmenopausal women and is associated with increased risk of ankle and upper leg fractures. (C) 2011 Elsevier Inc. All rights reserved. . The American Journal of Medicine (2011) 124, 1043-1050
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DI 10.1016/j.amjmed.2011.06.013
PG 8
WC Medicine, General & Internal
SC General & Internal Medicine
GA 842EW
UT WOS:000296576200021
PM 22017783
DA 2026-02-10
ER

PT J
AU Quagliarella, L
Sasanelli, N
Monaco, V
Belgiovine, G
Spinarelli, A
Notarnicola, A
Moretti, L
Moretti, B
AF Quagliarella, Livio
Sasanelli, Nicola
Monaco, V.
Belgiovine, G.
Spinarelli, A.
Notarnicola, A.
Moretti, L.
Moretti, B.
TI Relevance of orthostatic posturography for clinical evaluation of hip and knee joint arthroplasty patients
SO GAIT & POSTURE

LA English
DT Article
DE Postural control; Clinical evaluation; Hip; Knee; Prostheses
ID surface replacement arthroplasty; postural control; balance; osteoarthritis; parameters; stability; sway; society; system; gait
AB In order to verify whether orthostatic posturography (OP) can support clinical assessment of total hip (THA) and knee arthroplasty (TKA), 81 subjects with THA and 100 with TKA were recruited and compared with 59 healthy volunteers. All patients were tested one or two days prior to surgery: 42 subjects (20 THA and 22 TKA) were tested again after six months, and 34 (14 THA and 20 TKA) yet again after 12 months. OP was performed using a Kistler 9286A piezoelectric force plate and the following postural parameters (PPs) were adopted on account of their functional meaning: mean velocity and the root mean square of the distance of the centre of pressure (COP), sway area, and 95% of the CoP power frequency. Eye condition and fatigue related to the test duration were also examined. The three most meaningful PPs were identified and a logarithmic transformation was then applied to these, as well as standardization. Almost all the PP values were higher preoperatively in the patients as compared with the healthy subjects and it was possible to detect many statistically significant differences between patients and healthy subjects. However, when examining the 181 subjects at the preoperative stage, the PPs did not show congruence with the clinical scores as well as they did during follow-up. Therefore, the use of the OP is not recommended to monitor patients undergoing THA or TKA. (C) 2011 Elsevier B.V. All rights reserved.
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WYKMAN A, 1989, INT ORTHOP, V13, P235, DOI 10.1007/BF00268504
NR 30
TC 18
Z9 24
U1 0
U2 15
PU ELSEVIER IRELAND LTD
PI CLARE
PA ELSEVIER HOUSE, BROOKVALE PLAZA, EAST PARK SHANNON, CO, CLARE, 00000, IRELAND
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J9 GAIT POSTURE
JI Gait Posture

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PG 6
WC Neurosciences; Orthopedics; Sport Sciences
SC Neurosciences & Neurology; Orthopedics; Sport Sciences
GA 785OB
UT WOS:000292237200009
PM 21482115
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ER

PT J
AU Haroon, M
Bond, U
Quillinan, N
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AF Haroon, Muhammad
Bond, Ursula
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Phelan, Mark J.
Regan, Michael J.
TI The prevalence of vitamin D deficiency in consecutive new patients seen over a 6-month period in general rheumatology clinics
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Outpatient clinics; Prevalence; Rheumatology; Vitamin D deficiency
ID association; disease
AB The objectives of this study are to assess: (a) the prevalence of vitamin D deficiency among new patients attending rheumatology outpatient departments, (b) the age profile of these low vitamin D patients and (c) whether any diagnostic category had a particularly high number of vitamin D-deficient patients. All new patients seen consecutively in general rheumatology clinics between January to June 2007 inclusive were eligible to partake in this study, and 231 out of 264 consented to do so. Parathyroid hormone, 25-hydroxyvitamin D, creatinine, calcium, phosphate, albumin and alkaline phosphatase levels were measured. We defined vitamin D deficiency as a parts per thousand currency sign53 nmol/l and severe deficiency as a parts per thousand currency sign25 nmol/l. Overall, 70% of

231patients had vitamin D deficiency, and 26% had severe deficiency. Sixty-five percent of patients aged a parts per thousand yen65 and 78% of patients aged a parts per thousand currency sign30 years had low vitamin D levels. Vitamin D deficiency in each diagnostic category was as follows: (a) inflammatory joint diseases/connective tissue diseases (IJD/CTD), 69%; (b) soft tissue rheumatism, 77%; (c) osteoarthritis, 62%; (d) non-specific musculoskeletal back pain, 75% and (e) osteoporosis, 71%. Seasonal variation of vitamin D levels was noted in all diagnostic groups apart from IJD/CTD group, where the degree of vitamin D deficiency persisted from late winter to peak summer. Very high prevalence of vitamin D deficiency was noted in all diagnostic categories ($p = 0.006$), and it was independent of age ($p = 0.297$). The results suggest vitamin D deficiency as a possible modifiable risk factor in different rheumatologic conditions, and its role in IJD/CTD warrants further attention.

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CR Abrahamsen B, 2010, BMJ-BRIT MED J, V340, P0, DOI 10.1136/bmj.b5463
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NR 24
TC 17
Z9 19
U1 0
U2 3
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0770-3198
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J9 CLIN RHEUMATOL
JI Clin. Rheumatol.
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IS 6
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PG 6
WC Rheumatology
SC Rheumatology
GA 768TG
UT WOS:000290960700007
PM 21184246
DA 2026-02-10
ER

PT J
AU Tosun, B
Al, F
Tosun, A
AF Tosun, Bilgehan
Al, Firat
Tosun, Alptekin
TI Spontaneous Osteonecrosis of the Tarsal Navicular in an Adult: Mueller-Weiss

Syndrome
SO JOURNAL OF FOOT & ANKLE SURGERY
LA English
DT Article
DE avascular necrosis; osteonecrosis; bone graft; iliac crest; surgery; tarsus
ID osteoporosis
AB Spontaneous osteonecrosis of the navicular in the adult is known as Mueller-Weiss syndrome, which is a rare disease characterized by a collapse of the lateral portion of the tarsal navicular combined with a medial protrusion of the talar head and peri-navicular osteoarthritis. In this article, we describe a case of spontaneous osteonecrosis of tarsal navicular in a 43-year-old male. Chronic midfoot pain over the dorsomedial aspect of the right foot was resolved after complete removal of the necrotic bone from the tarsal navicular, followed by an autologous bone grafting of the resultant defect. (C) 2011 by the American College of Foot and Ankle Surgeons. All rights reserved.
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NR 11
TC 35
Z9 49
U1 0
U2 4
PU ELSEVIER SCIENCE INC
PI NEW YORK

PA STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA
SN 1067-2516
EI 1542-2224
J9 J FOOT ANKLE SURG
JI J. Foot Ankle Surg.
PD MAR-APR 15
PY 2011
VL 50
IS 2
BP 221
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DI 10.1053/j.jfas.2010.10.019
PG 4
WC Orthopedics; Surgery
SC Orthopedics; Surgery
GA 726NR
UT WOS:000287730300018
PM 21354008
DA 2026-02-10
ER

PT J
AU Juby, A
Davis, P
AF Juby, Angela
Davis, Paul
TI An evaluation of the impact of seniors on a rheumatology referral clinic: demographics and pharmacotherapy
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Pharmacotherapy; Rheumatology clinic; Seniors
ID elderly-patients; aggressive treatment; arthritis; population; decisions; care; age
AB The aging population is impacting subspecialty areas outside of geriatrics. Rheumatic diseases increase with age. Therapy for these diseases can add to polypharmacy and negatively impact other comorbidities. This is a retrospective chart review of all patients attending a rheumatology subspeciality clinic over 1 year. Referrals were prescreened and excluded probable degenerative axial and peripheral disease and chronic pain syndromes. Data were collected on demographics, diagnoses, and medications. Two hundred ninety-five new patients were seen. Seventy-eight (26%) were seniors (age, >65 years) with a mean age of 73 years (65-90). Comparing the >65 to <65 age groups, the prevalence of inflammatory arthritides (rheumatoid arthritis (RA), psoriatic arthritis, palindromic rheumatism) was comparable: 48% vs 53%; however, osteoarthritis and polymyalgia

rheumatica were twice as common in the older group. Comorbidities in the >65 age group included hypertension (31%), osteoporosis (27%), diabetes (15%), hypothyroidism (11%), and coronary artery disease (9%). Only one patient had documented dementia. There were no cases of uncontrolled hypertension identified, and all patients were receiving a mixture of anti-hypertensives. Eighty-one percent of osteoporosis patients were on antiresorptives, but only 40% of prednisone users were taking bisphosphonates. For RA, treatment was somewhat comparable between the groups, with all but two patients receiving disease-modifying antirheumatic drugs. Eleven percent were on biologics. Seniors comprise a significant number of referrals. Pharmacotherapy differs in seniors, with more use of prednisone and a probable contribution of polypharmacy. This study highlights the need for reciprocal knowledge by both geriatricians and rheumatologists to optimize the management of these complex patients.
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CR De Coster C, 2008, CLIN RHEUMATOL, V27, P1411, DOI 10.1007/s10067-008-0938-5
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NR 10
TC 8
Z9 9
U1 0
U2 2
PU SPRINGER LONDON LTD
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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J9 CLIN RHEUMATOL
JI Clin. Rheumatol.
PD NOV 15
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BP 1507
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DI 10.1007/s10067-011-1845-8
PG 3
WC Rheumatology
SC Rheumatology
GA 850NK
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PT J
AU Chang, G
Wang, LG
Liang, GY
Babb, JS
Saha, PK
Regatte, RR
AF Chang, Gregory
Wang, Ligong
Liang, Guoyuan
Babb, James S.
Saha, Punam K.
Regatte, Ravinder R.
TI Reproducibility of subregional trabecular bone micro-architectural measures derived from 7-Tesla magnetic resonance images
SO MAGNETIC RESONANCE MATERIALS IN PHYSICS BIOLOGY AND MEDICINE
LA English
DT Article
DE Ultra high field; 7 Tesla; MRI; Trabecular bone; Micro-architecture; Knee
ID articular-cartilage; mri; interrelationship; parameters
AB High-resolution magnetic resonance imaging (MRI) of trabecular bone combined with quantitative image analysis represents a powerful technique to gain insight into trabecular bone micro-architectural derangements in osteoporosis and osteoarthritis. The increased signal-to-noise ratio of ultra high-field MR (a parts per thousand yen7 Tesla) permits images to be obtained with higher resolution and/or decreased scan time compared to scanning at 1.5/3T. In this small feasibility study,

we show high measurement precision for subregional trabecular bone micro-architectural analysis performed on 7T knee MR images. The results provide further support for the use of trabecular bone measures as biomarkers in clinical studies of bone disorders.
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Wald MJ, 2010, J MAGN RESON IMAGING, V31, P1157, DOI 10.1002/jmri.22158
Wehrli FW, 2007, J MAGN RESON IMAGING, V25, P390, DOI 10.1002/jmri.20807
NR 15
TC 17
Z9 22
U1 0
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PA 233 SPRING ST, NEW YORK, NY 10013 USA

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J9 MAGN RESON MATER PHY
JI Magn. Reson. Mat. Phys. Biol. Med.
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IS 3
BP 121
EP 125
DI 10.1007/s10334-010-0243-6
PG 5
WC Radiology, Nuclear Medicine & Medical Imaging
SC Radiology, Nuclear Medicine & Medical Imaging
GA 769TT
UT WOS:000291041900001
PM 21221706
DA 2026-02-10
ER

PT J
AU Schneider, E
Lo, GH
Sloane, G
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AF Schneider, Erika
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Fanella, Lynn
Hunter, David J.
Eaton, Charles B.
McAlindon, Timothy E.
TI Magnetic resonance imaging evaluation of weight-bearing subchondral trabecular bone in the knee
SO SKELETAL RADIOLOGY
LA English
DT Article
DE Knee; MR; Subchondral bone; Osteoarthritis; Trabecular bone; Osteoporosis
ID fractal signature analysis; articular-cartilage; mineral density; proximal tibia; 3 tesla; mechanical-property; osteoarthritic knee; joint; interrelationship; reproducibility

AB Changes in weight-bearing subchondral bone are central to osteoarthritis (OA) pathophysiology. Using MR, knee trabecular bone is typically assessed in the axial plane, however partial volume artifacts limit the utility of MR methods for femorotibial compartment subchondral bone analysis. Oblique-coronal acquisitions may enable direct visualization and quantification of the expected increases in femorotibial subchondral trabecular bone. MR acquisition parameters were first optimized at 3 Tesla. Thereafter, five volunteers underwent axial and coronal exams of their right knee. Each image series was evaluated visually and quantitatively. An anatomically standardized region-of-interest was placed on both the medial and lateral tibial plateaus of all coronal slices containing subchondral bone. Mean and maximum marrow signal was measured, and "bone signal" was calculated. The MR acquisition had spatial resolution 0.2 x 0.2 x 1.0 mm and acquisition time 10.5 min. The two asymptomatic knees exhibited prominent horizontal trabeculae in the tibial subchondral bone, while the one confirmed OA knee had disorganized subchondral bone and absent horizontal trabeculae. The subchondral bone signal was 8-14% higher in both compartments of the OA knee than the asymptomatic knees. The weight-bearing femorotibial subchondral trabecular bone can be directly visualized and changes quantified in the coronal-oblique plane. Qualitative and quantitative assessments can be performed using the resultant images and may provide a method to discriminate between the healthy and OA knees. These methods should enable a quantitative evaluation of the role of weight-bearing subchondral bone in the natural history of knee OA to be undertaken.
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FU American College of Rheumatology/Research and Education Foundation; Arthritis Foundation; NIAMS/NIH [N01-AR-2-2262]; ARC
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Z9 26
U1 0
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PA 233 SPRING ST, NEW YORK, NY 10013 USA
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JI Skeletal Radiol.
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TI Calcium Fructoborate-Potential Anti-inflammatory Agent
SO BIOLOGICAL TRACE ELEMENT RESEARCH
LA English
DT Article
DE Boron; Calcium fructoborate; Osteoporosis; Osteoarthritis; Anti-inflammatory; Antioxidant
ID polyunsaturated fatty-acids; dietary boron; thermal-stability; boric-acid; extracellular-matrix; cadmium(ii) complex; mineral metabolism; d-fructose; vitamin-d; borate
AB Calcium fructoborate is a boron-based nutritional supplement. Its chemical structure is similar to one of the natural forms of boron such as bis-manitol, bis-sorbitol, bis-fructose, and bis-sucrose borate complexes found in edible plants. In vitro studies revealed that calcium fructoborate is a superoxide ion scavenger and anti-inflammatory agent. It may influence macrophage production of inflammatory mediators, can be beneficial for the suppression of cytokine production, and inhibits progression of endotoxin-associated diseases, as well as the boric acid and other boron sources. The mechanisms by which calcium fructoborate exerts its beneficial anti-inflammatory effects are not entirely clear, but some of its molecular biological in vitro activities are understood: inhibition of the superoxide within the cell; inhibition of the interleukin-1 beta, interleukin-6, and nitric oxide release in the culture media; and increase of the tumor necrosis factor-alpha production. Also, calcium fructoborate has no effects on lipopolysaccharide-induced cyclooxygenase-2 protein express. The studies on animals and humans with a dose range of 1-7 mg calcium fructoborate (0.025-0.175 mg elemental boron)/kg body weight/day exhibited a good anti-inflammatory activity, and it also seemed to have negligible adverse effect on humans.
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TI Relationship between gender, bone mineral density, and disc degeneration in the lumbar spine: a study in elderly subjects using an eight-level MRI-based disc degeneration grading system
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Bone mineral density; Degeneration; Intervertebral disc; Lumbar spine; Osteopenia; Osteoporosis
ID postmenopausal women; osteoporosis; osteoarthritis; fractures; osteopenia; features
AB The study cohort comprised 196 females and 163 males. Lumbar spine bone mineral density (BMD) and magnetic resonance imaging (MRI) were acquired. Females had more severe disc degeneration than males. Lumbar spine lower BMD was associated with less severe disc degeneration. Lumbar disc spaces were more likely to be narrower when vertebral BMD was higher. The purpose of this paper is to study the relationship between gender, BMD, and disc degeneration in the lumbar spine. The study cohort comprised 196 females and 163 males (age range 67-89 years) with no age difference between the two groups. Lumbar spine BMD was measured with dual X-ray densitometry, and MRI was acquired at 1.5 T. A subgroup of 48 males had additional lumbar vertebral quantitative computerized tomography densitometry. Lumbar disc degeneration was assessed using a MRI-based eight-level grading system. Female subjects had more severe disc degeneration than male subjects. After removing age effect, a positive trend was observed between T-score and severity of lumbar disc degeneration. This was significant in female subjects while not significant in male subjects. Lumbar disc spaces were more likely to be narrowed when vertebral BMD was higher. These observations were more significant in the midlumbar region (L3/4 and L4/5) and less so at the thoracolumbar junction. Female subjects tended to have slightly more severe lumbar disc degeneration than male subjects. Lower lumbar spine BMD was associated with less severe disc degeneration.
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WC Endocrinology & Metabolism
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TI Effect of exercise on bone and articular cartilage in heterozygous manganese superoxide dismutase (SOD2) deficient mice
SO FREE RADICAL RESEARCH
LA English
DT Article
DE Manganese superoxide dismutase; exercise; bone; cartilage; reactive oxygen species
ID mitochondrial oxidative stress; free-radicals; subchondral bone; knockout mice; oxygen; osteoarthritis; expression; damage; antioxidants; activator
AB Reactive oxygen species (ROS) are involved in both bone and cartilage physiology and play an important role in the pathogenesis of osteoporosis and osteoarthritis. The present study investigated the effect of running exercise on bone and cartilage in heterozygous manganese superoxide dismutase (SOD2)-deficient mice. It was hypothesized that exercise might induce an increased production of ROS in these tissues. Heterozygous SOD2-deficient mice should

exhibit an impaired capability to compensate, resulting in an increased oxidative stress in cartilage and bone. Thirteen female wild type and 20 SOD2<SU++/--</SU mice (aged 16 weeks) were randomly assigned to a non-active wild type (SOD2<SU++/++</SUCon, n == 7), a trained wild type (SOD2<SU++/++</SURun, n == 6), a non-active SOD2<SU++/--</SU (SOD2<SU++/--</SUCon, n == 9) and a trained SOD2<SU++/--</SU (SOD2<SU++/--</SURun, n == 11) group. Training groups underwent running exercise on a treadmill for 8 weeks. In SOD2<SU++/--</SU mice elevated levels of 15-F-2t-isoprostane and nitrotyrosine were detected in bone and articular cartilage compared to wild type littermates. In osteocytes the elevated levels of these molecules were found to be reduced after exercise while in chondrocytes they were increased by aerobic running exercise. The observed changes in oxidative and nitrosative stress did neither affect morphological, structural nor mechanical properties of both tissues. These results demonstrate that exercise might protect bone against oxidative stress in heterozygous SOD2-deficient mice.

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NR 43
TC 19
Z9 24
U1 0
U2 12
PU TAYLOR & FRANCIS LTD
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J9 FREE RADICAL RES
JI Free Radic. Res.
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IS 5
BP 550
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WC Biochemistry & Molecular Biology
SC Biochemistry & Molecular Biology
GA 735CH
UT WOS:000288390500006
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PT J
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TI MUSCULOSKELETAL PROBLEMS AND DRUG USE IN THE ELDERLY: PERSPECTIVE OF THE GENERAL PRACTITIONERS
SO TURKISH JOURNAL OF GERIATRICS-TURK GERIATRI DERGISI
LA English
DT Article
DE General Practitioners; Musculoskeletal Disease; Anti-Inflammatory Agents,

Non-Steroidal; Pain
ID pain
AB Introduction: The elderly populates all over the world and in our country, demands of this population from health services are on the rise due to chronic diseases. Prevalance of osteoarthritis, osteoporosis and pain resulting from various musculoskeletal diseases are known to increase with age. Since improving national healthcare services through the enhancement of primary care is a major challenge in many countries; we aimed to investigate the perspective of the general practitioners (GPs) and the problems they encounter while dealing with musculoskeletal problems in the elderly population. Materials and Method: 159 governmental primary health care centers were randomly chosen and involved in the study. The GPs were questioned on the types of health problems they frequently encounter in the elderly population, the groups of drugs they prefer, whether they perform intraarticular or intralesional injections, the type of drugs they prescribe for osteoporosis, the type of drug groups that satisfy their patients most, drugs that the patients might prefer according to the advice of nonmedics and the drugs that elderly patients tend to use without prescriptions. Results: The most frequently used drugs for the musculoskeletal problems in the elderly were nonsteroidal antiinflammatory drugs (NSAIDs), followed by COX-2 specific NSAIDs, and paracetamol. The drugs that satisfy patients most were COX-2 specific NSAIDs, followed by NSAIDs, corticosteroids and paracetamol. 90.4% of the patients demanded for prescription of the drugs that were adviced by nonmedics. The GPs have observed that NSAIDs, antibiotics, vitamins and mineral preparations, cardiovascular system drugs were used by the patients without prescriptions. Conclusion: The GPs are frequently involved in the care of elderly patients with painful problems. NSAIDs are the most frequently used medications for musculoskeletal pain problems. A wide range of medications are used by the elderly patients without prescription.
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NR 11
TC 1
Z9 1
U1 0
U2 1
PU GUNES KITABEVI LTD STI
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SN 1304-2947
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J9 TURK J GERIATR
JI Turk. J. Geriatr.
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WC Geriatrics & Gerontology; Gerontology
SC Geriatrics & Gerontology
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PT J
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TI Reference values for hand grip strength, muscle mass, walking time, and one-leg standing time as indices for locomotive syndrome and associated disability: the second survey of the ROAD study
SO JOURNAL OF ORTHOPAEDIC SCIENCE
LA English
DT Article
ID speed; sarcopenia; predictor; mortality; health; age
AB We established reference values for hand grip strength, muscle mass, walking time, and one-leg standing time as indices reflecting components of locomotive syndrome and associated disability using a large-scale population-based sample from the second survey of the Research on Osteoarthritis/Osteoporosis Against Disability (ROAD) cohort. We measured the above-mentioned indices in 2,468 individuals a parts per thousand yen40 years old (826 men, 1,642 women; mean age 71.8 years) during the second visit of the ROAD study. Disability was defined as certified disability according to the long-term care insurance system through public health centres of each municipality. Mean values for hand grip strength (weaker side), muscle mass of the thighs, walking time for 6 m at the usual pace, and the fastest pace for men were 32.7 kg, 7.0 kg, 5.6 s, and 3.7 s, respectively, and those for women were 20.8 kg, 5.2 kg, 5.9 s, and 4.1 s, respectively. The median values for one-leg standing time (weaker side) were 14 s for men and 12 s for women. The prevalence of disability in men aged 65-69, 70-74, 75-79, and a parts per thousand yen80 was 0.0, 1.0, 6.3, and 8.8%, respectively, and in women was 3.4, 3.5, 9.2, and 14.7%, respectively. There were significant associations between the presence of disability and walking time for 6 m at the usual pace and at the fastest pace, and between the presence of disability and walking speed. We established reference values for indices reflecting components of locomotive syndrome, and identified significant associations between walking ability and disability.

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NR 29
TC 72
Z9 87
U1 0
U2 16
PU ELSEVIER
PI AMSTERDAM
PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
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J9 J ORTHOP SCI
JI J. Orthop. Sci.
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WC Orthopedics
SC Orthopedics
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PT J
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TI Partial adherence: a new perspective on health economic assessment in osteoporosis
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Adherence; Compliance; Cost-effectiveness; Persistence
ID cost-effectiveness; bisphosphonate therapy; drug-therapy; persistence; alendronate; impact; women; risk; prevention; raloxifene
AB Partial adherence in osteoporosis increases the risk for fragility fracture and has considerable impact on cost-effectiveness. This review highlights a number of avenues for further research, such as improved definition of thresholds of compliance and persistence, as well as gap length, offset times, and fraction of benefit. Introduction A number of economic models have been developed to evaluate osteoporosis therapies and support decisions regarding efficient allocation of health care resources. Adherence to treatment is seldom incorporated in these models, which may reduce their validity for decision-making since adherence is poor in real-world clinical practice. Methods An ad hoc working group of the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis met to review key issues concerning the incorporation of partial adherence in health economic models. Results Observational data have shown that poor adherence is associated with an increase in the risk for fragility fracture. Health economic modelling indicates that full adherence is associated with more quality-adjusted life years gained than partial adherence, as well as higher treatment costs and lower fracture-related costs. Although adherence appears as an important driver of cost-effectiveness, the effect is dependent on a range of other variables, such as offset time, fraction of benefit, fracture risk, fracture efficacy, fracture-related costs, and drug cost, some of which are poorly defined. Current models used to evaluate cost-effectiveness in osteoporosis may oversimplify the contributions of compliance and persistence. Conclusion Partial adherence has a significant impact on cost-effectiveness. Further research is required to optimise thresholds of compliance and persistence, the impact of gap length, offset times, and fraction of benefit.
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NR 45
TC 52

Z9 57
U1 0
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PU SPRINGER LONDON LTD
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PT J
AU Raiss, P
   Pape, G
   Kleinschmidt, K
   Jäger, S
   Sowa, B
   Jakubowitz, E
   Loew, M
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   Rickert, M
AF Raiss, Patric
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Rickert, Markus
TI Bone cement penetration pattern and primary stability testing in keeled and pegged glenoid components
SO JOURNAL OF SHOULDER AND ELBOW SURGERY
LA English
DT Article
DE TSA; shoulder; arthroplasty; bone mineral density; micro-CT
ID total shoulder arthroplasty; follow-up; glenohumeral osteoarthritis; rheumatoid-arthritis; shear-strength; replacement; survivorship; fixation; hemiarthroplasty; complications
AB Background: It has been proposed that bone mineral density has an influence on cement penetration in hip and knee arthroplasty. The hypotheses of this study were that: 1) there is a negative correlation between bone mineral density (BMD) and cement penetration in cemented glenoid components; and 2) that implant design has an influence on cement penetration into the glenoid bone. Methods: BMD of 10 pairs of fresh frozen scapulas was measured. Micro-computed tomography (micro-CT) scans in 3 different sections were analyzed after implantation of keeled and pegged glenoid components using a 3(rd)-generation cementing technique with a vacuum mixing system. Cement penetration was analyzed and correlated with BMD. Pull-out strength testing was performed to analyze primary stability. Results: The overall peak BMD was 0.6 [g/cm(2)] (range, 0.33-0.98). A strong negative correlation between BMD and mean cement penetration was found for the peg (R(2) = -.83; P < .003) and for the keel group (R(2) = -.81; P < .005). Mean cement penetration was 78.4 mm(2) (range, 60.6-94.2) in the keel and 113.9 mm 2 (range, 78.2-143.4) in the peg group (P < .0001). In all cases, the components were pulled out of the cement mantle, whereas the bone-cement interfaces remained intact. The mean pull-out strength was 1093N (764-1343N) for keeled and 884N (650-1264N) for pegged components (P < .05). Conclusion: A modern cementing technique, leading to a deep bonding between bone and cement, is crucial to prevent loosening of glenoid components. The findings of this study might help us to better understand the results of follow-up studies of cemented glenoid implants. Our results could be helpful for the choice of implants in patients with poor bone quality like osteoporosis or rheumatoid arthritis. Level of evidence: Basic Science Study. (C) 2011 Journal of Shoulder and Elbow Surgery Board of Trustees.
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NR 40
TC 19
Z9 21
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J9 J SHOULDER ELB SURG
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AU Neve, A
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Cantatore, Francesco Paolo
TI Osteoblast physiology in normal and pathological conditions
SO CELL AND TISSUE RESEARCH
LA English
DT Review
DE Osteoblasts; Wnt/beta-catenin pathway; RANK/RANKL/OPG; Osteoporosis; Osteoarthritis; Rheumatoid arthritis
ID tumor-necrosis-factor; glucocorticoid-induced osteoporosis; bone morphogenetic protein-2; mesenchymal stem-cells; growth-factor-beta; kappa-b ligand; osteoclastogenesis-inhibitory factor; human osteoarthritic osteoblasts; alkaline-phosphatase activity; messenger-ribonucleic-acid
AB Osteoblasts are mononucleated cells that are derived from mesenchymal stem cells and that are responsible for the synthesis and mineralization of bone during initial bone formation and later bone remodelling. Osteoblasts also have a role in the regulation of osteoclast activity through the receptor activator of nuclear factor kappa-B ligand and osteoprotegerin. Abnormalities in osteoblast differentiation and activity occur in some common human diseases such as osteoporosis and osteoarthritis. Recent studies also suggest that osteoblast functions are compromised at sites of focal bone erosion in rheumatoid arthritis.
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NR 189
TC 262
Z9 327
U1 0
U2 53
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0302-766X
EI 1432-0878
J9 CELL TISSUE RES
JI Cell Tissue Res.
PD FEB 15
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VL 343
IS 2
BP 289
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DI 10.1007/s00441-010-1086-1
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WC Cell Biology
SC Cell Biology
GA 714SJ
UT WOS:000286829000002
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PT J
AU Nouraei, MH

Moosa, FM
AF Nouraei, Mohammad Hadi
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TI Operative compared to non-operative treatment of displaced intra-articular calcaneal fractures
SO JOURNAL OF RESEARCH IN MEDICAL SCIENCES
LA English
DT Article
DE Calcaneal Fracture; Reconstruction Plate; Rigid Internal Fixation; Open Reduction
ID open reduction; os calcis; outcm
AB BACKGROUND: The aim of this study was to compare outcomes of open reduction and rigid internal fixation of displaced calcaneal fractures with that of non operative treatment. METHODS: Seventy two consecutive patients with displaced intra-articular calcaneal fractures were selected regarding inclusive and exclusive criteria and then were randomly allocated to surgical and non surgical groups. First group underwent open reduction and internal fixation with reconstruction plate and screws fixation and the other group were treated with closed reduction and cast immobilization. Data were collected by clinical observation and a check list. Data was analyzed by chi-square and student's t-test. RESULTS: The results showed significant difference between outcomes of surgical treatment and nonsurgical method (p = 0.001). There were some differences between two methods in terms of decreasing pain [Odd Ratio (OR): 6.72, p = 0.001], swelling (OR: 6.80, p = 0.001), increased range of motion of the joints (p = 0.001), decreased late osteoarthritis (OR: 2.33, p = 0.22) in favor of surgical group. CONCLUSIONS: Open reduction and internal fixation of displaced calcaneal fractures in absence of open fracture, severe osteoporosis, or comminution, poor general condition may be the preferred method of treatment.
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NR 22
TC 21
Z9 27
U1 0
U2 0
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J9 J RES MED SCI
JI J. Res. Med. Sci.
PD AUG 15
PY 2011
VL 16
IS 8
BP 1014
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WC Medicine, General & Internal
SC General & Internal Medicine
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UT WOS:000295905900006
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PT J
AU Holland, JC
Brennan, O
Kennedy, OD
Rackard, SM
O'Brien, FJ
Lee, TC
AF Holland, J. C.
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TI Subchondral trabecular structural changes in the proximal tibia in an ovine model of increased bone turnover
SO JOURNAL OF ANATOMY
LA English
DT Article
DE microcomputed tomography; osteoarthritis; osteoporosis; subchondral bone; tibial plateau
ID biomechanical property; ovariectomized sheep; computed-tomography; articular-cartilage; cancellous bone; animal-models; l3 vertebra; osteoarthritis; estrogen; microstructure
AB Ovariectomized (OVX) sheep are now considered to be useful models for a variety of metabolic bone disorders. The specific aim of this study was to determine the effects of ovariectomy on the structural parameters and material density of the subchondral bone of the ovine tibial plateau as measured by microcomputed tomography (MicroCT). Twenty-three sheep were examined in this study; 10 of the sheep underwent ovariectomy (OVX), and the remainder (n = 13) were kept as controls (CON). These animals were then sacrificed at 12 months post-operatively. Three-dimensional analyses were performed of osteochondral samples (15 mm deep) which were obtained from the medial tibial plateau using MicroCT. Bone volume fraction of the subchondral trabecular bone was reduced in the ovariectomized sheep as compared to control animals (0.439 vs. 0.483, P = 0.038). Trabeculae were also significantly thinner in the OVX group (0.220 vs. 0.252 mm, P = 0.010), with reduced connectivity density (7.947 vs. 11.524 mm-3, P = 0.014). There was a trend towards lower numbers of individual trabeculae present in the OVX group as compared to controls, but this did not reach significance (2.817 vs. 3.288 mm-1, P = 0.1). There was also increased trabecular separation in the OVX group, which again fell short of significance (0.426 vs. 0.387 mm, P = 0.251). There was no difference in hydroxyapatite concentration (HA) between the two groups

(929 vs. 932 mgHA cm-3, P = 0.687). In conclusion, significant alterations of the trabecular architecture under the tibial plateau were observed following 12 months of oestrogen-deficiency in this ovine model. Despite these marked morphological and structural density differences, the material densities were equal in the two groups.
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NR 39
TC 9
Z9 12
U1 0
U2 7
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0021-8782
EI 1469-7580
J9 J ANAT
JI J. Anat.
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WC Anatomy & Morphology
SC Anatomy & Morphology
GA 758PE
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ER

PT J
AU Steinbach, LS
Suh, KJ
AF Steinbach, Lynne S.
Suh, Kyung Jin
TI Bone Marrow Edema Pattern around the Knee on Magnetic Resonance Imaging Excluding Acute Traumatic Lesions
SO SEMINARS IN MUSCULOSKELETAL RADIOLOGY
LA English
DT Article
DE Knee; trauma; osteonecrosis; bone marrow edema; infection; tumor; MR imaging/diagnosis
ID spontaneous osteonecrosis; transient osteoporosis; marathon runners; mri findings; pagets-disease; osteomyelitis; osteoarthritis; competition; prevalence; appearance
AB Magnetic resonance imaging (MRI) is very sensitive for the detection of marrow abnormalities. Bone marrow edema on MRI has been defined as an area of low signal intensity on T1-weighted images, associated with intermediate or high signal intensity findings on T2-weighted images. The bone marrow edema pattern is a nonspecific finding with multiple etiologies. The knee is a common place for bone marrow signal abnormalities to appear on MRI. Besides contusions and fractures from acute trauma, there are a variety of other causes of the bone marrow edema pattern. It is important for the interpreter of the study to be aware of the different etiologies responsible for producing these changes and to be able to narrow the differential diagnosis without mistaking such a pattern for acute trauma or infiltrative tumor. This article concentrates on those entities that produce a bone marrow edema pattern not related to acute trauma including red marrow proliferation, stress, osteochondral lesions, osteonecrosis, bone marrow edema syndrome, arthropathy, infection, Paget's disease, and marrow replacement disorders.
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CR AHLBACK S, 1968, ARTHRITIS RHEUM, V11, P705, DOI 10.1002/art.1780110602
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AU Shi, Q
Zhang, XL
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Fernandes, Julio C.
TI siRNA therapy for cancer and non-lethal diseases such as arthritis and osteoporosis
SO EXPERT OPINION ON BIOLOGICAL THERAPY
LA English
DT Review
DE arthritis; gene therapy; musculoskeletal diseases; siRNA
ID tumor-necrosis-factor; adjuvant-induced arthritis; collagen-induced arthritis; gene-therapy; in-vivo; ewings-sarcoma; rheumatoid-arthritis; rna-interference; cathepsin-k; reduces inflammation
AB Importance of the field: Gene silencing mediated by siRNA has been widely investigated as a potential therapeutic approach. The success of these therapies depends on effective systems capable of selectively and efficiently conveying siRNA to targeted cells/organs with minimal toxicity. Areas covered in this review: This review discusses current experimental approaches to siRNA delivery strategies available for arthritis treatment and the management of other musculoskeletal disorders. The review covers literature on the subject from 2000 to 2010. What the reader will gain: In the last decade, extensive improvements have been made to optimize siRNA-based gene therapy and have been tested on several arthritis and orthopedic conditions. However, except for Phase I - II DNA-based gene therapy trials on arthritis, no clinical studies have reported siRNA application in these domains. Take home message: Most musculoskeletal disorders, such as rheumatoid arthritis, osteoarthritis, fracture, aseptic loosening, cartilage and intervertebral disc degeneration are non-fatal and age-related chronic inflammatory conditions, but represent significant morbidity and a socio-economic burden. siRNA-based gene therapy offers treatment opportunities that are less invasive, more effective and less expensive than existing modalities. Future directions for siRNA therapy include

the development of safe and more efficient delivery systems and the selection of optimal gene targets for disease control.
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PU TAYLOR & FRANCIS LTD
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TI Comparison of the effects of elcatonin and risedronate on back and knee pain by electroalgometry using fall of skin impedance and quality of life assessment using SF-36
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Elcatonin; Risedronate; Pain; Electroalgometry (fall of skin impedance); SF-36
ID health survey; osteoporotic patients; salmon-calcitonin; double-blind; cartilage; bone; osteoarthritis; alendronate; etidronate; fractures
AB Back and knee pain is a widespread health problem and a serious threat to the quality of life (QOL) in middle-aged and older adults, as it frequently accompanies osteoporosis and osteoarthritis. In order to compare the effects of elcatonin and risedronate on such pain, 20 units of elcatonin was intramuscularly injected to 18 patients, and 5 mg of risedronate was orally administered daily to 20 others with similar backgrounds. Exercise-induced pain was analyzed by measuring the fall of skin impedance by electroalgometry (EAM), and subjective pain was recorded by a visual rating system (VRS) on a scale of 0 (no pain) to 100 (unbearable pain). In patients treated with elcatonin, the mean EAM-estimated pain was significantly reduced after 4, 5 and 6 months of treatment, and the VRS score after 3, 5 and 6 months, indicating a significant analgesic effect. In the risedronate group, however, improvement was less remarkable. Two-way analysis of variance using pain as a dependent variable and treatment group and time as independent variables revealed a significantly greater effect of elcatonin over risedronate on both the EAM and VRS scores, and the influence of treatment time on pain was indistinguishable between the two treatment groups. Effect of exercise load on pain was less on knee load than knee and spine load and spine load, but indistinguishable between the two groups. Changes in QOL were evaluated by the SF-36 system. Norm-based scoring showed significant improvements in 3 of 4 categories for elcatonin and in 2 of 4 for risedronate, suggesting comparable effects on the physical aspects of QOL, whereas responses to emotionally and socially directed questions indicated significant improvements in all 4 categories for risedronate, but none for elcatonin, suggesting a more physical than emotional component in elcatonin effects compared to risedronate.
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NR 26
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U2 11
PU SPRINGER JAPAN KK
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PA CHIYODA FIRST BLDG EAST, 3-8-1 NISHI-KANDA, CHIYODA-KU, TOKYO, 101-0065, JAPAN
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TI Reduced tissue hardness of trabecular bone is associated with severe osteoarthritis
SO JOURNAL OF BIOMECHANICS
LA English
DT Article
DE Trabecular bone; Osteoarthritis; Hardness; Microstructure
ID cancellous bone; femoral-head; subchondral bone; mechanical-property; collagen metabolism; elastic property; lamellae; nanoindentation; osteoporosis; microindentation

AB This study investigated whether changes in hardness of human trabecular bone are associated with osteoarthritis. Twenty femoral heads extracted from subjects without musculoskeletal diseases (subject age: 49-83 years) and twenty femoral heads extracted from osteoarthritic subjects (subject age: 42-85 years) were tested. Sixty indentations were performed along the main trabecular direction of each sample at a fixed relative distance. Two microstructures were found on the indenting locations: packs of parallel-lamellae (PL) and secondary osteons (SO). A 25 gf load was applied for 15 s and the Vickers Hardness (HV) was assessed. Trabecular tissue extracted from osteoarthritic subjects was found to be about 13% less hard compared to tissue extracted from non-pathologic subjects. However, tissue hardness was not significantly affected by gender or age. The SO was 10% less hard than the PL for both pathologic and non-pathologic tissues. A hardness of 34.1 HV for PL and 30.8 HV for SO was found for the non-pathologic tissue. For osteoarthritic tissue, the hardness was 30.2 HV for PL and 27.1 HV for SO. In the bone tissue extracted from osteoarthritic subjects the occurrence of indenting a SO (28%) was higher than that observed in the non-pathological tissue (15%). Osteoarthritis is associated with reduced tissue hardness and alterations in microstructure of the trabecular bone tissue. Gender does not significantly affect trabecular bone hardness either in non-pathological or osteoarthritic subjects. A similar conclusion can be drawn for age, although a larger donor sample size would be necessary to definitively exclude the existence of a slight effect. (C) 2011 Published by Elsevier Ltd.
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NR 39
TC 34
Z9 36
U1 1
U2 18
PU ELSEVIER SCI LTD

PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 0021-9290
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J9 J BIOMECH
JI J. Biomech.
PD MAY 17
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IS 8
BP 1593
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DI 10.1016/j.jbiomech.2010.12.022
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WC Biophysics; Engineering, Biomedical
SC Biophysics; Engineering
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PT J
AU Setty, N
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TI Underestimated Fracture Probability in Patients With Unilateral Hip Osteoarthritis as Calculated by FRAX
SO JOURNAL OF CLINICAL DENSITOMETRY
LA English
DT Article
DE FRAX; hip fracture; osteoarthritis; osteoporosis; total fracture
ID bone-mineral density; articular-cartilage; arthroscopic evidence; postmenopausal women; clinician guide; risk-assessment; osteoporosis; knee; tool; association
AB Osteoporosis (OP) and osteoarthritis (OA) are age-related diseases often considered to be mutually exclusive. We previously found that 25% of women with

advanced OA had occult OP and that femoral neck (FN) bone mineral density (BMD) T-scores were significantly higher for osteoarthritic vs contralateral hips. The FRAX calculator incorporates clinical risk factors and FN BMD T-score to estimate 10-yr total fracture probability and hip fracture probability. In 35 women and men aged 41 yr or older with unilateral hip OA scheduled for hip replacement, we tested whether FRAX fracture probability is underestimated when using data for the OA rather than the contralateral hip. There were between-hip differences for FN BMD T-score ($p < 0.0001$), total fracture probability ($p = 0.0004$), and hip fracture probability ($p = 0.0009$). Use of FN BMD T-scores resulted in OP treatment recommendations for 0% and 11% of subjects compared with 11% and 17% for total fracture probability and hip fracture probability, respectively. In 6-11% of subjects in this series, the FRAX calculator underestimated fracture probability with data for the OA hip. With the increased use of FRAX in clinical use, these data suggest that measurement of BMD at the contralateral hip may yield higher calculated FRAX total and hip fracture probabilities.
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FU National Institutes of Health-National Institutes of Aging [R01-AG025015]
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NR 41
TC 6
Z9 11
U1 0
U2 1
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA
SN 1094-6950
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J9 J CLIN DENSITOM

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PD OCT-DEC 15
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 847DP
UT WOS:000296952400011
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ER

PT J
AU Bolland, BJRF
Culliford, DJ
Maskell, J
Latham, JM
Dunlop, DG
Arden, NM
AF Bolland, B. J. R. F.
Culliford, D. J.
Maskell, J.
Latham, J. M.
Dunlop, D. G.
Arden, N. M.
TI The effect of hip and knee arthroplasty on oral anti-inflammatory use and the relationship to body mass index: results from the UK general practice research database
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE NSAID; Hip; Knee; Arthroplasty
ID total joint arthroplasty; quality-of-life; osteoarthritis; replacement; obesity; community; arthritis; surgery; weight; pain
AB Objective: To determine the use of oral anti-inflammatory drugs in the year before and the 2 years after primary total hip (THR) or knee (TKR) replacement, and whether this varies according to Body mass Index (BMI). Design: 28,068 THR's and 24,364 TKR's, with five matched controls per case were identified from the General Practitioner Research Database. Anti-inflammatory usage was categorized into

"zero coverage" - no prescribed anti-inflammatory medication and ">80% coverage" - prescribed anti-inflammatory medication for greater than 80% of the days in the year. Secondary subset analysis was performed according to BMI. Results: 1 year post-surgery the proportion of cases on >80% coverage reduced from 21% (95%confidence interval (CI): 20-22%) to 8% (95%CI: 7-10%) for THR and 21% (95%CI: 20-22%) to 13% (95%CI: 11-14%) for TKR, with no ongoing reduction at 2 years. Zero coverage increased at one and both time points. The proportion of THR's on >80% coverage increased with BMI pre-op. The magnitude in reduction post-op was similar across all BMI groups. The proportion of TKR's on >80% coverage pre-op was greatest in extreme BMI categories. The magnitude in reduction post-op was similar across all BMI groups. Conclusion: THR/TKR's reduce the need for anti-inflammatory medication with most benefit observed in the first post-operative year. Increasing BMI affects anti-inflammatory use both in the general population and those undergoing THR/TKR surgery but without strong evidence of a detrimental effect on the benefits of pain relief. (C) 2010 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 29
TC 11
Z9 14
U1 0
U2 3
PU ELSEVIER SCI LTD
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PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON,

ENGLAND
SN 1063-4584
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD JAN 15
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VL 19
IS 1
BP 29
EP 36
DI 10.1016/j.joca.2010.10.012
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WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 710UK
UT WOS:000286542300003
PM 21034838
DA 2026-02-10
ER

PT J
AU Güler-Yüksel, M
Bijsterbosch, J
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Kroon, H. M.
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Kloppenburg, M.
TI Accelerated metacarpal bone mineral density loss is associated with radiographic progressive hand osteoarthritis
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID x-ray radiogrammetry; of-rheumatology criteria; c-reactive protein; classification;

cytokines; disease; women; hip; osteoporosis; inflammation
AB Objective To study the association between metacarpal bone mineral density (BMD) loss and progressive hand osteoarthritis (OA) over 2 years. Methods Using the Kellgren-Lawrence (KL) grading scale and the Osteoarthritis Research Society International Atlas, standardised hand radiographs of 181 patients with primary OA at multiple sites (mean age 60 years, 80% women, mean body mass index 27 kg/m(2)) were assessed for hand OA at baseline (KL >= 2 in two or more hand joints) and progressive hand OA over 2 years (>= 1 point increase in total osteophyte and joint space narrowing score in patients with hand OA at baseline). Changes in BMD were measured over 2 years in metacarpals 2-4 by digital x-ray radiogrammetry. Accelerated BMD loss was defined as loss of >3 mg/cm(2)/year. Logistic regression analyses were performed to assess the associations between BMD loss and progressive hand OA. Results The baseline prevalence of hand OA was 68% and, after 2 years, 32% of these patients had progressive hand OA. Accelerated BMD loss was present in 79% of the patients with progressive hand OA compared with 60% and 57% of the patients with non-progressive hand OA and no hand OA, respectively. BMD loss was independently associated with progressive hand OA compared with non-progressive hand OA with a RR (95% CI) of 2.1 (1.1 to 4.3). Conclusion Accelerated metacarpal BMD loss is associated with progressive hand OA over a period of 2 years; knowledge of common mechanisms may lead to development of therapeutic interventions for hand OA.
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CR ALTMAN R, 1991, ARTHRITIS RHEUM, V34, P505, DOI 10.1002/art.1780340502
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NR 39
TC 24
Z9 26
U1 0
U2 2
PU BMJ PUBLISHING GROUP
PI LONDON
PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR, ENGLAND
SN 0003-4967
EI 1468-2060
J9 ANN RHEUM DIS
JI Ann. Rheum. Dis.
PD SEP 15
PY 2011
VL 70
IS 9
BP 1625
EP 1630
DI 10.1136/ard.2010.144147
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WC Rheumatology
SC Rheumatology
GA 799GX
UT WOS:000293275600018
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PT J
AU Cuzick, J
Glasier, A
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Trichopoulos, D
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Crosignani, P. G.
Diczfalusy, E.
Evers, J. L. H.
Gianaroli, L.
Volpe, A.
TI Perimenopausal risk factors and future health
SO HUMAN REPRODUCTION UPDATE
LA English
DT Review
DE lifestyle at menopause; perimenopausal smoking; breast cancer; chronic diseases in elderly women; post-menopausal bone fractures
ID recreational physical-activity; amyotrophic-lateral-sclerosis; acute myocardial-infarction; breast-cancer risk; body-mass index; parkinsons-disease; mediterranean diet; smoking-cessation; fat distribution; osteo-arthritis
AB BACKGROUND: Lifestyle changes around the time of menopause have the potential to impact on morbidity and eventual mortality. Here we review this topic to identify how such changes may improve health at perimenopause and beyond. METHODS: Searches were performed in Medline and other databases. Each subject summary was presented to the ESHRE Workshop Group, where omissions or disagreements were resolved by discussion. RESULTS: Body weight increases because the decline in physical activity during the perimenopause is greater than the concomitant decline in energy intake. It is imperative to stop smoking before menopause because the risk of acute myocardial infarction rises sharply thereafter. Cardiovascular events can be reduced by managing risk factors, such as hypertension and increased lipids and body weight. Breast cancer risk is increased

to a similar extent by hormone use, decreased physical activity, increased calorie intake and alcohol use, all reflecting lifestyle decisions. Smoking, alcohol and exercise may increase or decrease risk of aging brain disorders, especially dementia and Parkinson's disease, while stress is consistently associated with increased risk and a prudent diet is consistently associated with reduced risk. Osteoarthritis frequency increases after 50 years of age and risk is elevated 3-fold by obesity, while risk of osteoporosis can be minimized by smoking cessation, adequate vitamin D intake and regular weight-bearing exercise. CONCLUSIONS: Lifestyle changes around the time of the perimenopause can reduce the likelihood and severity of heart disease and chronic illness in later years and the cost of care of elderly women.
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PT J
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TI Bone presence between the central peg's radial fins of a partially cemented pegged all poly glenoid component suggest few radiolucencies
SO JOURNAL OF SHOULDER AND ELBOW SURGERY
LA English
DT Article
DE Total shoulder arthroplasty; glenoid loosening; shoulder replacement; glenoid; CT scan; radiolucencies
ID total shoulder arthroplasty; surface replacement arthroplasty; neer hemiarthroplasty; follow-up; osteoarthritis; prosthesis; polyethylene; survivorship; regression
AB Background: Cement penetration problems and/or cement-induced bone necrosis may contribute to glenoid component failures. An all polyethylene component was developed that promotes biologic fixation between radial fins of its central peg and utilizes minimal cement fixation for its peripheral pegs, but it has little published data. We hypothesized better bone presence between the radial fins would be associated with less overall radiolucencies. This study's purpose was to utilize computed tomography (CT) and plain films to assess for bone between the central peg's radial fins and to assess overall component radiolucencies. Materials and methods: Thirty-five of 48 consecutively performed total shoulder arthroplasties (TSA) for primary glenohumeral osteoarthritis were in patients able to participate a minimum 2 years after surgery. All had reamed humeral head bone packed between radial fins of the central peg and minimal cement for the peripheral pegs. Thin cut (0.625 mm) CT scans, standardized plain films, Simple Shoulder Tests (SST), and Constant scores were obtained. A musculoskeletal radiologist calculated Yian CT scores, bone presence between fins on CT, and Lazarus radiolucency scores. Results: At a mean of 43 months, by CT: I) better Yian scores correlated with more bone between fins, and 2) bone was present in 6/6 inter-fin compartments in 23/35 shoulders, averaging 4.5/6 overall. Mean Lazarus radiolucency score was 0.45. Mean SST and Constant scores were 10.3 and 81.3, respectively. Conclusion: TSA utilizing autologous bone in inter-fin compartments of the central peg and minimal peripheral peg cement maintained bone presence a minimum 2 years post-op. More bone imparted fewer overall component radiolucencies. Level of evidence: Level IV, Case Series, Treatment Study. (C) 2011 Journal of Shoulder and Elbow Surgery Board of Trustees.
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TI Identification of Major Direct Medical Cost Categories Among Patients with Musculoskeletal Conditions Undergoing Outpatient Rehabilitation
SO PHYSIKALISCHE MEDIZIN REHABILITATIONSMEDIZIN KURORTMEDIZIN
LA English
DT Article
DE cost categories; direct medical cost; rehabilitation; health resources
ID low-back-pain; rheumatoid-arthritis; economic-evaluation; illness; instrument; trials
AB Purpose: The goal of this study was to identify major cost categories of direct medical costs among patients with musculoskeletal conditions undergoing outpatient rehabilitation. Materials and Methods: Minor cost categories were discriminated from major cost categories by ranking the percentage of direct medical costs represented by each category using a cut-off of 5%. Means and 95% confidence intervals of direct medical costs were estimated using 1000 bootstrap samples. Results: Major cost categories for our sample including osteoarthritis, osteoporosis, back pain and fibromyalgia patients were outpatient physician visits, non physician services, medication and inpatient treatment. Since the 95% confidence intervals of estimated means were overlapping, no statistically significant difference can be assumed between the mean direct medical costs estimated solely with major categories and the one estimated with all available categories. Discussion: The development of a standard brief core set of major direct medical cost categories for musculoskeletal conditions is important regarding the standardization of comparative economic evaluations. The major cost categories we identified can serve as candidate categories and make a valuable contribution to the establishment of a standard brief core set of major cost categories for musculoskeletal conditions which should be included in the alongside economic evaluation of rehabilitative interventions. Conclusion: In summary, we have identified a) medication, b) physician visits, c) non physician services use and d) inpatient treatment as major direct medical cost categories for our sample including osteoarthritis, osteoporosis, back pain and fibromyalgia patients.

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NR 23
TC 0
Z9 0
U1 0

U2 2
PU GEORG THIEME VERLAG KG
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PA RUDIGERSTR 14, D-70469 STUTTGART, GERMANY
SN 0940-6689
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J9 PHYS MED REHAB KUROR
JI Physik. Med. Rehabilitationsmed. Kurort.
PD JUN 15
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VL 21
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WC Rehabilitation; Sport Sciences
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PT J
AU Tsuboi, M
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Suzuki, Koji
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TI Do musculoskeletal degenerative diseases affect mortality and cause of death after 10 years in Japan?
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Osteoarthritis of the knee; Lumbar spondylosis; Osteoporosis; Mortality; Cause of death
ID bone-mineral density; osteoporotic fractures; rheumatoid-arthritis; vertebral

fractures; telomere length; osteoarthritis; women; knee; men; association
AB There are several reports from Europe and the United States on mortality from musculoskeletal degenerative diseases; however, no reports have been published from Japan. This study is the first that has examined whether musculoskeletal degenerative diseases affect life prognosis in Japan. As many as 944 persons who were 60 years of age and older and who underwent one or more musculoskeletal checkups (knee, lower back, and bone mineral density examination) were enrolled. Survival and death after 10 years were examined. For each knee, lower back, and bone mineral density examination, subjects were divided into normal and abnormal groups. For each of the examinations (knee, lower back, or bone mineral density), 10-year mortality was compared between the two groups. Also, causes of death were examined after 10 years. As many as 805 subjects survived and 125 died. For those with and without osteoarthritis of the knee, mortality after 10 years was 17 and 10%, respectively. For those with and without lower back abnormalities, mortality after 10 years was 12 and 14%, respectively. For those with or without low bone mineral density, mortality after 10 years was 17 and 10%, respectively. Multivariate analysis adjusted for age, gender, body mass index, and lifestyle revealed that odds ratio of death after 10 years was 2.32 and 2.33 in the presence of osteoarthritis of the knee and a low bone mineral density, respectively, and thus the risk of death after 10 years was significantly high. With regard to the cause of death, cerebrovascular and cardiovascular diseases were most frequently evident in patients with osteoarthritis of the knee. Musculoskeletal degenerative diseases influence mortality after 10 years.
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Z9 35
U1 0
U2 3
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WC Endocrinology & Metabolism; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Research & Experimental Medicine
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PT J
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AF Boutroy, Stephanie
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TI Comparison of 2D and 3D bone microarchitecture evaluation at the femoral neck, among postmenopausal women with hip fracture or hip osteoarthritis
SO BONE
LA English
DT Article
DE Femoral neck; Microarchitecture; Microcomputed tomography; Hip osteoarthritis; Hip fracture
ID quantitative computed-tomography; trabecular bone; cancellous bone; proximal femur; mineral density; iliac crest; hr-pqct; osteoporosis; biopsy; risk
AB Objectives: High resolution peripheral quantitative tomography (HR-pQCT) is used more widely to assess microarchitecture, but we are lacking comparisons

between HR-pQCT and histomorphometry, which is considered the gold standard. They have only been assessed on different anatomical regions. The purpose of our study was to assess the microarchitecture and the relative contribution of cortical and trabecular bone in hip fracture with this 3D imaging technique, compared with the 2D histomorphometry. Material and methods: We compared the distribution of cortical and trabecular bone in the ultradistal femoral neck samples (similar to 3 mm thick) obtained after total hip replacement in 21 hip osteoarthritis (HOA, 66 +/- 8 yrs) and 20 hip fracture (HF, 79 +/- 8 yrs) menopausal women by a direct 3D evaluation method (HR-pQCT: XtremeCT, Scanco Medical AG) and by histomorphometry. performed and averaged on three 10 mu m-thick sections 800 mu m apart. Results: Significant correlations were found between both techniques for trabecular bone volume, number, thickness, separation and cortical thickness ($0.51<r'<0.81$, $p<0.01$). The connectivity was also significantly correlated ($r'=0.58$, $p<0.001$) between both techniques, as well as the trabecular bone pattern factor measured in 2D with the structural model index (SMI) measured in 3D ($r'=0.62$, $p<0.001$). However HR-pQCT overestimated the absolute value of most parameters, with higher values being even more overestimated. The agreement between the two techniques was weak for cortical porosity. With the 3D measurements we found that trabecular bone volume was 43% lower in HF than HOA ($p<0.01$), associated with loss of trabecular connectivity (-50%, $p<0.01$) and a more rod-like structure (SMI, 22%, $p<0.01$), mainly at the inferior (34%, $p<0.01$) and posterior (22%, $p<0.05$) quadrants. Cortical thickness was found to be lower in the posterior quadrants (-22%, $p<0.05$) and tended to be lower in HF than in HOA at the inferior quadrant (-14%, $p=0.08$), but it was still the highest at the inferior quadrant in both groups. In conclusion, 3D methods confirmed the alteration of trabecular and cortical bone found by histomorphometry in HF compared with HOA and the frequency of the rod-like structure in HF. (C) 2011 Elsevier Inc. All rights reserved.
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NR 41
TC 35
Z9 37
U1 0
U2 32
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA
SN 8756-3282
EI 1873-2763
J9 BONE
JI Bone
PD NOV 15
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VL 49
IS 5
BP 1055
EP 1061
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WC Endocrinology & Metabolism
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PT J
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TI Therapeutic effects of exercise training in patients with pediatric rheumatic diseases
SO REVISTA BRASILEIRA DE REUMATOLOGIA
LA English
DT Review
DE physical fitness; motor activity; rheumatology; child
ID musculoskeletal pain syndrm; juvenile idiopathic arthritis; joint hypermobility syndrome; physical-activity; functional ability; aerobic exercise; children; fibromyalgia; program; fitness
AB Over the past decades, the role of exercise training in rheumatic diseases has been largely explored. Currently, physical activity is well known to benefit patients with osteoporosis, osteoarthritis, systemic lupus erythematosus, systemic sclerosis, idiopathic inflammatory myopathy, fibromyalgia and rheumatoid arthritis. Therefore, exercise training has been considered a valuable tool for treating rheumatic patients. The therapeutic effects of exercise training have also been investigated in pediatric rheumatic diseases. Collectively, studies have revealed the therapeutic potential of exercise in juvenile idiopathic arthritis, juvenile systemic lupus erythematosus, juvenile dermatomyositis, juvenile fibromyalgia and other causes of chronic pain. The aim of this review is to familiarize the pediatric rheumatologist with the exercise science field; discuss the potential benefits of exercise training in pediatric rheumatic diseases, emphasize both research and clinical perspectives of this promising field; and propose practical models of pre-participation examinations and contraindications to exercise.
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PT J
AU Nishimura, A
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AF Nishimura, Akinobu
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TI Risk factors for the incidence and progression of radiographic osteoarthritis of the knee among Japanese
SO INTERNATIONAL ORTHOPAEDICS
LA English
DT Article
ID bone-mineral density; women; prevalence; hip; weight; men
AB This longitudinal study aimed to identify risk factors for the incidence and progression of radiographic knee osteoarthritis (OA). We examined the inhabitants of Miyagawa village aged a parts per thousand yen65 years every two years between 1997 and 2007. Anteroposterior radiographs of both knees were graded for OA using the Kellgren-Lawrence (K/L) grading system. Knee OA was defined as grade a parts per thousand yen2. We recorded the incidence of knee OA among participants in whom both knees changed from K/L grades 0 or 1 to a parts per thousand yen2 over a four-year follow-up period. We also recorded the progression of knee OA using this threshold among patients in whom one or both knees changed from K/L grades 2 or 3 to any higher grade over the follow-up period. Baseline data obtained from standard questionnaires, physical findings and X-rays included age, gender, body mass index (BMI), osteoporosis, Heberden's nodes, knee range of motion (ROM), knee pain and cigarette smoking. The rates of incidence and progression of knee OA among 360 participants (241 women, 119 men) who fulfilled the study criteria were 4.0 and 6.0% per year, respectively. Female gender (odds ratio [OR] 2.849, 95% confidence interval [CI] 1.170-6.944) and high BMI (OR 1.243, 95% CI 1.095-1.411) were significantly associated with the incidence of knee OA, and restricted knee ROM (OR 0.941, 95% CI 0.892-0.992) was significantly associated with knee OA progression. Patients with a low knee ROM relative to grade of radiographic knee OA require more careful follow-up than those with a higher ROM.
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TI Active Shape Modeling of the Hip in the Prediction of Incident Hip Fracture
SO JOURNAL OF BONE AND MINERAL RESEARCH
LA English
DT Article
DE ACTIVE SHAPE MODELING; HIP SHAPE; HIP FRACTURE; OSTEOPOROSIS; BONE
ID osteoporotic fractures; proximal femur; radiographic osteoarthritis; femoral

geometry; bone-density; women; risk; men; recognition; progression
AB The objective of this study was to evaluate right proximal femur shape as a risk factor for incident hip fracture using active shape modeling (ASM). A nested case-control study of white women 65 years of age and older enrolled in the Study of Osteoporotic Fractures (SOF) was performed. Subjects (n = 168) were randomly selected from study participants who experienced hip fracture during the follow-up period (mean 8.3 years). Controls (n = 231) had no fracture during follow-up. Subjects with baseline radiographic hip osteoarthritis were excluded. ASM of digitized right hip radiographs generated 10 independent modes of variation in proximal femur shape that together accounted for 95% of the variance in proximal femur shape. The association of ASM modes with incident hip fracture was analyzed by logistic regression. Together, the 10 ASM modes demonstrated good discrimination of incident hip fracture. In models controlling for age and body mass index (BMI), the area under receiver operating characteristic (AUROC) curve for hip shape was 0.813, 95% confidence interval (CI) 0.771-0.854 compared with models containing femoral neck bone mineral density (AUROC = 0.675, 95% CI 0.620-0.730), intertrochanteric bone mineral density (AUROC = 0.645, 95% CI 0.589-0.701), femoral neck length (AUROC = 0.631, 95% CI 0.573-0.690), or femoral neck width (AUROC = 0.633, 95% CI 0.574-0.691). The accuracy of fracture discrimination was improved by combining ASM modes with femoral neck bone mineral density (AUROC = 0.835, 95% CI 0.795-0.875) or with intertrochanteric bone mineral density (AUROC = 0.834, 95% CI 0.794-0.875). Hips with positive standard deviations of ASM mode 4 had the highest risk of incident hip fracture (odds ratio = 2.48, 95% CI 1.68-3.31, p < .001). We conclude that variations in the relative size of the femoral head and neck are important determinants of incident hip fracture. The addition of hip shape to fracture-prediction tools may improve the risk assessment for osteoporotic hip fractures. (c) 2011 American Society for Bone and Mineral Research.
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Marc, Janja
TI Osteoblastogenesis and Adipogenesis Are Higher in Osteoarthritic than in Osteoporotic Bone Tissue
SO ARCHIVES OF MEDICAL RESEARCH
LA English
DT Article
DE PPAR gamma; RUNX2; Gene expression; Fracture; Osteoporosis; Osteoarthritis
ID activated receptor-gamma; ppar-gamma; gene-expression; adipose-tissue; inverse relationship; lipid-metabolism; in-vivo; differentiation; marrow; hypoxia
AB Background and Aims. New data show that increased adipogenesis in bone marrow may decrease osteoblastogenesis, resulting in osteoporosis (OP). Runt-related transcription factor 2 (RUNX2) and peroxisome proliferator-activated receptor gamma (PPAR gamma) are two main transcriptional regulators controlling osteoblastogenesis and adipogenesis from the same precursor cell in bone-the mesenchymal stem cell. Because osteoarthritis (OA) and OP present the opposing bone phenotype, our aim was to determine whether the expression of selected adipogenic genes is lower in OA compared to OP bone tissue. Methods. Bone samples were obtained from gender-matched OP (n = 54) and OA (n = 49) patients undergoing hip arthroplasty. Osteoblastogenesis and adipogenesis were estimated by gene expression analysis of RUNX2, PPAR gamma 2 and their downstream genes. Results. In OA bone, significantly higher expression of PPAR gamma 2 and adiponectin as well as RUNX2, osterix and osteocalcin were obtained, suggesting higher adipogenesis and osteoblastogenesis in OA than in OP. There were no differences in RUNX2/PPAR gamma 2 and osteocalcin/adiponectin ratios between groups, suggesting similar balance of both processes. Higher perilipin 2, angiopoietin-like 4 and fatty-acid binding protein 4 mRNA levels in OP suggest activation of other transcription factors or hypoxic conditions in OP bone. Conclusions. Regulation of bone formation by RUNX2 and PPAR gamma 2 is modified in OA compared to OP, resulting in higher osteoblastogenesis and adipogenesis in OA. Both processes are similarly balanced in OP and OA but less active in OP. (C) 2011 IMSS. Published by Elsevier Inc.
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TI FREQUENCY OF RHEUMATIC DISEASES IN PORTUGAL: A SYSTEMATIC REVIEW
SO ACTA REUMATOLOGICA PORTUGUESA
LA English
DT Review
DE Rheumatic Diseases; Burden of Disease; Frequency; Prevalence; Incidence; Portugal
ID bone-mineral density; musculoskeletal diseases; lupus-erythematosus; hip-fractures; prevalence; population; arthritis
AB Objectives: To describe the frequency of rheumatic diseases in Portugal through

a systematic review of published literature, critically appraising available information and identifying data collection gaps. Methods: We systematically reviewed the literature to retrieve data on the occurrence of rheumatic diseases in Portugal through MEDLINE and Index das Revistas Medicas Portuguesas searches, PhD theses, and national health surveys reports. Original articles in English or Portuguese published between 1 January 2000 and 31 December 2010 were included. Results: We retrieved information for the prevalence of rheumatic diseases, osteoarthritis, back pain, work-related musculoskeletal disorders (WRMDs), osteoporosis, fibromyalgia, rheumatoid arthritis, spondyloarthritis and other systemic rheumatic diseases and for the incidence of back pain, osteoporotic fracture and other systemic rheumatic diseases. The prevalence of rheumatic diseases ranged from 16.0% to 24.0% and the prevalence of osteoarthritis was 11.1% (95% confidence intervals (95%CI): 9.4-13.1) in the knee and 5.5% (95%CI: 4.3-7.0) in the hip. Regarding back pain, period prevalence ranged from 8.0% (95%CI: 6.1-10.1) to 29.5% (95%CI: 23.4-36.2) in children and from 12.3% (95%CI: 10.5-14.3) to 51.3% (95%CI: 48.6-53.9) in adults. The prevalence of WRMDs ranged from 5.9% to 84.2% (95%CI: 80.8-87.3). The yearly incidence of osteoporotic fracture (per 100 000) ranged from 93.3 to 481 (95%CI: 407-564) in women and from 31.9 to 154 (95%CI: 106-218) in men. The prevalence of osteoporosis in women ranged from 11.0% to 15.4% (95%CI: 13.4-17.6) and in men from 1.1% to 16.8% (95%CI: 12.2-22.3). The prevalence of fibromyalgia ranged from 3.6% (95%CI: 2.0-5.2) to 3.7% (95%CI: 2.0-5.4). The prevalence estimates of ankylosing spondylitis and of spondyloarthritis were 0.6% and 1.6% (95%CI: 0.8-2.7), respectively. The prevalence of systemic lupus erythematosus was estimated in 0.2% (95%CI: 0.1-0.8). Conclusions: There is a broad spectrum of information available that indicates an important burden of rheumatic diseases in the general Portuguese population. Gaps were identified particularly regarding inflammatory arthropathies and other systemic rheumatic diseases.
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PT J
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TI Quantitative genetic study of the circulating osteopontin in community-selected families
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Association analysis; IBSP; Mineralization; OPN; SNP; SPP1
ID bone-mineral density; systemic-lupus-erythematosus; receptor activator; serum osteopontin; deficient mice; osteoarthritis; polymorphisms; population; protein; calcification
AB The study assessed contribution of genetic factors to variability of osteopontin (OPN) levels. Evidence of association of OPN levels with polymorphisms in its structural gene and integrin-binding sialoprotein gene loci was obtained. The results motivate research of OPN-related proteins and genes with respect to biomineralization and other biological processes. Introduction OPN is a major phosphoprotein in bone, which plays key role in regulation of bone mineralization process. It is considered as a promising biomarker for osteoarthritis and osteoporosis, and various other pathological conditions. However, the contribution of genetics and other confounding factors to OPN circulating levels variation in general population has never been specifically determined. The main aims of the present study included (1) evaluation of the putative genetic and familial factors' effect on OPN variability and (2) testing the hypothesis that OPN plasma levels are associated with the genetic polymorphisms in its structural gene locus (SPP1) and in integrin-binding sialoprotein gene locus (IBSP). Methods To address these questions, we used a family-based sample of 925 apparently healthy Caucasian individuals. Association of OPN levels with three SNPs in each of the two selected gene loci was explored using pedigree disequilibrium tests. Results Some 58% and 13% of the OPN levels variability were attributable to genetic factors and common spouse environment, respectively. Three SNPs showed nominally significant association with OPN ($p<0.05$). Of these, rs2616262 linked to IBSP promoter region

remained significant after correction for multiple testing (p=0.003). Significant association of this SNP and rs10516799 (distal segment of SPP1) with OPN was confirmed in several statistical tests. Using a special modification of variance component analysis, we examined gene-gene and gene-sex interaction effects, but found non-significant confirmation for these hypotheses. Conclusions Further studies are required to confirm the observed results and to explore the underlying molecular and physiological mechanisms.
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NR 47
TC 5
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U1 0
U2 6
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AF Mishra, Meenakshi
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TI Nonlinear surrogate modeling of tibio-femoral joint interactions
SO BIOMEDICAL SIGNAL PROCESSING AND CONTROL
LA English
DT Article
DE Surrogate model; Data-driven model; Nonlinear dynamic model; System identification; Tibio-femoral interaction; Ensemble
ID neural-network model; biological-systems; muscle forces; identification; wiener; moments; eeg
AB Musculoskeletal modeling can predict muscle forces and the resulting motion and loading during human ambulatory activities. A better understanding of the

loading environment on hard and soft tissues can enhance our understanding of ligament injury and prevention, tissue engineering, prosthetic design, osteoporosis, and osteoarthritis. The current state-of-the-art in movement simulation is to use simplified representation of the joints, such as representing the knee as a simple hinge joint. The aim of this study is to produce data-driven surrogate models which effectively capture the complex three-dimensional behavior of tibio-femoral joint interactions and that have the ease of use and computational efficiency required for incorporation in existing neuromusculoskeletal simulations. In order to meet our objective, we explored and compared the performance and sensitivity of nonlinear Hammerstein-Wiener, nonlinear autoregressive, and time delay neural network models under different configurations, individually and in ensembles. These models learned from solutions calculated by a validated multibody model of the knee. Inputs to the surrogate models were positions and orientations of the tibia relative to the femur, and the outputs were resulting forces and torques at the tibia with respect to the femur. Models were mixed using mean (sum) rule, weighted mean, and stacked generalization ensemble methods. It was observed that individually, time delay neural network models performed better than other models with normalized mean square errors between 0.0509 and 0.0889 on test data. Among the ensembles, stacked generalization provided the best results reducing test errors by 13-40%. (C) 2010 Elsevier Ltd. All rights reserved.
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TC 7
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U1 0
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TI Synopsis and meta-analysis of genetic association studies in osteoporosis for the focal adhesion family genes: the CUMAGAS-OSTEOporosis information system
SO BMC MEDICINE
LA English
DT Article
ID colia1 sp1 polymorphism; genome-wide association; intron 1 polymorphisms; bone-mineral density; publication bias; field synopsis; risk; osteoarthritis; haplotypes; fractures
AB Background: Focal adhesion (FA) family genes have been studied as candidate genes for osteoporosis, but the results of genetic association studies (GASs) are controversial. To clarify these data, a systematic assessment of GASs for FA genes in osteoporosis was conducted. Methods: We developed Cumulative Meta-Analysis of GAS-OSTEOporosis (CUMAGAS-OSTEOporosis), a web-based information system that allows the retrieval, analysis and meta-analysis (for allele contrast, recessive, dominant, additive and codominant models) of data from GASs on osteoporosis with the capability of update. GASs were identified by searching the PubMed and HuGE PubLit databases. Results: Data from 72 studies involving 13 variants of 6 genes were analyzed and catalogued in CUMAGAS-OSTEOporosis. Twenty-two studies produced significant associations with osteoporosis risk under any genetic model. All studies were underpowered (< 50%). In four studies, the controls deviated from the Hardy-Weinberg equilibrium. Eight variants were chosen for meta-analysis, and significance was shown for the variants collagen, type I, alpha(1) (COL1A1) G2046T (all genetic models), COL1A1 G-1997T (allele contrast and dominant model) and integrin beta-chain beta(3) (ITGB3) T176C (recessive and additive models). In COL1A1 G2046T, subgroup analysis has shown significant associations for Caucasians, adults, females, males and postmenopausal women. A differential magnitude of effect in large versus small studies (that is, indication of publication bias) was detected for the variant COL1A1 G2046T. Conclusion: There is evidence of an implication of FA family genes in osteoporosis. CUMAGAS-OSTEOporosis could be a useful tool for current genomic epidemiology research in the field of osteoporosis.
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NR 56
TC 14
Z9 15
U1 0
U2 10
PU BMC
PI LONDON
PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
SN 1741-7015
EI
J9 BMC MED
JI BMC Med.
PD JAN 26
PY 2011
VL 9
IS
BP
EP

DI 10.1186/1741-7015-9-9
PG 9
WC Medicine, General & Internal
SC General & Internal Medicine
GA 722ET
UT WOS:000287415000001
PM 21269451
DA 2026-02-10
ER

PT J
AU Prieto-Alhambra, D
Javaid, MK
Judge, A
Maskell, J
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Cooper, C
Arden, NK
AF Prieto-Alhambra, Daniel
Javaid, M. Kassim
Judge, Andrew
Maskell, Joe
Kiran, Amit
de Vries, Frank
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Arden, Nigel K.
TI Fracture Risk Before and After Total Hip Replacement in Patients With Osteoarthritis Potential Benefits of Bisphosphonate Use
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID knee osteoarthritis; nonvertebral fractures; oral corticosteroids; propensity score; osteoporosis; risedronate; women; prevalence; symptoms; arthroplasty
AB Objective. The association between osteoarthritis (OA) and fractures remains unclear. OA patients have increased bone mass, but no corresponding decrease in fracture rate. This study was undertaken to determine the fracture rates in patients with hip OA undergoing a total hip replacement (THR), as compared with disease-free controls, and to assess the association between bisphosphonate use and postsurgery fracture risk. Methods. We conducted a population-based parallel-cohorts study. All patients in the UK General Practice Research Database undergoing a THR for hip OA between 1986 and 2006 constituted the exposed cohort (n = 14,133). Five disease-free controls were matched with each patient by age, sex, and practice site. Subjects were followed up for 5 years before and after

surgery. Fracture rates and rate ratios (RRs) were estimated using Poisson regression. In addition, bisphosphonate use was identified among patients undergoing THR, and the data, stratified by the presence or absence of a previous fracture and by treatment propensity score, were assessed using fitted Cox models to study the effect of bisphosphonate use on the risk of fracture postsurgery. Results. Patients undergoing a THR had a similar fracture risk as that in controls in the 5 years before THR, but had higher rates postsurgery, which peaked at years 2.5-5 (adjusted RR 1.24, 95% confidence interval [95% CI] 1.02-1.52). Use of bisphosphonates lowered the fracture risk among THR patients who received bisphosphonates as primary prevention (hazard ratio [HR] 0.56, 95% CI 0.38-0.82) and also among THR patients who had experienced a previous osteoporotic fracture (HR 0.48, 95% CI 0.23-0.99). Conclusion. This study identified a 25% increase in fracture risk at 2.5-5 years postsurgery among patients undergoing a THR. Bisphosphonate use reduced the post-THR risk of fracture when administered both as primary prevention and as secondary prevention, by 44% and 52%, respectively. This must be further confirmed in randomized controlled trials.
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NR 42
TC 33
Z9 33
U1 0
U2 5
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0004-3591
EI 1529-0131
J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
PD APR 15
PY 2011
VL 63
IS 4
BP 992
EP 1001
DI 10.1002/art.30214
PG 10
WC Rheumatology
SC Rheumatology
GA 748VO
UT WOS:000289421100018
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ER

PT J
AU Brennan, SL
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Urquhart, DM
Oldenburg, B
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AF Brennan, S. L.
Pasco, J. A.
Urquhart, D. M.
Oldenburg, B.
Wang, Y.
Wluka, Anita
TI Association between socioeconomic status and bone mineral density in adults: a systematic review
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Bone density; Hip; Social disadvantage spine; Socioeconomic factors; Systematic review
ID early-life; educational-level; osteoporosis risk; health; mass; hip; pregnancy; women; osteoarthritis; prevalence
AB For most causes of mortality and morbidity, a socioeconomic gradient exists; however, this systematic review identified limited evidence for the role of education on bone mineral density (BMD). Further research is required to build upon the current paucity of data examining influences of socioeconomic status (SES) on BMD, especially in men. For most causes of mortality and morbidity, a socioeconomic gradient exists, although little is understood of the relationship between BMD and SES. We systematically evaluated evidence of SES as a risk factor for low BMD at the clinically relevant sites of hip and spine in adults. We conducted a computer-aided search of Medline, EMBASE, CINAHL, and PsychINFO from January 1, 1966 until December 31, 2008. Reviewed studies investigated the relationship between SES parameters of income, education, and occupation, and the level of BMD. Studies were rated based on their methodological quality, and a best-evidence synthesis was used to summarise the results. One case-control and seven cross-sectional studies were identified for inclusion, of which four cross-sectional studies were high-quality. Best-evidence analysis identified consistent, yet limited, evidence for a positive association between educational attainment and BMD in women. No evidence was available regarding an association between income or occupation and BMD in either gender, or education and BMD in men. Limited good quality evidence exists for the role that education level may play in BMD levels. Cohort studies are required to examine the relationship between individual SES parameters and BMD in order to identify potential intervention targets.
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FU National Health and Medical Research Council (NHMRC) of Australia; NHMRC [519404, 436665, 546248]; Monash Senior Research Fellowship; NHMRC Public Health (Australia) [317840, 465142]; National Health and Medical Research Council (NHMRC) [436665, 465142, 546248, 519404] Funding Source: National Health and Medical Research Council (NHMRC)
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NR 46
TC 67
Z9 73
U1 0
U2 14
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD FEB 15
PY 2011
VL 22
IS 2
BP 517
EP 527
DI 10.1007/s00198-010-1261-y
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WC Endocrinology & Metabolism

SC Endocrinology & Metabolism
GA 706HC
UT WOS:000286207800012
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PT J
AU Alexandersen, P
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AF Alexandersen, P.
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TI Strontium ranelate effect in postmenopausal women with different clinical levels of osteoarthritis
SO CLIMACTERIC
LA English
DT Article
ID cruciate ligament transection; estrogen replacement therapy; subchondral bone; knee osteoarthritis; cartilage degradation; cynomolgus monkeys; cancellous bone; ii degradation; ctx-ii; turnover
AB Methods aEuro integral The analysis included the 2617 postmenopausal women (75 years old) with osteoporosis randomized to strontium ranelate or placebo for a 36-month period. Cartilage degradation was evaluated using a validated urinary marker adjusted for creatinine (CTX-II/cr), whereas bone resorption was assessed by serum CTX-I. The presence of osteoarthritis was determined by individual interviews. Results aEuro integral CTX-II was significantly elevated at baseline in subjects with a history of osteoarthritis (OA++) compared to subjects who did not (OA--) ($p < 0.0001$), whereas CTX-I was unaffected by osteoarthritis status. Strontium ranelate caused a significant decrease from baseline in CTX-II over a 12-month period whatever the osteoarthritis status. Strontium ranelate-treated patients had a significant decrease in CTX-II compared to placebo in both OA++ and OA-- groups up to 12 months, the difference remaining still significant at 36 months in patients from the OA-- group ($p < 0.001$). Conclusions aEuro integral The CTX-II profile of changes over 3 years may reflect efficacy of strontium ranelate against cartilage degradation, with an enhanced beneficial effect in subjects with early or mild clinical osteoarthritis, probably exerting its putative chondroprotective influence in early stages of the disease. Carefully controlled studies in targeted populations with early osteoarthritis are warranted to assess the role of strontium ranelate halting osteoarthritis progression.
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NR 32
TC 45
Z9 50
U1 0
U2 14
PU INFORMA HEALTHCARE
PI LONDON
PA TELEPHONE HOUSE, 69-77 PAUL STREET, LONDON EC2A 4LQ, ENGLAND
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EI
J9 CLIMACTERIC
JI Climacteric
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WC Obstetrics & Gynecology
SC Obstetrics & Gynecology
GA 735UB
UT WOS:000288443300009
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ER

PT J
AU Davis, AM
Wood, AM
Keenan, ACM
Brenkel, IJ
Ballantyne, JA
AF Davis, A. M.
Wood, A. M.
Keenan, A. C. M.
Brenkel, I. J.
Ballantyne, J. A.
TI Does body mass index affect clinical outcome post-operatively and at five years after primary unilateral total hip replacement performed for osteoarthritis? A MULTIVARIATE ANALYSIS OF PROSPECTIVE DATA

SO JOURNAL OF BONE AND JOINT SURGERY-BRITISH VOLUME
LA English
DT Article
ID total joint arthroplasty; perioperative morbidity; risk-factors; obesity; dislocation; prediction
AB Studies describing the effect of body mass index (BMI) on the outcome of total hip replacement have been inconclusive and contradictory. We examined the effect of BMI on medium-term outcome in a cohort of 1617 patients who underwent a primary total hip replacement for osteoarthritis. These patients were followed prospectively for five years with the outcomes of dislocation, revision, duration of surgery and deep and superficial infection studied, as well as collecting Harris hip scores (HHS) and Short-Form 36 (SF-36) questionnaires pre-operatively and at review. A multivariate analysis was performed to see whether BMI is an independent predictor of poor outcome. We found that patients with a BMI of >= 35 kg/m(2) have a 4.42 times higher rate of dislocation than those with a BMI < 25 kg/m(2). Increasing BMI is also associated with superficial infection and poorer HHS and SF-36 scores at five years. These trends remain significant even when multivariate analysis adjusts for age, gender, prosthesis, operating consultant, pre-operative HHS and SF-36, and comorbidities including diabetes mellitus, cardiac disease and osteoporosis. Despite the increased risks, the five-year outcome scores indicate that obese patients have much to gain from total hip replacement. Thus total hip replacement should not be withheld from patients solely on the grounds of an elevated BMI. However, longer-term follow-up of this cohort is required to establish whether adverse outcomes become more evident with time.
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NR 27
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Z9 127
U1 0
U2 5
PU BRITISH EDITORIAL SOC BONE JOINT SURGERY
PI LONDON
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SN 0301-620X
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J9 J BONE JOINT SURG BR
JI J. Bone Joint Surg.-Br. Vol.
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WC Orthopedics; Surgery
SC Orthopedics; Surgery
GA 821ON

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PT J
AU Wang, YXJ
Kwok, AWL
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TI Relationship Between Hip Bone Mineral Density and Lumbar Disc Degeneration: A Study in Elderly Subjects Using an Eight-Level MRI-Based Disc Degeneration Grading System
SO JOURNAL OF MAGNETIC RESONANCE IMAGING
LA English
DT Article
DE lumbar spine; osteopenia; osteoporosis; bone mineral density; intervertebral disc; degeneration; hip
ID intervertebral disc; postmenopausal women; spinal degeneration; osteoporosis; osteoarthritis; coexistence; fractures; features
AB Purpose: To study the relationship between hip bone mineral density (BMD), lumbar disc degeneration, and lumbar disc space narrowing in elderly subjects. Materials and Methods: The study cohort comprised 196 females and 163 males (age range, 67-89 years) with no age difference between the two groups. Anteroposterior total hip areal BMD was measured with DXA and lumbar spine MRI was acquired using a 1.5 Tesla scanner. Lumbar disc degeneration was assessed using an eight-level grading system wherein each grade represents a stepwise progression from normal disc to severe disc degeneration and disc space narrowing. Results: After controlling for the age effect, no significant relationship was observed between total hip T-score status and severity of disc degeneration. There was no significant difference in total hip BMD in the subjects with or without the disc space narrowing ($P < 0.05$). Female subjects are more likely to have a narrowed disc space than males at all levels, and being statistically significant at L3/4 and L4/5 levels, and with an overall significance of $P = 0.007$. Conclusion:

There was no association observed between hip BMD and lumbar disc degeneration. Elderly females were more likely to have a narrowed lumbar disc space than elderly males.
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1994, 1900, V843, V0, P1
NR 30
TC 25
Z9 32
U1 0
U2 11
PU WILEY-BLACKWELL
PI MALDEN
PA COMMERCE PLACE, 350 MAIN ST, MALDEN 02148, MA USA
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EI
J9 J MAGN RESON IMAGING
JI J. Magn. Reson. Imaging
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WC Radiology, Nuclear Medicine & Medical Imaging
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PT J
AU Vinjamuri, S
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Ramesh, Chandakacharla N.
Jarvis, Jonathan
Gallagher, Jim A.
Ranganath, Lakshminarayana L.
TI Nuclear medicine techniques in the assessment of alkaptonuria
SO NUCLEAR MEDICINE COMMUNICATIONS
LA English
DT Review
DE alkaptonuria; imaging; nuclear medicine; positron emission tomography-computed tomography
ID bone-mineral density; f-18 fdg pet/ct; rheumatoid-arthritis; disease-activity; scintigraphy; diagnosis; osteoarthritis; arthropathy; tomography; patient
AB Alkaptonuria is a rare autosomal recessive disorder due to a lack of the enzyme homogentisate dioxygenase, leading to ochronosis, a process of accumulation of a melanin-like polymer of homogentisic acid in cartilage and other collagenous structures. Patients develop severe osteoarthropathy that resembles osteoarthritis. Although the diagnosis of alkaptonuria is not particularly challenging in view of the blue-black discolouration of visible connective tissue and the presence of homogentisic acid in urine, the natural history of alkaptonuria remains poorly understood. Patients would benefit immensely from an objective assessment of their disease status and from a clearer understanding of the pathophysiology and associated physical changes. Isotope bone scans, which are commonly used to identify the extent of involvement of bones in cancerous processes, have also been increasingly used for characterizing the extent of arthropathy in conditions such as osteoarthritis and rheumatoid arthritis. Semiquantitative scores based on the extent of involvement of joints have been used to describe the involvement of large joints in the context of symptomatic treatment for osteoarthritis. A similar semiquantitative isotope bone scan score depending on the involvement of the number of large joints in patients with alkaptonuria can be formulated and validated in a suitable cohort of patients. Bone densitometry measurement using dual-energy X-ray absorptiometry scanning is an internationally accepted tool to assess the risk and extent of osteoporosis, and is increasingly used to assess the additional fracture risk in patients with arthropathy. We believe that, currently, nuclear medicine techniques can provide useful information, which can be incorporated into disease severity scores for alkaptonuria. Once the biological basis for alkaptonuria is better understood, it is feasible that nuclear medicine techniques of even greater sensitivity and specificity can be developed, thereby taking advantage of the vast advances in the fields of radiochemistry, radiopharmacy, positron emission tomography-computed tomography and positron emission tomography-magnetic resonance imaging scanning. Nucl Med Commun 32:880-886 (C) 2011 Wolters Kluwer Health vertical bar Lippincott Williams & Wilkins. Nuclear Medicine Communications 2011, 32:880-886
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NR 40
TC 5
Z9 9
U1 0
U2 11
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
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J9 NUCL MED COMMUN
JI Nucl. Med. Commun.
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PT J
AU Herrero-Beaumont, G
Roman-Blas, JA
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AF Herrero-Beaumont, Gabriel
Roman-Blas, Jorge A.
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Berenbaum, Francis
Castaneda, Santos
TI Bone mineral density and joint cartilage: four clinical settings of a complex relationship in osteoarthritis
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID radiographic knee osteoarthritis; subchondral bone; articular-cartilage; hand osteoarthritis; hip osteoarthritis; elderly-men; osteoporotic fractures; inverse relationship; women; population
AB Experimental and clinical data support the hypothesis that both high and low bone mineral density (BMD) conditions, including osteoporosis, may induce osteoarthritis. However, these conditions do not always predispose to osteoarthritis progression. Four clinical settings could arise from this relationship, and furthermore two phenotypes may be identified whether early osteoarthritis coexists with high or low BMD.
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U2 12
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PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR,
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JI Ann. Rheum. Dis.
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WC Rheumatology

SC Rheumatology
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PT J
AU Daoussis, D
Andonopoulos, AP
AF Daoussis, Dimitrios
Andonopoulos, Andrew P.
TI The Emerging Role of Dickkopf-1 in Bone Biology: Is It the Main Switch Controlling Bone and Joint Remodeling?
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE Dickkopf-1; DKK-1; joint remodeling; rheumatoid arthritis; ankylosing spondylitis; bone; osteoporosis; osteoarthritis; bone mass; Wnt
ID prostate-cancer; circulating dickkopf-1; pagets-disease; rheumatoid-arthritis; serum concentrations; wnt pathway; dkk-1; mass; progression; expression
AB Background: Dickkopf-1 (DKK-1), an inhibitor of the Wnt pathway, has recently emerged as an important player in several critical aspects of bone biology. Methods: We performed an extensive internet search (MEDLINE) using the key words Dickkopf-1 and the abbreviation DICK-1. Results: DKK-1 is a regulator of bone mass with increased expression linked to osteopenia and decreased expression to high bone mass. Moreover, it appears to actively participate in joint remodeling in animal models of arthritis, with increased levels related to bone resorption and decreased levels to new bone formation. Recent studies indicate its possible involvement in the remodeling process of human systemic rheumatic diseases such as rheumatoid arthritis and ankylosing spondylitis. DKK-1 may also play a role in osteoarthritis, metabolic bone disease (osteoporosis and Paget's disease), as well as multiple myeloma-associated bone disease and prostate cancer bone metastases. Conclusions: DKK-1 is a regulator of bone mass and joint remodeling. It may be a promising therapeutic target in osteoporosis; monoclonal antibody-based inhibition of Dkk-1 is already under development for osteoporosis treatment. Its role as a regulator of joint remodeling in animal models requires further exploration in humans. (C) 2011 Elsevier Inc. All rights reserved. Semin Arthritis Rheum 41:170-177
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U1 0
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PT J
AU Erol, M
AF Erol, Maral
TI Melting bones: The social construction of postmenopausal osteoporosis in Turkey
SO SOCIAL SCIENCE & MEDICINE
LA English
DT Article
DE Turkey; Menopause; Osteoporosis; Risk; Medicalization; Embodied risk; Lifestyle risk; Gender
ID women; menopause; osteoarthritis; experiences; discourses; modernity; knowledge; awareness; medicine; density
AB The increased medicalization of different life stages, including menopause, is a subject studied mostly in the Western context. Examining medicalization in the non-Western world advances discussions of body, identity and health. In this paper. I analyze the discourses around postmenopausal osteoporosis in Turkey, focusing on the different constructions of risk in the medical and popular literature. The empirical basis of the paper draws on ethnographic research done in Istanbul, Turkey between June 2006 and March 2007. The research includes participant observation in gynecology clinics, interviews with clinicians and menopausal women and archival research on the representations of menopause in the Turkish media between 1999 and 2006. Referred to as kemik erimesi (melting of the bones) in colloquial Turkish, osteoporosis has been an essential component in the medicalization of menopause in Turkey. I argue that postmenopausal osteoporosis is defined as a combination of embodied risk, which is related to the definition of menopause as a risky period, and lifestyle risk, demonstrated in discussions around "traditional" vs. "modern" clothing and healthcare habits. The Turkish example emphasizes the importance of local conditions in defining medical risk and complicates the embodied vs. lifestyle risk categories. (C) 2011 Elsevier Ltd. All rights reserved.
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PU PERGAMON-ELSEVIER SCIENCE LTD
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SC Public, Environmental & Occupational Health; Biomedical Social Sciences
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PT J
AU Stevenson, JC
AF Stevenson, John C.
TI A woman's journey through the reproductive, transitional and postmenopausal periods of life: Impact on cardiovascular and musculo-skeletal risk and the role of estrogen replacement
SO MATURITAS
LA English
DT Review
DE Cardiovascular risk; Estrogen; Hormone replacement; Menopause; Osteoarthritis; Osteoporosis; Women's health
ID coronary-heart-disease; bone-mineral density; hot flashes; venous thromboembolism; ovarian hormones; womens health; therapy; osteoarthritis; osteoporosis; fractures
AB Sex hormones are fundamental for female development and they are important physiologically to maintain the health and normal functioning of several organs such as the brain, heart and bone. It is now clear that the hormonal changes that occur during a woman's life, particularly her estrogen status, can modulate disease activity. This is especially true for cardiovascular and musculo-skeletal diseases, which are two leading causes of morbidity and mortality in women. With the general aging of the population they represent a serious and growing public health concern. Estrogen synthesis and blood levels fluctuate during a woman's life and in this review three broad periods will be considered: reproductive phase, transition and postmenopausal phase. Generally speaking, women in the reproductive phase of their life are at low risk of cardiovascular and musculo-skeletal disorders. However, the onset of menopause and the loss of ovarian function is associated with a significant increase in the prevalence of diseases such as coronary heart disease, osteoarthritis and osteoporosis. The prevalence of these debilitating diseases continues to increase through the postmenopausal period. Estrogen replacement is an obvious treatment approach to counter the problems associated with the loss of ovarian function and subsequent estrogen deficiency. Overall, oral and transdermal estrogen replacement are similarly effective in relieving menopausal symptoms and disorders that manifest during this period of a woman's life. Transdermal estrogen may be preferable in older women because of its lower thrombogenic potential. In this journey through a woman's life current best evidence relating to cardiovascular and musculoskeletal risk will be reviewed in line with well documented management strategies. (C) 2011 Elsevier Ireland Ltd. All rights reserved.
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FU Eli Lilly; Janssen-Cilag; Novo Nordisk; Organon/Schering-Plough; Schering; Shire; Solvay; Wyeth; Theramex Merck Serono
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PU ELSEVIER IRELAND LTD
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PA ELSEVIER HOUSE, BROOKVALE PLAZA, EAST PARK SHANNON, CO, CLARE, 00000, IRELAND
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WC Geriatrics & Gerontology; Obstetrics & Gynecology
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GA 832AA
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PT J
AU Edmondson, MC
Isaac, D
Wijeratna, M
Brink, S
Gibb, P
Skinner, P
AF Edmondson, Mark C.
Isaac, David
Wijeratna, Malin
Brink, Sean
Gibb, Paul
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TI Oxford unicompartmental knee arthroplasty: medial pain and functional outcome in the medium term

SO JOURNAL OF ORTHOPAEDIC SURGERY AND RESEARCH
LA English
DT Article
ID replacement; prosthesis
AB Background: In our experience results of the Oxford unicompartmental knee replacement have not been as good as had been expected. A common post operative complaint is of persistent medial knee discomfort, it is not clear why this phenomenon occurs and we have attempted to address this in our study. Methods: 48 patients were retrospectively identified at a mean of 4.5 years (range = 3 to 6 years) following consecutive Oxford medial Unicompartmental Knee arthroplasties for varus anteromedial osteoarthritis. The mean age at implantation was 67 years (range 57-86). Of these 48 patients, 4 had died, 4 had undergone revision of their unicompartmental knee replacements and 2 had been lost to follow up leaving 38 patients with 40 replaced knees available for analysis using the 'new Oxford Knee Score' questionnaire. During assessment patients were asked specifically whether or not they still experienced medial knee discomfort or pain. Results: The mean 'Oxford score' was only 32.7 (range = 16 to 48) and 22 of the 40 knees were uncomfortable or painful medially. The accuracy of component positioning was recorded, using standard post operative xrays, by summing the angulation or displacement of each component in two planes from the ideal position (according to the 'Oxford knee system radiographic criteria'). No correlation was demonstrated between the radiographic scores and the 'Oxford scores', or with the presence or absence of medial knee discomfort or pain. Conclusion: In our hands the functional outcome following Oxford Unicompartmental knee replacement was variable, with a high incidence of medial knee discomfort which did not correlate with the postoperative radiographic scores, pre-op arthritis and positioning of the prosthesis.
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TC 20
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U2 0
PU BMC
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PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
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JI J. Orthop. Surg. Res.
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AU Botter, SM
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TI Osteoarthritis Induction Leads to Early and Temporal Subchondral Plate Porosity in the Tibial Plateau of Mice An In Vivo Microfocal Computed Tomography Study
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID articular-cartilage; bone changes; knee-joint; femoral-head; model; osteoporosis; chondrocytes; ct; osteoblasts; quantification
AB Objective. In osteoarthritis (OA), changes occur in both cartilage and subchondral bone. The subchondral bone plate facilitates normal cross-talk between articular cartilage and trabecular subchondral bone, and adaptive changes in the plate due to OA may therefore disturb cross-talk homeostasis. To investigate these changes over time, we examined the cartilage-subchondral bone interface using a combined approach of histologic analysis and in vivo microfocal computed tomography. Methods. Sixteen-week-old male C57BL/6 mice (n = 32) received intraarticular injections of collagenase in 1 joint to induce instability-related OA and received saline injections in the contralateral knee joint (control joint). At 2, 4, 6, 10, and 14 weeks after injection, changes in the tibial subchondral bone plate and subchondral trabeculae were analyzed. Results. Two weeks after injection, collagenase-injected joints had significantly more cartilage damage and osteophytosis than did control joints. Osteoclast activity directly underneath the subchondral bone plate was significantly elevated in collagenase-injected joints compared to control joints (mean +/- SEM osteoclast surface/bone surface 11.07 +/- 0.79% versus 7.60 +/- 0.81%), causing the plate to become thinner and creating a large increase in subchondral bone plate porosity (mean +/- SEM cumulative

porosity volume 0.05 +/- 0.04 x 10(-3) mm(3) in control joints versus 2.52 +/- 0.69 x 10(-3) mm(3) in collagenase-injected joints). Four weeks after injection, the previously formed perforations disappeared, coinciding with a significant rise in osteoblast activity in the subchondral trabecular bone in collagenase-injected joints compared to control joints (mean +/- SEM bone formation rate/bone surface 0.62 +/- 0.13 mu m(3)/mu m(2) per day versus 0.30 +/- 0.03 mu m(3)/mu m(2) per day). Conclusion. The current study is the first to provide quantitative longitudinal data on the dynamic changes in the subchondral bone plate after OA induction. The development of plate perforations may enhance mutual interaction between subchondral trabeculae, bone marrow cells, and the articular cartilage in OA.
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U1 0
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PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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EI 1529-0131
J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
PD SEP 15
PY 2011
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IS 9
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WC Rheumatology
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PT J
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Hamajima, Nobuyuki
Suzuki, Koji
TI The Effect of β-Carotene on Lumbar Osteophyte Formation
SO SPINE
LA English
DT Article
DE antioxidants; beta-carotene; dietary intake of antioxidants; lumbar osteophyte formation; vitamin E
ID bone-mineral density; radiographic knee osteoarthritis; vitamin-a intake; alpha-tocopherol; dietary-intake; serum carotenoids; risk; retinol; association; progression
AB Study Design. Cross-sectional cohort study of elderly people. Objective. The relationships of osteophyte formation on plain lumbar radiographs with serum levels of antioxidants (carotenoids, vitamin A, vitamin E) and other factors were investigated to examine whether antioxidants are involved in lumbar spine degeneration. Summary of Background Data. Antioxidants have inhibitory effects on the onset of many diseases. However, the association of lumbar osteophyte formation with antioxidant levels in the general population has not been investigated. Methods. The subjects were 286 people (103 men and 183 women; mean age = 68 years) who underwent resident health screening. Osteophyte formation on lumbar lateral radiographs (Nathan classification), lumbar lordosis angles, sacral inclination angles, serum levels of antioxidants, triglyceride levels, body mass index, osteoporosis, back muscle strength, history of alcohol intake, and smoking history were studied in these subjects. Results. Lumbar osteophyte formation was detected in 48 subjects (17%). Osteophyte formation was significantly more common in elderly persons, men, and subjects with a history of alcohol intake; and had a significant correlation with sacral inclination angle. The levels of alpha-tocopherol, beta-tocopherol, zeaxanthin/lutein, cryptoxanthin, lycopene, alpha-carotene, and beta-carotene were significantly lower in subjects with osteophytes. Logistic regression analysis adjusted for all factors showed that a higher age (odds ratio [OR] = 1.1, 95% confidence interval [CI] = 1.02-1.16; P = 0.02) and a low beta-carotene level (OR = 6.7, 95% CI = 1.39-32.6; P = 0.02) were risk factors for osteophyte formation. Conclusion. The serum levels of carotenoids and vitamin E were significantly lower in subjects with lumbar osteophyte formation, and a low beta-carotene level was the strongest risk factor for lumbar osteophytes. This is the first evidence of an association between carotenoids and lumbar osteophyte formation. This finding suggests that appropriate dietary intake of antioxidants is important for inhibition of lumbar spine degeneration in a rapidly aging society.
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NR 30
TC 27
Z9 27
U1 0
U2 10
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 0362-2436
EI 1528-1159
J9 SPINE
JI SPINE
PD DEC 15
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BP 2293
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PG 6
WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
GA 863FB
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PT J
AU Quemeneur, AS
Trocello, JM
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AF Quemeneur, Anne-Sophie
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TI Musculoskeletal conditions associated with Wilson's disease
SO BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Wilson's disease; Arthralgia; Osteoarthritis; Bone mineral density; Osteoporosis; Fracture; Chondrocalcinosis
ID hepatolenticular-degeneration; osteoarticular changes; skeletal changes; zinc; osteoarthropathy; polyarthritis; abnormality; arthropathy; efficacy; features
AB Wilson's disease (WD) is a rare disease, defined as an autosomal recessive disorder characterised by release of free copper and dramatic accumulation of intracellular hepatic copper with subsequent hepatic and central nervous system abnormalities. Mutations of the ATP7B gene are responsible for the metabolic dysfunction. Small open studies have reported spinal radiological abnormalities including scoliosis, diffuse bone demineralisation, osteochondritis and occasionally fracture. Prevalence of osteoporosis in young adult patients is debated, ranging from 10%, with normal mean Z-score values, to 43% in adults. Past history of spinal or peripheral fractures might be present in 50% of patients. Articular disorders include arthralgias of large joints, such as knee pain, rare effusions, early onset of radiological features of osteoarthritis and associated osteochondritis of the knee joint. Radiological chondrocalcinosis, an unusual feature in young adults, has to be confirmed. Few patients may develop drug-induced lupus with arthralgias, positive anti-nuclear and anti-histone antibodies, secondary to D-penicillamine, the major copper chelator used in WD. In this orphan disease, small retrospective studies cannot allow ascertaining definite WD-related articular and bone manifestations. However, such clinical and radiological abnormalities are occasionally the first symptoms leading to diagnosis. Physicians should be aware that unexplained joint pain and effusion, or even radiological features of osteoarthritis, of the large joints in adolescents could suggest WD and lead to copper survey. (C) 2011 Published by Elsevier Ltd.
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ZAKRAOUI L, 1986, REV RHUM, V53, P345
NR 41
TC 27
Z9 28
U1 1
U2 11
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1521-6942
EI
J9 BEST PRACT RES CL RH
JI Best Pract. Res. Clin. Rheumatol.
PD OCT 15
PY 2011
VL 25
IS 5
BP 627
EP 636
DI 10.1016/j.berh.2011.10.021
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WC Rheumatology
SC Rheumatology
GA 869TH
UT WOS:000298620600002
PM 22142743
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PT J
AU Vavken, P
Dorotka, R
AF Vavken, Patrick
Dorotka, Ronald

TI Burden of Musculoskeletal Disease and Its Determination by Urbanicity, Socioeconomic Status, Age, and Sex: Results From 14,507 Subjects
SO ARTHRITIS CARE & RESEARCH
LA English
DT Article
ID global perspective; public-health; urbanization; disorders; copcord; city
AB Objective. The availability of reliable estimates of the burden of musculoskeletal disease is of considerable importance for policymakers. Methods. This study uses data from the 14,507 participants of the European Health Interview Survey conducted in Austria in 2006/2007 to calculate estimates of the prevalence of osteoarthritis, spinal conditions, and osteoporosis in a population representative of other European Union or Organisation for Economic Co-operation and Development member states. Urbanicity, socioeconomic status, and age and sex were included as determinants of musculoskeletal disease. Results. The prevalence of arthritis was 18.8% (95% confidence interval [95% CI] 18.2-19.4%), of spinal conditions was 38.4% (95% CI 37.6-39.2%), and of osteoporosis was 6.6% (95% CI 6.3-7.0%). The census data showed strong evidence for an association between urbanicity and arthritis (P = 0.012) and osteoporosis (P < 0.001), but not spinal conditions (P = 0.721). Arthritis and spinal conditions were associated with socioeconomic status (P < 0.001 for all). Osteoporosis showed the same associations with age, income, and education. For arthritis, a combined model showed a substantial attenuation of the effect of urbanicity on arthritis prevalence after adjustment for socioeconomic status. Conclusion. These data suggest that the burden of musculoskeletal disease is determined by both urbanicity and socioeconomic status; however, the effect of urbanicity seems to be attributable to differences in socioeconomic status and demographics across geographic regions.
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CR Unknown -, 2003, BURD MUSC COND START, V0, P0
Unknown -, 2010, E MEDITERR HLTH J, V16, P459
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NR 28
TC 24
Z9 28
U1 0
U2 8
PU WILEY-BLACKWELL
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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J9 ARTHRIT CARE RES
JI Arthritis Care Res.
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WC Rheumatology
SC Rheumatology
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UT WOS:000297217900010
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ER

PT J
AU Valero, C
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TI Relationship of sclerostin and secreted frizzled protein polymorphisms with bone mineral density: an association study with replication in postmenopausal women
SO MENOPAUSE-THE JOURNAL OF THE NORTH AMERICAN MENOPAUSE SOCIETY
LA English
DT Article
DE Osteoporosis; Sclerostin; SOST; FRZB; Association study; Polymorphisms
ID single-nucleotide polymorphisms; whole-genome association; wnt signaling pathway; gene-expression; osteoporosis; osteoarthritis; sost; strength; standardization; annotation
AB Objective: Secreted frizzled-related protein and sclerostin, encoded by FRZB and SOST genes, respectively, are extracellular Wnt inhibitors that tend to decrease bone formation. The purpose of this study was to explore the association of the sets of polymorphisms capturing common variations of these genes with bone mineral density (BMD). Methods: Twelve polymorphic loci of the FRZB gene and 7 of the SOST gene were genotyped in postmenopausal women from two Spanish regions (Cantabria, n = 1043, and Valencia, n = 342). The polymorphisms included

tagging single nucleotide polymorphisms and single nucleotide polymorphisms with possible functional consequences assessed in silico. Results: The rs4666865 polymorphism of the FRZB gene was associated with spine BMD in the Cantabria cohort in the single-locus (P = 0.008) and the haplotypic analysis. However, the results were not replicated in the Valencia cohort. Several polymorphisms at the 5' region of the SOST gene and, particularly, rs851056 were associated with BMD in women from both cohorts (P = 0.002 in Cantabria and P = 0.005 in Valencia). When the results of both cohorts were combined, the mean (SD) BMD difference across rs851056 genotypes was 47 (0.31) mg/cm(2) (P < 0.001). No differences in FRZB and SOST expression in femoral trabecular bone tissue were detected across genotypes. Conclusions: Polymorphisms in the 5' region of SOST gene are associated with BMD in postmenopausal women. They may contribute to explain, in part, the hereditary influence on bone mass.
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NR 40
TC 17
Z9 20
U1 0
U2 0
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA
SN 1072-3714
EI
J9 MENOPAUSE
JI Menopause-J. N. Am. Menopause Soc.
PD JUL 15
PY 2011
VL 18
IS 7

BP 802
EP 807
DI 10.1097/gme.0b013e3182091664
PG 6
WC Obstetrics & Gynecology
SC Obstetrics & Gynecology
GA 781IO
UT WOS:000291924300012
PM 21441835
DA 2026-02-10
ER

PT J
AU Muraki, S
Dennison, E
Jameson, K
Boucher, BJ
Akune, T
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Arden, NK
Javaid, K
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AF Muraki, S.
Dennison, E.
Jameson, K.
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Akune, T.
Yoshimura, N.
Judge, A.
Arden, N. K.
Javaid, K.
Cooper, C.
TI Association of vitamin D status with knee pain and radiographic knee osteoarthritis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Knee osteoarthritis; Gene polymorphism; Epidemiology
ID d-receptor gene; quadriceps weakness; fat distribution; prostate-cancer; serum-levels; cohort; women; polymorphisms; osteoporosis; chondrocytes
AB Objective: The objective of the present study was to explore the association of serum vitamin D concentration and polymorphism in the vitamin D receptor (VDR), with knee pain and radiographic knee osteoarthritis (OA) among men and women

in a large population-based UK cohort study. Methods: Seven hundred and eighty-seven participants in the Hertfordshire Cohort Study (399 men, 388 women; mean age 65.6 +/- 2.7 years) underwent a questionnaire on knee pain and radiographic knee examination. This study examined the association of Fok1, Cdx2 and Apa1 polymorphism in the gene for the VDR and serum 25(OH)D concentration with knee pain and radiographic knee OA by a generalized estimating equations population averaged logistic regression analysis in the Hertfordshire Cohort Study. Results: There were no associations of Fok1, Cdx2 and Apa1 polymorphisms of the VDR with knee OA except for Aa for Apa1 compared with AA [Odds ratio (OR) 0.59, 95% confidence interval (CI) 0.36-0.95, P = 0.031]. While, If for Fok1 (OR 1.60, 95% CI 1.07-2.39, P = 0.022) and AA for Cdx2 polymorphism (OR 2.21, 95% CI 1.07-4.56, P = 0.032) was significantly associated with higher prevalence of knee pain compared with FF for Fok1 and GG for Cdx2, respectively. None of these are statistically significant after adjusting for the three polymorphisms tested. 25(OH)D level was not significantly associated with radiographic knee OA, while, low tertile of 25(OH)D level tended to be associated with knee pain compared with high tertile of 25(OH)D level. Conclusion: The present cross-sectional study using a large-scale population from the Hertfordshire Cohort study indicated that vitamin D may be associated with pain rather than radiographic change, but the evidence for an association between vitamin D genetic variation and pain in knee OA is very weak in the present study. Further replication of our results will be required to elucidate the association of vitamin D and knee OA. (C) 2011 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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TC 72
Z9 87
U1 0
U2 10
PU W B SAUNDERS CO LTD
PI LONDON
PA 32 JAMESTOWN RD, LONDON NW1 7BY, ENGLAND
SN 1063-4584
EI
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD NOV 15
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WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 860QU
UT WOS:000297963600005
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PT J
AU Kauppila, AM
Kyllönen, E
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AF Kauppila, Anna-Maija
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TI Outcomes of primary total knee arthroplasty: the impact of patient-relevant factors on self-reported function and quality of life
SO DISABILITY AND REHABILITATION
LA English
DT Article
DE Knee; osteoarthritis; arthroplasty; quality of life
ID total hip; replacement; osteoarthritis; instrument; surgery; ability; women; womac; men; 15d
AB Purpose. To identify factors associated with functional recovery and outcome 1 year after total knee arthroplasty (TKA). Methods. In the prospective follow-up study, all the patients (n = 75, aged 60-80 years) underwent primary TKA. Assessments were performed preoperatively and 12 months after surgery. The main measures were the Western Ontario and McMaster Universities OA Index (WOMAC) and the 15D. The clinical examination included analyses of comorbidity and a detailed knee examination. Age-standardised population values of the 15D and the Outcome Measures in Rheumatology-Osteoarthritis Research Society International (OMERACT-OARSI) criteria were used as indices of response. Results. Osteoporosis, pain, gender, age and preoperative function of the opposite knee accounted for 29.9% of the variance in the change in the WOMAC function score. A preoperative score of the 15D below the age-standardised population level, pain, higher age and pulmonary disease reduced the possibility to reach the HRQOL level of the general population. Osteoporosis decreased the likelihood of achieving

responder status according to the OMERACT-OARSI criteria. Conclusion. The baseline preoperative score of the 15D strongly associated with the achieved level of HRQOL after TKA. The findings of the present study highlight the multifactorial nature of health status in TKA.
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NR 37
TC 21
Z9 24
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PU TAYLOR & FRANCIS LTD
PI ABINGDON
PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
SN 0963-8288
EI 1464-5165
J9 DISABIL REHABIL
JI Disabil. Rehabil.
PD JUN 15
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WC Rehabilitation
SC Rehabilitation
GA 811AH
UT WOS:000294173200018
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PT J
AU Karsdal, MA
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TI Lessons Learned From the Development of Oral Calcitonin: The First Tablet Formulation of a Protein in Phase III Clinical Trials
SO JOURNAL OF CLINICAL PHARMACOLOGY
LA English
DT Review
DE Oral formulation; calcitonin; clinical trial; bone; cartilage
ID human growth-hormone; alpha-amino-acids; in-vivo activity; salmon-calcitonin; intestinal-absorption; bone turnover; cartilage degradation; alendronate treatment;

postmenopausal women; biochemical markers
AB Oral delivery of proteins has been hampered by an array of difficulties. However, promising novel oral delivery systems have been developed. 5-CNAC, formulated with the peptide salmon calcitonin, is in phase III clinical trials for the treatment of osteoporosis or osteoarthritis and could become the first marketed oral peptide. This article reviews key findings and implications from studies undertaken to date with this oral formulation. Findings include these: (1) the optimal calcitonin tablet dose is 0.8 mg; (2) 0.8 mg of oral calcitonin is rapidly absorbed, reaching maximum concentration in 15 to 30 minutes, and is eliminated from plasma with a short half-life-9 to 15 minutes; (3) the 0.8-mg tablet is more highly absorbed than the marketed nasal formulation, with biomarker levels indicating significantly greater efficacy in suppression of bone resorption; (4) drug absorption is increased with dosing at least 10 minutes before a meal rather than postprandially and also with 50 mL of water; (5) the optimal timing of dosing for osteoporosis therapy is in the evening to mitigate the circadian peak in bone resorption; and (6) the oral formulations of synthetic and recombinant calcitonin have similar pharmacokinetic and pharmacodynamic properties. These key findings may aid researchers in the development of other oral formulations.
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NR 78
TC 79
Z9 83
U1 0
U2 27
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0091-2700
EI 1552-4604
J9 J CLIN PHARMACOL
JI J. Clin. Pharmacol.
PD APR 15
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IS 4
BP 460
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WC Pharmacology & Pharmacy
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PT J
AU Kumarasinghe, DD
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AF Kumarasinghe, Duminda D.
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TI An update on primary hip osteoarthritis including altered Wnt and TGF-β

associated gene expression from the bony component of the disease
SO RHEUMATOLOGY
LA English
DT Review
DE Hip osteoarthritis; Trabecular bone; Osteoblast; Gene; wingless MMTV integration (Wnt); TGF-beta signalling
ID osteoblast-like cells; articular-cartilage; growth-factor; trabecular bone; proximal femur; chemotactic response; subchondral bone; mineral density; cancellous bone; messenger-rna
AB The study of primary hip OA is continuing to redefine what was once considered a stagnant pathology as one of dynamic change, occurring over a long period of time involving the many composite tissue types of the joint including the bone. Examination of the inverse relationships evident between OA and fracture cohorts, including individuals with osteoporosis (OP), indicates an imbalance in formation and resorption in the bony component of both pathologies. This review contains an overview of primary OA followed by an assessment of differential gene expression and altered cellular characteristics identified in the bony compartments of primary hip OA, with a focus on the wingless mouse mammary tumor virus integration (Wnt) and TGF-beta signalling pathways. The studies reviewed here suggest that OA is a systemic disease involving the bone and validate the assessment of molecular changes to further investigate this complex disease.
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NR 69
TC 14
Z9 19
U1 0
U2 15

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PA GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND
SN 1462-0324
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J9 RHEUMATOLOGY
JI RHEUMATOLOGY
PD DEC 15
PY 2011
VL 50
IS 12
BP 2166
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DI 10.1093/rheumatology/ker291
PG 10
WC Rheumatology
SC Rheumatology
GA 852OX
UT WOS:000297368400006
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PT J
AU Melville, DB
Montero-Balaguer, M
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AF Melville, David B.
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Knapik, Ela W.
TI The feelgood mutation in zebrafish dysregulates COPII-dependent secretion of select extracellular matrix proteins in skeletal morphogenesis
SO DISEASE MODELS & MECHANISMS
LA English
DT Article
ID traffic jams; gene; cartilage; membrane; melanosome; expression; binding;

sec23a; differentiation; osteoarthritis
AB Craniofacial and skeletal dysmorphologies account for the majority of birth defects. A number of the disease phenotypes have been attributed to abnormal synthesis, maintenance and composition of extracellular matrix (ECM), yet the molecular and cellular mechanisms causing these ECM defects remain poorly understood. The zebrafish feelgood mutant manifests a severely malformed head skeleton and shortened body length due to defects in the maturation stage of chondrocyte development. In vivo analyses reveal a backlog of type II and type IV collagens in rough endoplasmic reticulum (ER) similar to those found in coat protein II complex (COPII)-deficient cells. The feelgood mutation hinders collagen deposition in the ECM, but trafficking of small cargos and other large ECM proteins such as laminin to the extracellular space is unaffected. We demonstrate that the zebrafish feelgood mutation causes a single amino acid substitution within the DNA-binding domain of transcription factor Creb3l2. We show that Creb3l2 selectively regulates the expression of genes encoding distinct COPII proteins (sec23a, sec23b and sec24d) but find no evidence for its regulation of sec24c expression. Moreover, we did not detect activation of ER stress response genes despite intracellular accumulation of collagen and prominent skeletal defects. Promoter trans-activation assays show that the Creb3l2 feelgood variant is a hypomorphic allele that retains approximately 50% of its transcriptional activity. Transgenic rescue experiments of the feelgood phenotype restore craniofacial development, illustrating that a precise level of Creb3l2 transcriptional activity is essential for skeletogenesis. Our results indicate that Creb3l2 modulates the availability of COPII machinery in a tissue-and cargo-specific manner. These findings could lead to a better understanding of the etiology of human craniofacial and skeletal birth defects as well as adult-onset diseases that are linked to dysregulated ECM deposition, such as arthritis, fibrosis or osteoporosis.
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NR 60
TC 50
Z9 65
U1 0
U2 7
PU COMPANY BIOLOGISTS LTD
PI CAMBRIDGE
PA BIDDER BUILDING, STATION RD, HISTON, CAMBRIDGE CB24 9LF, ENGLAND
SN 1754-8403
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J9 DIS MODEL MECH
JI Dis. Model. Mech.
PD NOV 15
PY 2011
VL 4
IS 6
BP 763

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DI 10.1242/dmm.007625
PG 14
WC Cell Biology; Medicine, Research & Experimental; Pathology
SC Cell Biology; Research & Experimental Medicine; Pathology
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PT J
AU Emshoff, R
Moriggl, A
Rudisch, A
Laimer, K
Neunteufel, N
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AF Emshoff, Ruediger
Moriggl, Alexander
Rudisch, Ansgar
Laimer, Klaus
Neunteufel, Nikolaus
Crismani, Adriano
TI Are temporomandibular joint disk displacements without reduction and osteoarthrosis important determinants of mandibular backward positioning and clockwise rotation?
SO ORAL SURGERY ORAL MEDICINE ORAL PATHOLOGY ORAL RADIOLOGY AND ENDODONTOLOGY
LA English
DT Article
ID lateral cephalometric analysis; resonance-imaging findings; internal derangement; asymptomatic volunteers; symptomatic patients; dental morphology; skeletal; women; prevalence; accuracy
AB Objective. The aim of this study was to estimate whether, in patients with temporomandibular joint (TMJ) arthralgia, the magnetic resonanace imaging (MRI) findings of bilateral TMJ disk displacement without reduction (DDwoR) and/or osteoarthrosis (OA) are determinants of mandibular backward positioning and/or clockwise rotation. Study design. Bilateral MRI of the TMJ was performed in 50 consecutive TMJ arthralgia patients to identify individuals with bilateral TMJ DDwoR and/or OA. Linear and angular cephalometric measurements were taken to apply selected criteria of mandibular backward positioning (FH to Na-Pog < 84 degrees, Na-A-Pog > 5 degrees, and SNB < 75 degrees) and clockwise rotation (FH to OP > 13 degrees, MP to FH > 35 degrees, and S-Gn to FH > 64 degrees).

Logistic regression analysis was used to estimate the association between selected MRI and cephalometric parameters. Results. In the age-and gender-adjusted analyses, significant increases in risk of mandibular backward positioning and clockwise rotation occurred with bilateral DDwoR and OA (9.5:1; P = .040). Conclusion. In patients with TMJ arthralgia the MRI parameters of DDwoR and OA seem to be important determinants of mandibular backward positioning and clockwise rotation. (Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2011;111:435-441)
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NR 28
TC 13
Z9 18
U1 0
U2 1
PU MOSBY-ELSEVIER
PI NEW YORK
PA 360 PARK AVENUE SOUTH, NEW YORK, NY 10010-1710 USA
SN 1079-2104
EI 1528-395X
J9 ORAL SURG ORAL MED O
JI Oral Surg. Oral Med. Oral Pathol. Oral Radiol. Endod.
PD APR 15
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BP 435
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WC Dentistry, Oral Surgery & Medicine
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PT J
AU Okano, K
Ito, M
Aoyagi, K
Motokawa, S
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AF Okano, K.
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TI Bone mineral densities in patients with developmental dysplasia of the hip
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Bone mineral density (BMD); Developmental dysplasia of the hip; Dual-energy X-ray absorptiometry (DXA); Osteoarthritis of the hip; Peripheral quantitative computed tomography (pQCT)
ID acetabular dysplasia; osteoarthritis; osteoporosis; age; association; joint
AB Bone mineral density (BMD) of the lumbar spine, ultradistal radius, and calcaneus were significantly higher in the developmental dysplasia of the hip (DDH) patients than in the controls. Therefore, our data suggest that BMDs at different skeletal sites are greater in patients with DDH than in healthy women. DDH has been acknowledged as a potentially preosteoarthritic condition that results in the development of hip osteoarthritis. Patients with DDH have been reported to have abnormal morphology of the pelvis and spine. Additional research, including that of bone quality, needs to be conducted to elucidate the pathogenetic mechanism of this disease. We therefore sought to determine whether BMD differs between healthy women and women with DDH. We measured BMD in 40 women who were scheduled to undergo pelvic osteotomy for DDH (average age, 45.3 years) and in 31 healthy women used as age-matched controls (average age, 47.5 years). BMDs of the lumbar spine, radius, and calcaneus were measured. BMDs of the lumbar spine, ultradistal radius, and calcaneus were significantly higher in the DDH patients than in the controls. Therefore, our data suggest that BMDs at different skeletal sites are greater in patients with DDH than in healthy women.
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AU Guggenbuhl, P
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TI Haemochromatosis: The bone and the joint
SO BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Haemochromatosis; Iron; HFE gene; Hepcidin; Osteoporosis; Chondrocalcinosis; Osteoarthritis; CPPD; Osteoporosis; Fracture
ID transferrin-bound iron; antimicrobial peptide hepcidin; parathyroid-hormone 44-68; hereditary hemochromatosis; genetic hemochromatosis; idiopathic

hemochromatosis; mineral density; risk-factor; overload; expression
AB Genetic haemochromatosis is a hereditary disease characterised by tissue iron overload. In Caucasians it is most often due to homozygous C282Y HFE gene mutation, but other genes may be involved. Without treatment by venesections, patients can develop life-threatening visceral damage such as liver cirrhosis and carcinoma, diabetes or heart failure. This treatment has been remarkably successful in preventing these complications, but patients survive with other symptoms of the disease susceptible to impair, sometimes seriously, their quality of life. This is the case of arthropathy and osteoporosis complicating haemochromatosis. In this chapter, focus has been placed on the rheumatological complications of genetic haemochromatosis. (C) 2011 Published by Elsevier Ltd.
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Wheeler, M.
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Zhang, W.
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TI Large-scale meta-analysis of interleukin-1 beta and interleukin-1 receptor antagonist polymorphisms on risk of radiographic hip and knee osteoarthritis and severity of knee osteoarthritis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; IL-1; Interleukin; Genetic; Association; Polymorphism
ID genome-wide association; bone-mineral density; meulenbelt et-al; gene-cluster; population; susceptibility; heterogeneity; osteoporosis; chingford; article
AB Objective: To clarify the role of common genetic variation in the Interleukin-1 beta (IL1B) and Interleukin-1R antagonist (IL1RN) genes on risk of knee and hip osteoarthritis (OA) and severity of knee OA by means of large-scale meta-analyses. Methods: We searched PubMed for articles assessing the role of IL1B and IL1RN

polymorphisms/haplotypes on the risk of hip and/or knee OA. Novel data were included from eight unpublished studies. Meta-analyses were performed using fixed- and random-effects models with a total of 3595 hip OA and 5013 knee OA cases, and 6559 and 9132 controls respectively. The role of ILRN haplotypes on radiographic severity of knee OA was tested in 1918 cases with Kellgren-Lawrence (K/L) 1 or 2 compared to 199 cases with K/L 3 or 4. Results: The meta-analysis of six published studies retrieved from the literature search and eight unpublished studies showed no evidence of association between common genetic variation in the IL1B or IL1RN genes and risk of hip OA or knee OA (P > 0.05 for rs16944, rs1143634, rs419598 and haplotype C-G-C (rs1143634, rs16944 and rs419598) previously implicated in risk of hip OA). The C-T-A haplotype formed by rs419598, rs315952 and rs9005, previously implicated in radiographic severity of knee OA, was associated with reduced severity of knee OA (odds ratio (OR) = 0.71 95% CI 0.56-0.91; P = 0.006, I(2) = 74%), and achieved borderline statistical significance in a random-effects model (OR = 0.61 95% CI 0.35-1.06 P=0.08). Conclusion: Common genetic variation in the Interleukin-1 region is not associated with prevalence of hip or knee OA but our data suggest that IL1RN might have a role in severity of knee OA. (C) 2010 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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PA 32 JAMESTOWN RD, LONDON NW1 7BY, ENGLAND
SN 1063-4584
EI
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD MAR 15
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IS 3
BP 265
EP 271
DI 10.1016/j.joca.2010.12.003
PG 7
WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 736XC
UT WOS:000288527300003
PM 21146623
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ER

PT J
AU Spinarelli, A
Petrera, M
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Pesce, V
Patella, V
AF Spinarelli, Antonio
Petrera, Massimo
Vicenti, Giovanni
Pesce, Vito
Patella, Vittorio
TI Total knee arthroplasty in elderly osteoporotic patients
SO AGING CLINICAL AND EXPERIMENTAL RESEARCH
LA English
DT Article
DE Osteoporosis; TKA
ID follow-up; prosthesis; replacement; 5-year
AB Often in daily practice the choice of a prosthesis does not rise out of considerations about literature evidences, but it seems to be related to the personal experience and "surgical philosophy" of surgeon. The choice of prosthesis in total joint replacement is usually justified by biological and mechanical parameters that the surgeon considers before surgery. Osteoporosis is a disease characterized by a reduced bone mass and a degeneration of the bone tissue; it leads to bone fragility, so to a higher risk of fractures. Bone resistance, as all the changes in the microarchitecture of the bone tissue, is linked to bone density. Because of the bone density variation and/or the changes in the bone micro-architecture, as the bone strength decreases, the risk of fractures increases. It is important to understand all the factors taking part in both normal and abnormal bone remodelling. Osteoporosis does not imply a concrete bone loss, but a change of the bone micro-architecture itself. In these cases the choice of the patient and implant design are very important. In the period between March 1997-July 2002,

we implanted 100 consecutive TKA (total knee arthroplasty) Genesis II in 97 subjects (79 female); mean age was 77.1 years old. All TKA were performed because of primary osteoarthritis of the knee. All patients had complete pain relief and excellent knee score. The surgical and medical complications were in accordance with the published literature. We must consider all existing medical conditions, the state of the knee and local needs of the elderly patient. Thus, within these limits, the total knee can improve the ability of patients to manage the activities of daily living and improve their quality of life. (Aging Clin Exp Res 2011; 23 (Suppl. to No. 2): 78-80) (C) 2011, Editrice Kurtis
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2003, 1900, V921, V0, P0
NR 10
TC 8
Z9 11
U1 0
U2 2
PU EDITRICE KURTIS S R L
PI MILAN
PA VIA LUIGI ZOJA 30, 20153 MILAN, ITALY
SN 1594-0667
EI
J9 AGING CLIN EXP RES
JI Aging Clin. Exp. Res.
PD APR 15
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VL 23
IS
BP 78
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DI
PG 3
WC Geriatrics & Gerontology
SC Geriatrics & Gerontology
GA 817DQ
UT WOS:000294651900032
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ER

PT J
AU Sabariego, C
Brach, M
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Brach, Mirjam
Stucki, Gerold
TI DETERMINANTS OF MAJOR DIRECT MEDICAL COST CATEGORIES AMONG PATIENTS WITH OSTEOPOROSIS, OSTEOARTHRITIS, BACK PAIN OR FIBROMYALGIA UNDERGOING OUTPATIENT REHABILITATION
SO JOURNAL OF REHABILITATION MEDICINE
LA English
DT Article
DE healthcare costs; direct service costs; musculoskeletal diseases
ID health-care costs; quality-of-life; rheumatoid-arthritis; predictors; burden; prevalence; instrument; illness; disease; women
AB Objective: To identify determinants of direct medical costs among patients with osteoporosis, osteoarthritis, back pain or fibromyalgia. Design: Cross-sectional study. Participants: Convenience sample of 410 patients undergoing outpatient rehabilitation. Methods: Resource use was assessed with a self-report retrospective questionnaire, and direct medical costs were calculated considering outpatient physician services, non-physician health services, medication and inpatient treatment. Non-parametric bootstrap techniques with 1,000 replications were used to estimate means of costs and their 95% confidence intervals (CI). To identify determinants of costs, a generalized linear model with log link function and gamma distribution, as well as a multivariate logistic regression analysis, were performed. Results: Medical indication ($p < 0.001$), age ($p=0.034$) and the scales of the Short Form-36 (SF-36) role physical ($p<0.001$), physical functioning ($p=0.036$), social functioning ($p=0.047$) and vitality ($p=0.005$) were significant predictors of direct medical costs, whereas the medical indication fibromyalgia (odds ratio (OR)=5.74, 95% CI 2.051-16.066, $p=0.001$), the Short-Form 36 (SF-36) scale role physical (OR=0.988, 95% CI 0.980-0.996, $p = 0.002$) and comorbidity (OR=1.161,95% CI 1.043-1.292, $p = 0.006$) were statistically significant determinants of high direct medical costs beyond the median. Conclusion: Our work confirms

known predictors of direct medical costs and broadens the understanding of determinants of direct medical costs beyond the median.
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CR Unknown -, 2001, INTERNATIONAL CLASSIFICATION OF FUNCTIONING, V0, P0
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NR 31
TC 21
Z9 23
U1 0
U2 4
PU FOUNDATION REHABILITATION INFORMATION
PI UPPSALA
PA TRADGARDSGATAN 14, UPPSALA, SE-753 09, SWEDEN
SN 1650-1977
EI 1651-2081
J9 J REHABIL MED
JI J. Rehabil. Med.
PD JUL 15
PY 2011
VL 43
IS 8
BP 703
EP 708
DI 10.2340/16501977-0845
PG 6
WC Rehabilitation; Sport Sciences
SC Rehabilitation; Sport Sciences
GA 799VL
UT WOS:000293314100007
PM 21732004
DA 2026-02-10
ER

PT J
AU D'Amelio, P
Roato, I
D'Amico, L
Veneziano, L
Suman, E
Sassi, F
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Ferracini, R
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Castoldi, F
Pescarmona, GP
Isaia, GC
AF D'Amelio, P.
Roato, I.
D'Amico, L.
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Suman, E.
Sassi, F.
Bisignano, G.
Ferracini, R.
Gargiulo, G.
Castoldi, F.
Pescarmona, G. P.
Isaia, G. C.
TI Bone and bone marrow pro-osteoclastogenic cytokines are up-regulated in osteoporosis fragility fractures
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE DKK-1; M-CSF; Osteoporosis RANKL/OPG; SOST; TGF beta
ID colony-stimulating factor; rheumatoid-arthritis; hypovitaminosis-d; mineral density; expression; metastases; dickkopf-1; mechanism; women
AB This study evaluates cytokines production in bone and bone marrow of patients with an osteoporotic fracture or with osteoarthritis by real time PCR, Western blot and immunohistochemistry. We demonstrate that the cytokine pattern is shifted towards osteoclast activation and osteoblast inhibition in patients with osteoporotic fractures. Introduction Fragility fractures are the resultant of low bone mass and poor bone architecture typical of osteoporosis. Cytokines involved in the control of bone cell maturation and function are produced by both bone itself and bone marrow cells, but the roles of these two sources in its control and the amounts they produce are not clear. This study compares their production in patients with an osteoporotic fracture and those with osteoarthritis. Methods We evaluated 52 femoral heads from women subjected to hip-joint replacement surgery for femoral neck fractures due to low-energy trauma (37), or for osteoarthritis (15). Total RNA was extracted from both bone and bone marrow, and quantitative PCR was used to identify the receptor activator of nuclear factor kB Ligand (RANKL), osteoprotegerin (OPG), macrophage colony stimulating factor (M-CSF), transforming growth factor beta (TGF beta), Dickoppf-1 (DKK-1) and sclerostin (SOST) expression. Immunohistochemistry and Western blot were performed in order to quantify and localize in bone and bone marrow the cytokines. Results We found an increase of RANKL/OPG ratio, M-CSF, SOST and

DKK-1 in fractured patients, whereas TGF beta was increased in osteoarthritic bone. Bone marrow produced greater amounts of RANKL, M-CSF and TGF beta compared to bone, whereas the production of DKK- 1 and SOST was higher in bone. Conclusions We show that bone marrow cells produced the greater amount of pro-osteoclastogenic cytokines, whereas bone cells produced higher amount of osteoblast inhibitors in patients with fragility fracture, thus the cytokine pattern is shifted towards osteoclast activation and osteoblast inhibition in these patients.
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NR 37
TC 36
Z9 38
U1 0
U2 7
PU SPRINGER LONDON LTD
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD NOV 15
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IS 11
BP 2869
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DI 10.1007/s00198-010-1496-7
PG 9
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 850NH
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PM 21116815
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PT J
AU Burkhart, KJ
Nijs, S
Mattyasovszky, SG
Wouters, R
Gruszka, D
Nowak, TE
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Müller, LP
AF Burkhart, Klaus J.
Nijs, Stefaan
Mattyasovszky, Stefan G.
Wouters, Ruben
Gruszka, Dominik
Nowak, Tobias E.
Rommens, Pol M.
Mueller, Lars P.
TI Distal Humerus Hemiarthroplasty of the Elbow for Comminuted Distal Humeral Fractures in the Elderly Patient
SO JOURNAL OF TRAUMA-INJURY INFECTION AND CRITICAL CARE
LA English
DT Article
DE Distal humerus fracture; Osteoporosis; Arthroplasty; Hemiarthroplasty
ID internal-fixation; open reduction; intraarticular fractures; rheumatoid-arthritis; complex fractures; arthroplasty; replacement; prosthesis; reconstruction

AB Background: The purpose of our study was to evaluate the objective and subjective outcomes, as well as the radiographic results after elbow hemiarthroplasty (HA) for comminuted distal humerus fractures in elderly patients. Methods: Ten female patients with a mean age of 75.2 years were treated with elbow HA either for osteoporotic, comminuted distal humerus fractures (n = 8) or for early failed osteosynthesis of distal humerus fractures (n = 2). The mean follow-up period was 12.1 months. All patients were examined and evaluated using the Mayo Elbow Performance Score and the Disabilities of the Arm, Shoulder, and Hand score. Radiographic postoperative outcomes were assessed performing anteroposterior and lateral radiographs of the injured elbow. Results: According to the Mayo Elbow Performance Score, nine patients achieved "good" to "excellent results" and only one patient revealed a "fair" clinical outcome. The mean Disabilities of the Arm, Shoulder, and Hand score was 11.5 (range, 0-30). The flexion of the affected elbow was 124.5 degrees (range, 95-140 degrees), the extension deficit was 17.5 degrees (range, 5-30 degrees), the pronation was 80.5 degrees (range, 60-90 degrees), and the supination was 79.5 degrees (range, 50-90 degrees). The following postoperative complications were seen: one triceps weakness, one transient ulnar nerve irritation, one superficial wound infection, and two heterotopic ossifications. None of the patients required explantation of the prosthesis. There was no evidence of loosening, radiolucency, or proximal bone resorption, whereas one patient developed progressive osteoarthritis of the proximal ulnar and radial articulation. Conclusions: Elderly patients treated with elbow HA revealed good to excellent short-term clinical outcomes. A high rate of complications occurred but most complications found were minor and reoperation rate was low. Our results must be regarded as a report on our first experience with HA. As cartilage wear is just a question of time especially in active patients, we cautiously recommend HA only for elderly and multimorbid low-demand patients.
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Wong AS, 2009, J HAND SURG-AM, V34A, P176, DOI 10.1016/j.jhsa.2008.10.023
NR 25
TC 54
Z9 73
U1 0
U2 4
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA
SN 0022-5282
EI
J9 J TRAUMA

JI J. Trauma-Injury Infect. Crit. Care
PD SEP 15
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VL 71
IS 3
BP 635
EP 642
DI 10.1097/TA.0b013e318216936e
PG 8
WC Critical Care Medicine; Surgery
SC General & Internal Medicine; Surgery
GA 818MX
UT WOS:000294756900027
PM 21768901
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ER

PT J
AU Cherubino, P
Ratti, C
Fagetti, A
Binda, T
AF Cherubino, Paolo
Ratti, Chiara
Fagetti, Alessandro
Binda, Tommaso
TI Total hip arthroplasty and bone fragility
SO AGING CLINICAL AND EXPERIMENTAL RESEARCH
LA English
DT Article
DE Osteoporosis; stem fixation; total hip arthroplasty
AB The number of elderly people is steadily increasing: in the United States it will increase from 12.9% to 20% in 2030 with respect to the total population. Italy, with UK, Denmark and Sweden are the countries with the largest number of octogenarians (about 4% of the population) and it is estimated that this rate will increase by 300% over the next 50 years. The number of people affected by osteoarthritis will increase significantly and therefore the number of total hip arthroplasties will progressively increase. The success of an implant depends firstly by a flawless surgical technique, a correct and stable implant fixation and an optimal preoperative planning that should consider the bone quality of the patient, in order to choose a proper implant design. Different approaches could be followed to achieve adequate fixation: northern Europe surgeons prefer the cemented implant, instead American orthopedics generally use systems that allow a direct biological osteointegration. Elderly patients often present with multiple

local and general problems that could affect significantly the normal course of a prosthetic surgery procedure and its results: they have bone tissue changes that lead to increased bone fragility and, consequently, difficulties to obtain primary stability. Osteoporotic bone is characterized by reduction of bone mass, decrease of cancellous bone trabeculae and by increased porosity of cortical bone. The bone fragility implies a greater risk of iatrogenic intraoperative fractures. Furthermore, difficulties linked to bone stock deficiencies become even more significant in revision surgery, where cortical bone thinning is associated with enlargement of the isthmus thus making more difficult to obtain distal fixation of prosthetic stems. At the moment, the role played by the drugs used for the treatment of osteoporosis during implant osteointegration is still not clearly understood and is still under investigation. (Aging Clin Exp Res 2011; 23 (Suppl. to No. 2): 76-77) (C) 2011, Editrice Kurtis
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TI Alendronate and raloxifene affect the osteoprotegerin/RANKL system in human osteoblast primary cultures from patients with osteoporosis and osteoarthritis
SO EUROPEAN JOURNAL OF PHARMACOLOGY
LA English
DT Article
DE Human osteoblast culture; Osteoporosis; Osteoprotegerin/RANKL; Alendronate and raloxifene
ID estrogen-receptor modulators; marrow stromal cells; in-vitro; zoledronic acid; bone-resorption; postmenopausal osteoporosis; bisphosphonate therapy; regulates osteoclast; gene-expression; mechanisms
AB The osteoprotegerin/RANKL system modulates bone remodelling. Alendronate and raloxifene are anti-resorptive drugs effective in osteoporotic disease. They reduce fracture risk, the activity of bone remodelling and increase bone mineral density. It is not known if they can exert a direct effect in osteoblasts via the osteoprotegerin/RANKL system. Our objective was to assess the effects of alendronate and raloxifene among osteoprotegerin production (ELISA), as well as osteoprotegerin and RANKL expression (RT-PCR), in primary cultures of human osteoblasts (hOB). We compared 17 osteoporotic patients with 16 patients affected by osteoarthritis in basal conditions and after incubation with alendronate (10(-6) M), raloxifene (10(-7) M) or 17-beta estradiol (10(-7) M) for 24 h. The statistical analysis was determined by ANOVA. Osteoprotegerin protein secretion in hOB cultures was higher in patients with osteoporosis than osteoarthritis. Osteoprotegerin secretion levels remained unchanged after each treatment. The

osteoporotic group was more sensitive to treatment. Both raloxifene (34%) and estradiol (37%) increased osteoprotegerin mRNA expression, and alendronate (118%) and raloxifene (61%) increased the mRNA expression of RANKL. The RANKL/osteoprotegerin mRNA ratio was higher in osteoporotic than osteoarthritic patients. In the osteoporotic group, the RANKL/osteoprotegerin mRNA ratio was significantly increased after treatment with alendronate (112%) and after treatment with raloxifene (60%). These results indicate a direct action of alendronate and raloxifene on hOB cultures from osteoporotic patients, and the cited drugs are able to modulate the osteoprotegerin/RANKL system. (C) 2010 Elsevier B.V. All rights reserved.
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TI Primary total knee arthroplasty in the management of epiphyseal fracture around the knee
SO ORTHOPAEDICS & TRAUMATOLOGY-SURGERY & RESEARCH
LA English
DT Article
DE TKA; Fracture; Knee; Osteoporosis; Elderly
ID distal femoral fractures; total elbow arthroplasty; humeral fractures; tibial plateau; femur
AB Introduction: Over the past few years the use of arthroplasty was broadened to treating complex epiphyseal fractures at the shoulder and elbow joints. Similar trends to treat this type of fractures at the knee are less documented. Based on a multicenter retrospective series study, the aims of this work is to evaluate the short term clinical results of total knee prostheses in the management of comminuted

epiphyseal fractures around the knee, to identify the technical issues and fine tune the indications. Material and methods: Following the initiative of the French Hip and Knee Society (SFHG) and the Traumatology Study Group (GETRAUM), 26 charts from eight different centers in France were included in this multicenter retrospective series. Inclusion criteria were: primary total knee arthroplasty (TKA) in the management of complex articular fractures involving the proximal end of the tibia or distal end of the femur. Surgical features were identified and complications were analyzed. The assessment protocol at last follow-up was standardized and included patient demographic data, analysis of the Parker and IKS scores. Results: During the immediate postoperative period, six patients (23%) reported a general complication and four patients (15%) a local arthroplasty-related complication. At last follow-up (mean 16.2 months), the overall final Parker score was 6.3 (a mean decrease of 1.7) and the mean IKS knee score was 82 points for a mean function score of 54 points. Discussion: Primary TKA is a suitable management option for complex fractures in autonomous elderly patients suffering from knee osteoarthritis. The key technical details of this procedure should be respected and meticulously planned to achieve optimal results and limit the risk of complications. This risk in these acute complex fractures remains higher than after conventional TKA but comparable to that observed after TKA for post-traumatic arthritis. Level of evidence: IV; retrospective cohort study. (C) 2011 Published by Elsevier Masson SAS.
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TI The role of synovial fluid markers of catabolism and anabolism in osteoarthritis, rheumatoid arthritis and asymptomatic organ donors
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Article
ID leukemia inhibitory factor; articular chondrocytes; osteogenic protein-1; il-6 receptor; serum; cytokines; interleukin-1; expression; knee; osteocalcin
AB Introduction: The purpose of this study was to correlate the level of anabolic and catabolic biomarkers in synovial fluid (SF) from patients with rheumatoid arthritis (RA), patients with osteoarthritis (OA) and asymptomatic organ donors. Methods: SF was collected from the knees of 45 OA, 22 RA patients and 20 asymptomatic organ donors. Eight biomarkers were selected and analyzed by using an enzyme-linked immunosorbent assay: interleukin (IL)-1, IL-6, IL-8 and IL-11; leukemia-inhibitory factor (LIF); cartilage oligomeric protein (COMP); osteocalcin; and osteogenic protein 1 (OP-1). Data are expressed as medians (interquartile ranges). The effects of sex and disease activity were assessed on the basis of the Western Ontario and McMaster Universities index score for patients with OA and on the basis of white blood cell count, erythrocyte sedimentation rate and C-reactive protein level for patients with RA. Results: The mean ages (+/- SD) of the patients were as follows: 53 +/- 9 years for patients with OA, 54 +/- 11 years for patients with RA and 52 +/- 7 years for asymptomatic organ donors. No effect of participants' sex was identified. In the SF of patients with RA, four of five cytokines were higher than those in the SF of patients with OA and those of asymptomatic organ donors. The most significant differences were found for IL-6 and IL-8, where IL-6 concentration in SF of patients with RA was almost threefold higher than that in patients with OA and fourfold higher than that in asymptomatic donor controls: 354.7 pg/ml (1,851.6) vs. 119.4 pg/ml (193.2) vs. 86.97 pg/ml (82.0) ($P < 0.05$ and $P < 0.05$, respectively). IL-8 concentrations were higher in SF of patients with RA than that in patients with OA as well as that in asymptomatic donor controls: 583.6 pg/ml (1,086.4) vs. 429 pg/ml (87.3) vs. 451 pg/ml (170.1) ($P < 0.05$ and $P < 0.05$, respectively). No differences were found for IL-11 in the SF of patients with RA and that of patients with OA, while a 1.4-fold difference was detected in the SF of patients with OA and that of asymptomatic donor controls: 296.2 pg/ml (257.2) vs. 211.6 pg/ml (40.8) ($P < 0.05$). IL-1 concentrations were the highest in the SF of RA patients (9.26 pg/ml (11.1)); in the SF of asymptomatic donors, it was significantly higher than that in patients with OA (9.083 pg/ml (1.6) vs. 7.76 pg/ml (2.6); P <

0.05). Conversely, asymptomatic donor control samples had the highest LIF concentrations: 228.5 pg/ml (131.6) vs. 128.4 pg/ml (222.7) in the SF of patients with RA vs. 107.5 pg/ml (136.9) in the SF of patients with OA ($P < 0.05$). OP-1 concentrations were twofold higher in the SF of patients with RA than those in patients with OA and threefold higher than those in asymptomatic donor control samples (167.1 ng/ml (194.8) vs. 81.79 ng/ml (116.0) vs. 54.49 ng/ml (29.3), respectively; $P < 0.05$). The differences in COMP and osteocalcin were indistinguishable between the groups, as were the differences between active and inactive OA and RA. Conclusions: Activation of selected biomarkers corresponds to the mechanisms that drive each disease. IL-11, LIF and OP-1 may be viewed as a cluster of biomarkers significant for OA; while profiling of IL-1, IL-6, IL-8, LIF and OP-1 may be more significant in RA. Larger, better-defined patient cohorts are necessary to develop a biomarker algorithm for prognostic use.
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J9 ARTHRITIS RES THER
JI Arthritis Res. Ther.
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WC Rheumatology
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PT J
AU Bellido, M
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AF Bellido, M.
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TI Improving subchondral bone integrity reduces progression of cartilage damage in experimental osteoarthritis preceded by osteoporosis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Osteoporosis; Cartilage damage; Subchondral bone impairment; PTH [1-34]
ID cruciate ligament transection; kappa-b ligand; knee osteoarthritis; articular-cartilage; parathyroid-hormone; mineral density; treating osteoarthritis; antiinflammatory drugs; estrogen deficiency; receptor activator
AB Purpose: Impairment of subchondral bone density and quality aggravates cartilage damage in osteoarthritis (OA). Accordingly, we assessed whether improving microstructure and quality at subchondral bone by the bone-forming agent parathyroid hormone (PTH) [1-34] prevent cartilage damage progression in a rabbit model of OA preceded by osteoporosis (OP). Methods: OP was induced in 20 female rabbits. At week 7, these rabbits underwent knee surgery to induce OA and, at week 12, they started either saline vehicle (n = 10) or PTH (n = 10) for 10 weeks. Ten healthy animals were used as controls. At week 22, microstructure was assessed by micro-computed tomography and bone remodelling by protein expression of alkaline phosphatase (ALP), metalloproteinase-9 (MMP9), osteoprotegerin (OPG) and receptor activator of nuclear factor-kappa B ligand (RANKL) at subchondral bone. Cartilage damage was evaluated using Mankin score. Results: PTH reversed the decrease of bone area/tissue area, trabecular thickness, plate thickness, polar moment of inertia, ALP expression and OPG/RANKL ratio, as well as counteracted the increase of fractal dimension and MMP9 expression at subchondral bone of osteoarthritis preceded by osteoporosis (OPOA) rabbits compared to vehicle administration ($P < 0.05$). Likewise, PTH decreased cartilage damage severity in OPOA rabbits. Good correlations were observed between subchondral bone structure or remodelling parameters, and cartilage Mankin score. Conclusions: Improvement of microstructural and remodelling parameters at subchondral bone by PTH [1-34] contributed to prevent cartilage damage progression in rabbits with early OPOA. These findings support the role of subchondral bone in OA. Further studies are warranted to establish the place of bone-forming agents as potential treatment in OA. (C) 2011 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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10.1007/s11517-006-0152-z
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
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PT J
AU Boyde, A
AF Boyde, A.
TI STAINING PLASTIC BLOCKS WITH TRIIODIDE TO IMAGE CELLS AND SOFT TISSUES IN BACKSCATTERED ELECTRON SEM OF SKELETAL AND DENTAL TISSUES
SO EUROPEAN CELLS & MATERIALS
LA English
DT Article
DE Bone; cartilage; osteoid; histopathology; implant interface
ID 3rd metacarpal bone; micro-ct; morphology; density
AB Backscattered electron scanning electron microscopy (BSE SEM) is an invaluable

method for studying the histology of the hard, mineralised components of poly-methyl methacrylate (PMMA) or other resin embedded skeletal and dental tissues. Intact tissues are studied in micro-milled or polished block faces with an electron-optical section thickness of the order of a half to one micron and with the area of the section as big as a whole - large or small - bone organ. However, BSE SEM does not give information concerning the distribution of uncalcified, 'soft', cellular and extracellular matrix components. This can be obtained by confocal microscopy of the same block and the two sorts of images merged but the blocks have to be studied in two microscope systems. The present work shows a new, simple and economic approach to visualising both components by using the triiodide ion in Lugol's iodine solution to stain the block surface prior to the application of any conductive coating - and the latter can be omitted if charging is suppressed by use of poor vacuum conditions in the SEM sample chamber. The method permits the use of archival tissue, and it will be valuable in studies of both normal growth and development and pathological changes in bones and joints, including osteoporosis and osteoarthritis, and tissue adaptation to implants.
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PT J
AU Pentlow, AK
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TI Subsidence of collarless uncemented femoral stems in total hips replacements performed for trauma
SO INJURY-INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED
LA English
DT Article
DE Total hip replacement; Fractured neck of femur; Femoral stem subsidence
ID displaced intracapsular fracture; internal-fixation; controlled-trial; neck fractures; subcapital fractures; titanium-alloy; long-term; arthroplasty; component; hemiarthroplasty
AB Introduction: Collarless, uncemented, femoral stems give excellent results in elective hip replacements but few studies look at outcomes in trauma patients. The presence of osteoporosis and subsequent widened femoral canal may compromise the mechanical stability of uncemented femoral stems resulting in early subsidence. The aim of this study was to assess whether early subsidence occurred when collarless uncemented stems were used to treat trauma patients. Materials and methods: Post-operative radiographs of 46 patients, mean age 71, who underwent an uncemented, collarless, total hip replacement for trauma, were reviewed. The difference in distance from the calcar to the prosthesis tip between the immediate post operative radiograph and the subsequent follow-up radiograph was calculated and adjusted for magnification. The same procedure was performed on 36 age-matched patients, who underwent elective hip replacements for osteoarthritis. Hospital notes were reviewed to assess for complications and DEXA scans reviewed for trauma patients where available. Results: The mean femoral stem subsidence was significantly greater in the fracture cohort than in elective patients ($p = 0.001$) with mean subsidence of 4.27 mm (range 0.02-22.05 mm) and 1.57 mm (range 0-5.5 mm), respectively. In the fracture cohort there were 4 revisions within 6 months of surgery, 1 for infection and 3 for femoral stem subsidence leading to dislocation. There were no revisions in the elective cohort. Discussion and conclusions: This study showed that collarless uncemented stems subsided significantly more when performed for fractures and had a high early revision rate. We recommend that uncemented collarless should not be used in trauma patients requiring total hip replacement. (c) 2011 Elsevier Ltd. All rights reserved.
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SC General & Internal Medicine; Emergency Medicine; Orthopedics; Surgery
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PT J
AU Ermakov, S
Trofimov, S
Malkin, I
Livshits, G
AF Ermakov, S.
Trofimov, S.
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Livshits, G.
TI A significant association exists between receptor tyrosine kinase-like orphan receptor 2 gene variants and the OPG/RANKL ratio in human plasma
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Association; Circulating levels; Hand osteoarthritis; ROR2; SNP
ID kappa-b ligand; healthy-human population; brachydactyly type-b; circulating

osteoprotegerin; matrix metalloproteinases; hand osteoarthritis;
robinow-syndrome; bone; ror2; wnt
AB There is a paucity of studies investigating association between ROR2 gene variants and osteoporosis and osteoarthritis-related phenotypes. The published literature suggests that osteoprotegerin (OPG) and receptor activator of nuclear factor-kB ligand (RANKL) are essential for bone metabolism and correlate with osteoarthritis manifestation and progression. The present study provides evidence of the significant association between ROR2 variants and the OPG/RANKL ratio in human plasma. The present results also suggest significant association between ROR2 polymorphisms and severity of radiographic hand osteoarthritis. Despite the importance of the ROR-2 in skeletal physiology, there is a paucity of studies investigating the potential association of ROR2 gene variants with phenotypes relevant to osteoporosis and osteoarthritis. On the other hand, there is a considerable body of literature suggesting that OPG and RANKL and their ratio (OPG/RANKL) are essential for regulating bone resorption. This is also correlated with osteoarthritis manifestation and progression. The present study therefore examines whether ROR2 polymorphisms may be associated with the OPG/RANKL ratio and hand osteoarthritis (HOA). The study was conducted in a family-based sample of 1,515 Caucasian individuals, assessed for radiographic hand osteoarthritis, using the Kellgren/Lawrence score. Of these, 865 individuals were genotyped for 19 SNPs, relatively equally covering the ROR2 locus, and their plasma levels of OPG and RANKL were assayed. The association between the selected SNPs and OPG, along with the OPG/RANKL ratio and HOA, was explored using the pedigree disequilibrium test. Of the total of 57 tests, 16 nominally significant results ($p < 0.05$) were obtained, which is considerably more than the three normally expected for type I error. The significant association signals for all three phenotypes were mapped to the intron 1 region. The most significant results were detected between OPG/RANKL and rs7048756 ($p < 0.0005$) and between adjacent rs4744107 and Kellgren/Lawrence score ($p = 0.006$). The present study provides evidence of the significant association between ROR2 variants and the OPG/RANKL ratio in human plasma and also suggests ROR2 association with HOA.
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NR 52
TC 4
Z9 4
U1 0
U2 2
PU SPRINGER LONDON LTD
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J

AU Lee, MS
Ernst, E
AF Lee, Myeong Soo
Ernst, Edzard
TI Systematic reviews of t'ai chi: an overview
SO BRITISH JOURNAL OF SPORTS MEDICINE
LA English
DT Review
ID improving aerobic capacity; older-adults; risk-factors; exercise; efficacy; disease; qigong; chuan; falls
AB Several systematic reviews (SRs) have assessed the effectiveness of t'ai chi for many conditions including hypertension, osteoarthritis and fall prevention; however, their conclusions have been contradictory. The aim of this overview was to critically evaluate the SRs of t'ai chi for any improvement of medical conditions or clinical symptoms. English, Chinese and Korean electronic databases were searched for relevant articles, and data were extracted according to predefined criteria, 35 SRs met our inclusion criteria. They were related to the following conditions: cancer, older people, Parkinson's disease, musculoskeletal pain, osteoarthritis, rheumatoid arthritis (RA), muscle strength and flexibility, improving aerobic capacity, cardiovascular disease and risk factors, lowering resting blood pressure, osteoporosis or bone mineral density, type 2 diabetes, psychological health, fall prevention and improving balance, and any chronic conditions. In several instances, the conclusions of these articles were contradictory. Relatively clear evidence emerged to suggest that t'ai chi is effective for fall prevention and improving psychological health and was associated with general health benefits for older people. However, t'ai chi seems to be ineffective for the symptomatic treatment of cancer and RA. In conclusion, many SRs of t'ai chi have recently been published; however, the evidence is convincingly positive only for fall prevention and for improvement of psychological health.
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Unknown -, 2010, BMJ-BRIT MED J, V340, P0, DOI [DOI 10.1136/BMJ.C332, 10.1136/bmj.c332]
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NR 41
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PI LONDON
PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR, ENGLAND
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SC Sport Sciences
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PT J
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TI Differential Age-Related Bone Architecture Changes between Female and Male STR/Ort Mice
SO EXPERIMENTAL ANIMALS
LA English
DT Article
DE bone architecture; osteoarthritis; STR/Ort
ID tibial torsion; ovariectomized rats; mineral density; trabecular bone; osteoarthritis; knee; cartilage; metabolism; joint; osteoporosis
AB The incidence of spontaneous osteoarthritis (OA) in female STR/Ort mice is much lower than that observed in male STR/Ort mice; however, the reason for the differential incidence of OA between sexes has not been elucidated. Here, we investigated and compared age- and sex-related bone mineral density and architectural changes in male and female STR/Ort mice. Bone architecture and bone mineral density (BMD) of femurs were examined in 5-, 10-, 15-, 20-, and 35-week-old male and female STR/Ort mice by microscopic computed tomography (mu CT). Angular degrees of internal tibial torsion (ADITT) were also measured in mice at 5, 15, and 35 weeks of age. Earlier decreases of cancellous volume and BMD were found in male STR/Ort mice. Using mu CT, an age-related decline of bone marrow space in femoral diaphysis was observed in both males and females but was more dramatic in females. In addition, an earlier increase of ADITT was observed in male STR/Ort mice, suggesting that internal rotation of the tibia may contribute to OA. Age- and sex-related bone architectural changes clearly differ between male and female STR/Ort mice. These differences in bone structure, particularly ADITT, may explain the differential incidence of OA in STR/Ort mice.
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CR Bettica P, 2002, ARTHRITIS RHEUM, V46, P3178, DOI 10.1002/art.10630
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PT J
AU Liu, ZW
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Srouji, IA
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AF Liu, Zi Wei
Masterson, Liam M.
Srouji, Ibrahim A.
Musonda, Patrick
Scott, David G. I.

TI Voice Symptoms in Patients with Autoimmune Disease: A Cross-sectional Epidemiological Study
SO OTOLARYNGOLOGY-HEAD AND NECK SURGERY
LA English
DT Article
DE voice disorders; autoimmune diseases; voice quality; laryngopharyngeal reflux; disease-modifying antirheumatic drugs; depression; xerostomia; cross-sectional survey
ID systemic-lupus-erythematosus; quality-of-life; rheumatoid-arthritis; risk-factors; prevalence; involvement; association; disorders; dysphonia
AB Objective. To assess the prevalence and severity of voice symptoms in individuals with a diagnosis of autoimmune disease. Study Design. Cross-sectional survey. Setting. Study participants were recruited from a rheumatology tertiary referral clinic at Norfolk and Norwich University Hospital. Subjects and Methods. A cross-sectional questionnaire analyzing 109 patients with autoimmune disease (rheumatoid arthritis, seronegative spondyloarthritis, connective tissue disease) and a control group of 41 patients with non-autoimmune disease (osteoarthritis/osteoporosis). Main outcome measures were the Voice Handicap Index-10 (VHI-10), xerostomia scale, acid reflux inquiry, and anxiety/depression scale. Results. Patients with autoimmune disease were more likely to experience voice symptoms as assessed by the VHI-10 questionnaire (P = .0035). Subgroup analysis showed autoimmune patients were more likely to report voice symptoms regardless of whether they were on a disease-modifying antirheumatic drug (DMARD; P = .0010) or non-DMARD (P = .017), suggesting autoimmune disease may be an independent risk factor from pharmacotherapy. Xerostomia was more common in an autoimmune population compared with the control group (P = .02). A positive correlation between xerostomia and VHI-10 scores was found for the DMARD group (Spearman rank coefficient = 0.49, P < .001). No significant difference in acid reflux inquiry (P = .44) or the anxiety/depression scale (P = .36) was found when comparing the autoimmune and control groups. Conclusion. Patients with autoimmune disease have increased likelihood of voice symptoms when compared with a control population with non-autoimmune disease. Further prospective studies to elucidate the cause of voice disorder would be valuable.
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NR 28
TC 7
Z9 9
U1 0
U2 3
PU WILEY
PI HOBOKEN

PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0194-5998
EI 1097-6817
J9 OTOLARYNG HEAD NECK
JI Otolaryngol. Head Neck Surg.
PD DEC 15
PY 2012
VL 147
IS 6
BP 1108
EP 1113
DI 10.1177/0194599812459024
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WC Otorhinolaryngology; Surgery
SC Otorhinolaryngology; Surgery
GA 081CH
UT WOS:000314293000020
PM 22931896
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ER

PT J
AU Richette, P
   Roux, C
AF Richette, P.
   Roux, C.
TI Impact of treatments for osteoporosis on cartilage biomarkers in humans
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Biomarkers; Bisphosphonate; Bone; Calcitonin; Estrogens; Osteoarthritis; Selective estrogen receptor modulators; Strontium ranelate
ID knee osteoarthritis; salmon-calcitonin; postmenopausal women; subchondral bone; ii degradation; ctx-ii; estrogen; chondrocytes; symptoms; turnover
AB The rationale to target bone for treating osteoarthritis (OA) relies on the known cross-talk between subchondral bone and cartilage and the demonstration that subchondral bone resorption occurs at an early stage in the development of OA. Therefore, the possible OA disease-modifying effects of bone antiresorptive agents are of interest. This paper aims to review the published data on the effect of estrogens, selective estrogen receptor modulators, calcitonin, strontium ranelate, and bisphosphonates on cartilage biomarkers levels used as surrogate endpoints in clinical trials. Except for findings for tibolone, most observations indicated that these antiresorptive therapies decreased the urinary levels of CTX-II, a biomarker of type II collagen degradation. These data, which should be cautiously interpreted,

suggest that these drugs might favorably affect cartilage homeostasis.
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NR 27
TC 7
Z9 11
U1 0
U2 10
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD DEC 15
PY 2012
VL 23
IS
BP S877
EP S880
DI 10.1007/s00198-012-2165-9
PG 4
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 248TD
UT WOS:000326725200008
PM 23179570
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ER

PT J
AU Brennan, SL
Wluka, A
Gould, H
Nicholson, GC
Leslie, WD
Ebeling, PR
Oldenburg, B
Kotowicz, MA
Pasco, JA

AF Brennan, Sharon L.
Wluka, Anita
Gould, Haslinda
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Leslie, William D.
Ebeling, Peter R.
Oldenburg, Brian
Kotowicz, Mark A.
Pasco, Julie A.
TI Social Determinants of Bone Densitometry Uptake for Osteoporosis Risk in Patients Aged 50 Yr and Older: A Systematic Review
SO JOURNAL OF CLINICAL DENSITOMETRY
LA English
DT Review
DE Dual-energy X-ray absorptiometry; osteoporosis; social determinants; systematic review; utilization
ID socioeconomic-status; fracture; men; density; care; hip; australia; osteoarthritis; association; management
AB The World Health Organization identifies that osteoporosis is one of the leading health problems in the Western world. An increased risk of fragility fracture is observed in more socially disadvantaged individuals in most Western countries. Dual-energy X-ray absorptiometry (DXA) is currently the procedure of choice to diagnose osteoporosis and assess fracture risk. We systematically reviewed the literature regarding social determinants of DXA utilization for osteoporosis detection in patients aged 50 yr and older using a computer-aided search of MEDLINE, EMBASE, CINAHL, and PsychINFO from January 1994 to December 2010. Five cross-sectional studies, incorporating 16 separate analyses, were identified for inclusion in this review. The best evidence analysis identified limited evidence for a positive association between either income or education with DXA utilization; furthermore, the best evidence analysis found no evidence for an association between either marital status or working status and DXA utilization. Further research is required to identify whether a relationship exists and elucidate reasons for disparities in DXA utilization between different social groups, such as choice and referral processes, as a necessary precursor in identifying modifiable determinants and appropriate strategies to promote preventive screening to identify fracture risk.
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NR 60
TC 14
Z9 15

U1 0
U2 9
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA
SN 1094-6950
EI 1559-0747
J9 J CLIN DENSITOM
JI J. Clin. Densitom.
PD APR-JUN 15
PY 2012
VL 15
IS 2
BP 165
EP 175
DI 10.1016/j.jocd.2011.12.005
PG 11
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 944DQ
UT WOS:000304179000007
PM 22321656
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ER

PT J
AU Akamatsu, Y
Mitsugi, N
Taki, N
Kobayashi, H
Saito, T
AF Akamatsu, Yasushi
Mitsugi, Naoto
Taki, Naoya
Kobayashi, Hideo
Saito, Tomoyuki
TI Medial versus lateral condyle bone mineral density ratios in a cross-sectional study: A potential marker for medial knee osteoarthritis severity
SO ARTHRITIS CARE & RESEARCH
LA English
DT Article
ID x-ray absorptiometry; subchondral bone; proximal tibia; static alignment; cartilage damage; osteo-arthritis; lumbar spine; pain; women; osteoporosis
AB Objective To assess the association of bone mineral density (BMD) of the

femoral and tibial condyles with knee pain and disease severity in women with symptomatic medial knee osteoarthritis (OA). Methods We enrolled 192 women (ages 4190 years) between April 2007 and March 2011. The subjects were divided into 2 groups according to joint space narrowing (JSN) on weight-bearing radiographs. BMD of the lumbar spine, proximal femur, and knee condyles was measured. Medial and lateral condyle BMDs of the femur and tibia as well as the medial versus lateral condyle BMD ratios were measured. Results Mean medial condyle BMDs, medial versus lateral condyle BMD ratios, and visual analog scale (VAS) pain in both the femur and the tibia were higher in the obliteration group compared with the narrowing group ($P < 0.001$ for all). A significant positive correlation was observed between the femoral and tibial condyles in the following parameters: medial condyle BMDs, lateral condyle BMDs, and medial versus lateral condyle BMD ratios ($r = 0.7910.844$). In both the femur and the tibia, medial versus lateral condyle BMD ratios had significant positive correlations with femorotibial angle, medial osteophytes, lateral osteophytes, medial JSN, and VAS pain, and had significant negative correlations with the Knee Society pain and function scores. Conclusion Although this study was a cross-sectional study, the femoral and tibial medial versus lateral condyle BMD ratios increased with more severe knee pain and might be a potential marker for monitoring disease severity in women with symptomatic medial knee OA.
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NR 45
TC 24
Z9 28
U1 0
U2 1
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 2151-464X
EI 2151-4658
J9 ARTHRIT CARE RES
JI Arthritis Care Res.
PD JUL 15
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VL 64
IS 7
BP 1036
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WC Rheumatology
SC Rheumatology
GA 965BL
UT WOS:000305741000012
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ER

PT J
AU Okano, K
Aoyagi, K
Osaki, M
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AF Okano, Kunihiko
Aoyagi, Kiyoshi
Osaki, Makoto
Motokawa, Satoru
Matsumoto, Tomoko
TI Bone mineral density is not related to heterotopic ossification after total hip arthroplasty
SO INTERNATIONAL ORTHOPAEDICS
LA English

DT Article
ID ectopic ossification; osteoarthritis; osteoporosis; replacement; women; risk
AB Heterotopic ossification (HO) after total hip arthroplasty (THA) is a frequent complication that compromises the success of this procedure; however, its precise pathogenesis is unknown. Patient-related risk factors have previously been investigated to predict patients likely to have HO. In this study, we compared bone mineral density (BMD) between patients with and without HO after THA. We measured BMD of the lumbar spine, radius, and calcaneus using dual-energy X-ray absorptiometry in 98 females who were scheduled to undergo THA. Radiographs were graded for the presence of HO according to the criteria of Brooker at a minimum follow-up of two years following THA. BMD were compared between those with HO and those without. In total, HO was observed in 20 of 98 hips. There were no significant differences in age, height, weight, body mass index, and pre-operative total hip score between the HO and non-HO groups. No significant difference was observed in BMD of the lumbar spine, distal radius, mid-radius, and calcaneus between the two groups. Our findings suggest that generalized BMD is not related to the occurrence of HO after THA in women.
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NR 25
TC 4
Z9 5
U1 0
U2 1
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0341-2695
EI
J9 INT ORTHOP
JI Int. Orthop.
PD JUN 15
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IS 6
BP 1163
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DI 10.1007/s00264-011-1446-9
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WC Orthopedics
SC Orthopedics
GA 943XH
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ER

PT J
AU Lespessailles, E
Jennane, R
AF Lespessailles, E.
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TI Assessment of bone mineral density and radiographic texture analysis at the tibial subchondral bone
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE BMD; Osteoarthritis; Subchondral bone
ID fractal signature analysis; knee osteoarthritis; trabecular bone; osteoporosis; cartilage; compartment; incident; marker; damage; oa
AB Microstructural changes of subchondral bone constitute one of the figures characterising osteoarthritis on a structural level. Subchondral bonemineral density may reflect the complex relationship between bone and cartilage submitted to movement and loading. In this review, the authors discussed the interest of tibial subchondral bone mineral density assessment in the perspective of its diagnostic, etiopathogenic and prognostic value in osteoarthritis. In addition, the sources of variability linked to the measurement of tibial subchondral bone mineral density are precised. Trabecular bone structure characterisation by radiographic texture analyses may also represent a new promising tool to evaluate the microarchitectural changes that occur with initiation and progression of osteoarthritis. In this paper, the authors also highlighted the interest of different radiographic texture analyses and their clinical relevance in the field of osteoarthritis.
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NR 44
TC 11
Z9 12
U1 0
U2 8
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD DEC 15
PY 2012
VL 23
IS
BP S871
EP S876
DI 10.1007/s00198-012-2167-7
PG 6
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 248TD
UT WOS:000326725200007
PM 23179572
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ER

PT J
AU Soni, A
Kiran, A
Hart, DJ
Leyland, KM
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Cooper, C

Javaid, MK
Spector, TD
Arden, NK
AF Soni, A.
Kiran, A.
Hart, D. J.
Leyland, K. M.
Goulston, L.
Cooper, C.
Javaid, M. K.
Spector, T. D.
Arden, N. K.
TI Prevalence of Reported Knee Pain Over Twelve Years in a Community-Based Cohort
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID general-population; osteoarthritis; adults; impact; hip; epidemiology; experience; disability; chingford; women
AB Objective. To describe the temporal patterns of knee pain in a community-based cohort over 12 years. Methods. Data on self-reported knee pain at 4 time points over 12 years were analyzed in participants from the Chingford Women's Study of osteoarthritis (OA) and osteoporosis. Pain status was defined as any pain in the preceding month and pain on most days in the preceding month. This status was used to classify participants according to pain patterns of asymptomatic, persistent, incident, or intermittent pain. Multinomial logistic regression was used to identify baseline predictors for each pain pattern. Results. Among the 489 women with complete followup data, the median age at baseline was 52 years (interquartile range [IQR] 48-58 years), the median body mass index (BMI) was 24.39 kg/m(2) (IQR 22.46-27.20), and 11.7% of the women had a Kellgren/Lawrence radiographic OA severity grade of >= 2 in at least one knee. Among subjects reporting any pain in the preceding month versus those reporting pain on most days in the preceding month, 9% versus 2% had persistent pain, 24% versus 16% had incident pain, and 29% versus 18% had intermittent pain. A higher BMI was predictive of persistent pain (odds ratio [OR] 1.14, 95% confidence interval [95% CI] 1.04-1.25) and incident pain (OR 1.10, 95% CI 1.02-1.18). The presence of radiographic knee OA was predictive of persistent pain (OR 3.70, 95% CI 1.34-10.28; P = 0.012), and reported knee injury was predictive of both persistent pain (OR 4.13, 95% CI 1.34-12.66; P = 0.013) and intermittent pain (OR 4.25, 95% CI 1.81-9.98; P = 0.001). Conclusion. Significant variability in the temporal fluctuation of self-reported knee pain was seen in this community-based prospective study over a period of 12 years, with few women consistently reporting knee pain at each time point. Distinct baseline predictors for each pain pattern were identified and may explain the observed heterogeneity of self-reported knee pain when pain

status is measured at only one time point.
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NR 23
TC 38
Z9 40
U1 0
U2 0
PU WILEY-BLACKWELL
PI MALDEN
PA COMMERCE PLACE, 350 MAIN ST, MALDEN 02148, MA USA
SN 0004-3591
EI
J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
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VL 64
IS 4
BP 1145
EP 1152
DI 10.1002/art.33434
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WC Rheumatology
SC Rheumatology
GA 921KC
UT WOS:000302475500025
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PT J
AU Yoshimura, N
Muraki, S
Oka, H
Tanaka, S
Kawaguchi, H
Nakamura, K
Akune, T
AF Yoshimura, N.
Muraki, S.
Oka, H.
Tanaka, S.

Kawaguchi, H.
Nakamura, K.
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TI Accumulation of metabolic risk factors such as overweight, hypertension, dyslipidaemia, and impaired glucose tolerance raises the risk of occurrence and progression of knee osteoarthritis: a 3-year follow-up of the ROAD study
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Knee osteoarthritis; Incidence; Progression; Metabolic syndrome; Population-based cohort study
ID body-mass index; hip osteoarthritis; obesity; association; population; women; prevalence; management
AB Objective: To clarify the association between the occurrence and progression of knee osteoarthritis (KOA) with components of metabolic syndrome (MS), including overweight (OW), hypertension (HT), dyslipidaemia (DL), and impaired glucose tolerance (IGT), in a general population. Design: From the large-scale population-based cohort study entitled Research on Osteoarthritis/Osteoporosis Against Disability (ROAD) initiated in 2005, 1,690 participants (596 men, 1,094 women) residing in mountainous and coastal areas were enrolled. Of these, 1,384 individuals (81.9%; 466 men, 918 women) completed the second survey, including knee radiography, 3 years later. KOA was defined as Kellgren-Lawrence (KL) grade >= 2 using paired X-ray films. Based on changes in KL grades between the baseline and second surveys, cumulative incidence and progression of KOA were determined. OW, HT, DL, and IGT at baseline were assessed using standard criteria. Results: The cumulative incidence of KOA among 1,384 completers over 3 years was 3.3%/year, and progression in KL grades for either knee, 8.0%/year. Logistic regression analyses after adjusting for potential risk factors revealed that the odds ratio (OR) for the occurrence of KOA significantly increased according to the number of MS components present (OR vs no component: one component. 2.33; two components, 2.82; >= three components, 9.83). Similarly, progression of KOA significantly increased according to the number of MS components present (OR vs no component: one component, 1.38; two components, 2.29; >= three components: 2.80). Conclusion: Accumulation of MS components is significantly related to both occurrence and progression of KOA. MS prevention may be useful in reducing future KOA risk. (C) 2012 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 50
TC 240
Z9 300
U1 0
U2 22
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584

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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD NOV 15
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VL 20
IS 11
BP 1217
EP 1226
DI 10.1016/j.joca.2012.06.006
PG 10
WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 020YV
UT WOS:000309853400002
PM 22796312
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ER

PT J
AU Meadows, ES
Mitchell, BD
Bolge, SC
Johnston, JA
Col, NF
AF Meadows, Eric S.
Mitchell, Beth D.
Bolge, Susan C.
Johnston, Joseph A.
Col, Nananda F.
TI Factors associated with treatment of women with osteoporosis or osteopenia from a national survey
SO BMC WOMENS HEALTH
LA English
DT Article
ID fracture risk-assessment; bone-density; prevention; care; osteoarthritis; epidemiology; disparity; guidelines; diagnosis; frax(tm)
AB Background: Health outcomes could be improved if women at high risk for osteoporotic fracture were matched to effective treatment. This study determined the extent to which treatment for osteoporosis/osteopenia corresponded to the presence of specific risk factors for osteoporotic fracture. Methods: This retrospective analysis of the United States 2007 National Health and Wellness Survey included women age >= 40 years who reported having a diagnosis of osteoporosis (69% of 3276) or osteopenia (31% of 3276). Patients were stratified by

whether they were or were not taking prescription treatment for osteoporosis/osteopenia. Using 34 patient characteristics as covariates, logistic regression was used to determine factors associated with treatment. Results: Current prescription treatment was reported by 1800 of 3276 (54.9%) women with osteoporosis/osteopenia. The following factors were associated with receiving prescription treatment: patient-reported diagnosis of osteoporosis (versus osteopenia); previous bone mineral density test; >= 2 fractures since age 50; older age; lower body mass index; better physical functioning; postmenopausal status; family history of osteoporosis; fewer comorbidities; prescription insurance coverage; higher total prescription count; higher ratio of prescription costs to monthly income; higher income; single status; previous visit to a rheumatologist or gynecologist; and 1 or 2 outpatient visits to healthcare provider (vs. none) in the prior 6 months. Glucocorticoid, tobacco, and daily alcohol use were risk factors for fracture that were not associated with treatment. Conclusions: There is a mismatch between those women who could benefit from treatment for osteoporosis and those who are actually treated. For example, self-reported use of glucocorticoids, tobacco, and alcohol were not associated with prescription treatment of osteoporosis. Other clinical and socioeconomic factors were associated with treatment (e. g. prescription drug coverage and higher income) or not (e. g. comorbid osteoarthritis and anxiety) and could be opportunities to improve care.
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CR Unknown -, 2013, TECHNICAL REPORT 202, V0, P0
Unknown -, 2007, NAT HLTH WELLN SURV, V0, P0
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NR 35
TC 21
Z9 25
U1 0
U2 3
PU BIOMED CENTRAL LTD
PI LONDON
PA 236 GRAYS INN RD, FLOOR 6, LONDON WC1X 8HL, ENGLAND
SN 1472-6874

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J9 BMC WOMENS HEALTH
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DI 10.1186/1472-6874-12-1
PG 9
WC Public, Environmental & Occupational Health; Obstetrics & Gynecology
SC Public, Environmental & Occupational Health; Obstetrics & Gynecology
GA 070HR
UT WOS:000313497700001
PM 22225919
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PT J
AU Zupan, J
Pristovsek, N
Mencej-Bedrac, S
Komadina, R
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Marc, J
AF Zupan, Janja
Pristovsek, Nusa
Mencej-Bedrac, Simona
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Marc, Janja
TI Interleukin-1α gene variants influence bone mineral density and the risk of osteoporotic hip fractures in elderly Slovenian people
SO CLINICAL CHEMISTRY AND LABORATORY MEDICINE
LA English
DT Article
DE bone; IL-1 alpha; inflammation; osteoporosis; rs17561; rs2071375
ID postmenopausal osteoporosis; cytokine production; rheumatoid-arthritis; blood cells; expression; polymorphisms; osteoarthritis; association; women
AB Background: Osteoporosis is a skeletal disorder, characterized by low bone mass and microarchitectural deterioration of bone tissue, leading to increased risk of fracture. Recently, the role of age-related pro-inflammatory cytokines, such as interleukin (IL)-1 alpha, in stimulating bone resorption has been suggested. As

osteoporosis has a strong genetic background, the aim of our study was to evaluate the association of two IL-1 alpha gene single nucleotide polymorphisms (SNPs) rs2071375 (+12534G>A) and rs17651 (+4845G>T) with osteoporotic phenotypes as well as to find the association with IL-1 alpha gene expression in human bone tissue. Methods: Gcnotyping was performed in 671 Slovenian participants, 125 elderly men, 490 post- and 56 premenopausal women. Bone mineral density (BMD) at the lumbar spine, femoral neck and total hip were measured. Biochemical markers of bone turnover were measured in women. Results: Significant association of GG/TA haplotype with higher femoral neck and total hip BMD in elderly men and women was shown (p=0.009 and 0.030, respectively). In men, the association of the GG/GG haplotype with higher femoral neck BMD was of limited statistical significance (p=0.050). In women, significant association of studied genetic variants with serum C-terminal crosslinking telopeptides of type I collagen and bone alkaline phosphatase were found (p=0.033 and 0.029, respectively). No influence on IL-1 alpha expression was found. Finally, significantly lower odds ratio for hip fracture associated with the presence of TA haplotype was found (p=0.026). Conclusions: Our results of the association of IL-1 alpha gene single nucleotide polymorphisms (SNPs) rs2071375 (+12534G>A) and rs17651 (+4845G>T) with osteoporotic features indicate its role in pathogenesis of osteoporosis. However, these findings need further functional and clinical confirmation.
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NR 29
TC 9
Z9 11
U1 0
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PU WALTER DE GRUYTER GMBH
PI BERLIN
PA GENTHINER STRASSE 13, D-10785 BERLIN, GERMANY
SN 1434-6621
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J9 CLIN CHEM LAB MED
JI Clin. Chem. Lab. Med.
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WC Medical Laboratory Technology

SC Medical Laboratory Technology
GA 011XV
UT WOS:000309200500014
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PT J
AU Wysolmerski, JJ
AF Wysolmerski, John J.
TI Parathyroid Hormone-Related Protein: An Update
SO JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM
LA English
DT Article
ID pth-related-protein; nuclear-localization sequence; embryonic mammary-gland; beta-cell proliferation; breast-cancer; growth-plate; smooth-muscle; humoral hypercalcemia; pth/pthrp receptor; skeletal development
AB PTHrP was identified as a cause of hypercalcemia in cancer patients 25 yr ago. In the intervening years, we have learned that PTHrP and PTH are encoded by related genes that are part of a larger "PTH gene family." This evolutionary relationship permits them to bind to the same type 1 PTH/PTHrP receptor, which explains why humoral hypercalcemia of malignancy resembles hyperparathyroidism. This review will outline basic facts about PTHrP biology and its normal physiological functions, with an emphasis on new findings of the past 5-10 yr. The medical and research communities first became aware of PTHrP because of its involvement in a common paraneoplastic syndrome. Now, research into the basic biology of PTHrP has suggested previously unrecognized connections to a variety of disease states such as osteoporosis, osteoarthritis, and breast cancer and has highlighted how PTHrP itself might be used in therapy for osteoporosis and diabetes. Therefore, the story of this remarkable protein is a paradigm for translational research, havinggone from bedside to bench and now back to bedside. (J Clin Endocrinol Metab 97: 2947-2956, 2012)
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PU ENDOCRINE SOC
PI CHEVY CHASE
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TI Increased proportion of hypermineralized osteocyte lacunae in osteoporotic and osteoarthritic human trabecular bone: Implications for bone remodeling
SO BONE
LA English
DT Article
DE Hypermineralized osteocyte lacunae; Trabecular bone; Osteoporosis; Osteoarthritis; Quantitative backscattered electron imaging; Energy dispersive X-ray spectrometry
ID femoral-neck; mineralization density; cancellous bone; solute transport; matrix; expression; osteoblast; fracture; mlo-a5
AB Hypermineralized osteocyte lacunae (micropetrosis) have received little research attention. While they are a known aspect of the aging human skeleton, no data are available for pathological bone. In this study, intertrochanteric trabecular bone cores were obtained from patients at surgery for osteoporotic (OP) femoral neck fracture (10F, 4M, 65-94 years), for hip osteoarthritis (OA; 7F, 8M, 62-87 years), and femora at autopsy (CTL; 5F, 11M, 60-84 years). Vertebral trabecular bone cores

were also obtained from the vertebra of autopsy cases (CVB; 3F, 6M, 53-83 years). Specimens were resin-embedded, polished, and carbon coated for quantitative backscattered electron imaging (qBEI), energy dispersive X-ray (EDX) spectrometry, and imaging analysis. Bone mineralization (Wt %Ca) was not different between OP. OA, and CTL; but was greater in femoral CTL than in CVB. The percent of hypermineralized osteocyte lacunae relative to the total number (HL/TL) was greater in OP and OA than in CTL However, relative to bone mineral area, OP was characterised by increased hypermineralized osteocyte lacunar number density (Hd.Lc.Dn), whereas OA was characterised by decreased osteocyte lacunar number density (Lc.Dn) and total osteocyte lacunar number density (Tt.Lc.Dn). Lc.Dn was higher in CVB than in femoral CTL. The calcium-phosphorus ratio (R-Ca/P) was not different between hypermineralized osteocyte lacunae and bone matrix in each group. In addition, this study focused on the phenomenon of osteocyte lacunae hypermineralization using qBEI. Seven morphological types of osteocyte lacunae hypermineralization were described according to the presence of one or several hypermineralized spherites, associated or not with a hypermineralized lacunar ring. This study has described, for the first time, the morphology of hypermineralized osteocyte lacunae in OP and OA human bone. Further studies are suggested to investigate the functional influence of hypermineralized osteocyte lacunae on bone remodeling and bone biomechanical properties. (C) 2011 Elsevier Inc. All rights reserved.
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TI Incidence and risk factors for radiographic lumbar spondylosis and lower back pain in japanese men and women: the ROAD study
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Spondyloarthritis; Epidemiology; Lower back pain
ID quality-of-life; 5-year follow-up; disc degeneration; osteoarthritis; determinants; progression; population; epidemiology; disability; spine
AB Objective: To determine the incidence of radiographic lumbar spondylosis (LS)and lower back pain, and their risk factors in Japan using a large-scale population from the nationwide cohort Research on Osteoarthritis/osteoporosis Against Disability (ROAD) Study. Methods: Participants in the ROAD study who had been recruited between 2005 and 2007 were followed up with lumbar spine radiography for 3 years. A total of 2,282 paired radiographs (75% of the original sample) were scored using Kellgren and Lawrence (KL) grades, and the incidence and progression rate of radiographic LS was analyzed. The incidence of lower back pain was also examined. In addition, associations between risk factors and incident and progressive radiographic LS as well as incident lower back pain were tested. Results: Given a 3.3-year follow-up, the incidence of KL >= 2 radiographic LS was 50.0% and 34.4% (15.3% and 10.5% per year), while that of KL >= 3 LS was 15.3% and 23.7% (4.6% and 7.2% per year) in men and women, respectively. The progression rate of LS was 20.5% and 27.4% (6.2% and 8.3% per year) in men and in women, respectively. In addition, the incidence of lower back pain was 28.3% and 31.2% (8.6% and 9.5% per year) in men and women. Lower back pain was not significantly associated with incident radiographic LS, while a more severe KL grade at baseline was associated with incident lower back pain. Conclusion: The present longitudinal study revealed a high incidence of radiographic LS in Japan. (C) 2012 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.

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PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
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TI Caffeine-induced fetal rat over-exposure to maternal glucocorticoid and histone methylation of liver IGF-1 might cause skeletal growth retardation
SO TOXICOLOGY LETTERS
LA English
DT Article
DE Caffeine; Glucocorticoids; Insulin-like growth factor 1; Histone methylation; Growth plate; Skeletal growth retardation
ID longitudinal bone-growth; rna-polymerase-ii; chondrocyte differentiation; corticosterone levels; birth-weight; intrauterine; pregnancy; plate; expression; receptor
AB Several epidemiological investigations, including previous work by our laboratory, indicate that maternal caffeine consumption is associated with intrauterine growth retardation and impaired fetal length growth. Skeletal development is critical for length growth. In the present study, our goals were to determine the effects of prenatal caffeine exposures on fetal skeletal growth and to investigate the mechanisms associated with such effects. Pregnant Wistar rats were injected intragastrically with 120 mg/kg of caffeine intragastrically each day from gestational days 11-20. Maternal prenatal caffeine exposure was associated with decreased fetal femur lengths and inhibited of synthesis of extracellular matrices in fetal growth plates Moreover, caffeine exposure significantly increased the levels of fetal blood corticosterone and decreased IGF-1mRNA expression levels in the liver and growth plate. The expression levels of IGF1 signaling pathway components (IGF-1R, IRS-1, AKT1/2 and Col2A1) were also reduced. In addition, the results of chromatin immunoprecipitation assays indicated that caffeine exposure down-regulated histone methylation of fetal IGF-1 in the liver. These results suggest that prenatal caffeine exposure may inhibit fetal skeletal growth through a mechanism that is associated with increased fetal exposure to maternal glucocorticoids and results in lower IGF-1 signaling pathway activity. Taken together, these results raise important concerns regarding the skeletal growth toxicity of caffeine and potentially indicate the intrauterine origins of adult

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TC 100
Z9 109
U1 1
U2 37
PU ELSEVIER IRELAND LTD
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SN 0378-4274
EI 1879-3169
J9 TOXICOL LETT
JI Toxicol. Lett.
PD NOV 15
PY 2012
VL 214
IS 3
BP 279
EP 287
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WC Toxicology
SC Toxicology
GA 029YN
UT WOS:000310534100007
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PT J
AU Gokce Kutsal, Y
Özdemir, O
Karahan, S
Akyol, Y
Borman, P
Dogan, A
Eyigör, S
Güzel, R

Ortancil, Ö
Savas, S
Senel, K
Turhanoglu, AD
Yagci, I
AF Gokce Kutsal, Yesim
Ozdemir, Oya
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Akyol, Yesim
Borman, Pinar
Dogan, Asuman
Eyigor, Sibel
Guzel, Rengin
Ortancil, Ozgur
Savas, Serpil
Senel, Kazim
Turhanoglu, Ayse Dicle
Yagci, Ilker
TI Musculoskeletal Pain in Elderly Patients with Osteoporosis: A Multicenter Study
SO TURKIYE FIZIKSEL TIP VE REHABILITASYON DERGISI-TURKISH JOURNAL OF PHYSICAL MEDICINE AND REHABILITATION
LA English
DT Article
DE Osteoporosis; musculoskeletal diseases; pain; elderly
ID prevalence; disorders; epidemiology; fracture; burden
AB Objective: The aim of this study was to identify the ones with osteoporosis (OP) in elderly patients presenting with musculoskeletal complaints and to evaluate the distribution of region of pain and the medications used for the musculoskeletal disease(s) in these patients. Materials and Methods: 1141 elderly patients who were consecutively admitted to the outpatient clinics in nine different provinces were screened for the diagnosis of OR Age, gender, complaints, diagnosis and current medications related to musculoskeletal system disorder(s) were recorded. Results: 382 elderly (341 female, 41 male) with a mean age of 71.9 +/- 5.3 years had the diagnosis of OR Low (54.5%) and upper back (39.6%) pain were the most common complaints in both sexes. These were followed by knee, hip, cervical and shoulder pain, respectively. Osteoarthritis (36%), lumbar (21%) and cervical spondylosis/stenosis (10%) were the most common musculoskeletal diseases accompanying OR The mean number of drugs used was 3.0 +/- 1.2. The most commonly prescribed anti-osteoporotic agents were bisphosphonates (59%). For the musculoskeletal pain, non-steroidal anti-inflammatory drugs (systemic and/or topical) were used in 46.6% and paracetamol in 24.6% of patients. Conclusion: It is crucial to perform a thorough physical examination to reveal the underlying cause of back pain in elderly osteoporotic patients. Besides, in order to minimize polypharmacy, it should be kept in mind that non-pharmacological approaches can

be used for the management of musculoskeletal diseases. Turk J Phys Med Rehab 2012;58:263-6.
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NR 17
TC 0
Z9 1
U1 0
U2 23
PU BAYCINAR MEDICAL PUBL-BAYCINAR TIBBI YAYINCILIK
PI ATASEHIR
PA ORNEK MH DR SUPHI EZGI SK SARAY APT NO 11 D 6, ATASEHIR, ISTANBUL 34704, TURKEY
SN 1302-0234
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J9 TURK FIZ TIP REHAB D
JI Turk. Fiz. Tip Rehabil. Derg.
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PY 2012
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IS 4
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DI 10.4274/tftr.04706
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WC Rehabilitation
SC Rehabilitation
GA 075CN
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PT J
AU Chiba, K
Uetani, M
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Shindo, H
AF Chiba, K.
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Shindo, H.
TI Osteoporotic changes of subchondral trabecular bone in osteoarthritis of the knee: a 3-T MRI study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Magnetic resonance imaging (MRI); Osteoarthritis of the knee; Osteoporosis; Subchondral bone; Trabecular structure
ID cruciate ligament transection; articular-cartilage; in-vivo; distal radius; microstructure; quantification; degradation; progression; tomography; lesions
AB Subchondral trabecular bone structure was analyzed in knee osteoarthritis (OA) patients using 3-T MRI to investigate structural features of subchondral trabecular bone of knee OA. With OA progression, osteoporotic changes were observed in the lateral joint, showing a higher correlation than sclerotic changes in the medial joint. To investigate structural features of subchondral trabecular bone of knee osteoarthritis (OA). Sixty knees with KL grade 0-4 (all female) were examined. Fast imaging employing steady-state acquisition-cycled phases (FIESTA-c) and FatSat Spoiled gradient recalled acquisition in the steady state (SPGR) images were acquired by 3-T MRI. At four sites (the medial femur, medial tibia, lateral femur, and lateral tibia), subchondral trabecular bone structure was analyzed by FIESTA-c imaging, cartilage area was measured by SPGR imaging, and their correlation was analyzed. In addition, the subjects were classified into four groups from the cartilage area measured by SPGR imaging, and subchondral trabecular bone structure in each group was compared. As cartilage area decreased in the medial joint, bone volume fraction and trabecular thickness in the medial tibia increased, and bone volume fraction, trabecular thickness, number, and connectivity in the lateral femur and lateral tibia decreased (r a parts per thousand yenaEuro parts per thousand 0.4 or a parts per thousand currency signa'0.4, p a parts per thousand currency signaEuro parts per thousand 0.001). Compared to medially, the changes laterally showed a higher correlation. When the medial-lateral ratio of trabecular thickness in the tibia was determined, it had the highest correlation coefficient ($r=-0.7$, $p < 0.001$). These changes were not significantly detected in the early stage. To more sensitively detect OA changes in subchondral trabecular bone structure, a focus on osteoporotic changes in the lateral joint and the medial-lateral ratio would be useful. Detectability of early OA remains unknown, but based on a strong correlation with the degree of OA progression, trabecular structural analysis of subchondral bone may be a useful parameter to evaluate OA severity and

evaluate treatment.
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Tat SK, 2010, BEST PRACT RES CL RH, V24, P51, DOI 10.1016/j.berh.2009.08.004
NR 29
TC 42
Z9 49
U1 0
U2 13
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD FEB 15
PY 2012
VL 23
IS 2
BP 589
EP 597
DI 10.1007/s00198-011-1585-2
PG 9
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 879CC
UT WOS:000299306300019
PM 21359670
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ER

PT J
AU Korostishevsky, M
Williams, F
Hart, D
Blumenfeld, O
Spector, T
Livshits, G
AF Korostishevsky, Michael
Williams, Frances
Hart, Deborah

Blumenfeld, Orit
Spector, Timothy
Livshits, Gregory
TI Implementation of the simplified stochastic model of ageing for longitudinal osteoarthritis data assessment
SO ANNALS OF HUMAN BIOLOGY
LA English
DT Article
DE Knee osteoarthritis; Kellgren/Lawrence; age-dependent degeneration; maximum likelihood; Monte-Carlo simulation
ID radiographic knee osteoarthritis; anterior cruciate ligament; risk-factors; age; cohort; time; mortality; meniscus; weight; period
AB Background: Occurrence and progression of age-related irreversible degradations of skeletal joints, osteoarthritis (OA), has a stochastic nature. However, it is commonly described using polynomial models, which may not necessarily be optimal. Aim: To implement a stochastic model of gradual accumulation of the distinct changes for estimating individuals' putative age at onset and risk of the process advancing in the OA longitudinal data. Subjects and methods: The model was formulated as a discrete Markov process. It was applied to radiographic knee osteoarthritis (RKOA) data: 243 Kellgren-Lawrence (K/L) and 207 osteophytes (OP) score histories from the 15-year follow-up Chingford study. Results: The model performance was examined in Monte-Carlo simulations. The mean age at onset of knee osteoarthritis was: 53.04 and 53.23 years and the average annual risk of one K/L and one OP grade appearance was: 0.066 and 0.025, respectively. The analysis also suggested that there is 3-4 years difference between the inferred age at onset and the age when knee osteoarthritis becomes detectable on radiograph. Conclusion: The stochastic model provides more accurate description of the empiric data compared with the corresponding polynomial model. The model-based individual's estimates could be used as an important tool to fit age-related patterns of the corresponding diseases and conditions.
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FU Israel Ministry of Health [3-4101]; Arthritis Research UK; Versus Arthritis [17489]
Funding Source: researchfish
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NR 30
TC 1
Z9 2
U1 0
U2 8
PU TAYLOR & FRANCIS LTD

PI ABINGDON
PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
SN 0301-4460
EI 1464-5033
J9 ANN HUM BIOL
JI Ann. Hum. Biol.
PD MAY 15
PY 2012
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IS 3
BP 214
EP 222
DI 10.3109/03014460.2012.681801
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WC Anthropology; Biology; Public, Environmental & Occupational Health
SC Anthropology; Life Sciences & Biomedicine - Other Topics; Public, Environmental & Occupational Health
GA 946MH
UT WOS:000304355300006
PM 22621755
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PT J
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   Akune, T
   Oka, H
   Ishimoto, Y
   Nagata, K
   Yoshida, M
   Tokimura, F
   Nakamura, K
   Kawaguchi, H
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AF Muraki, Shigeyuki
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TI Incidence and risk factors for radiographic knee osteoarthritis and knee pain in Japanese men and women: A longitudinal population-based cohort study
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID middle-aged women; osteo-arthritis; occupational activity; physical-activity; cartilage volume; natural-history; bone-marrow; body-mass; association; progression
AB Objective To examine the incidence and progression of radiographic knee osteoarthritis (OA) and the incidence of knee pain, and their risk factors in Japan, using the large-scale population of the nationwide cohort study ROAD (Research on Osteoarthritis/osteoporosis Against Disability). Methods Subjects from the ROAD study who had been recruited in 20052007 were followed up with knee radiography 3 years later. A total of 2,262 paired radiographs (74.4% of the original sample) were scored using the Kellgren/Lawrence (K/L) grading system, and the incidence and progression rate of knee OA was examined. The incidence rate of knee pain was also examined. In addition, risk factors were tested for their association with incident and progressive radiographic knee OA and incident knee pain. Results Given the similar to 3.3-year followup, the rate of incident K/L grade =2 radiographic knee OA was 6.9% and 11.9% in men and women, respectively, while that of K/L grade =3 knee OA was 8.4% and 13.9% in men and women, respectively. The rate of progressive knee OA was 17.8% and 22.3% in men and women, respectively. The incident rate of knee pain was 21.2% and 27.3% in men and women, respectively. Female sex was a risk factor for incident K/L grade =2 knee OA, but was not associated with incident K/L grade =3 knee OA or progressive knee OA. Knee pain was a risk factor for incident and progressive knee OA. Previous knee injury was a risk factor for knee pain but not for radiographic knee OA. Conclusion The present longitudinal study revealed a high incidence of radiographic knee OA in Japan.
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NR 49
TC 93
Z9 108
U1 0
U2 12
PU WILEY-BLACKWELL
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J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
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WC Rheumatology
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PT J
AU Li, D
Yuan, Q
Wang, W
AF Li, D.
Yuan, Q.
Wang, W.
TI The Role of Telomeres in Musculoskeletal Diseases
SO JOURNAL OF INTERNATIONAL MEDICAL RESEARCH
LA English
DT Review
DE TELOMERE; TELOMERASE; OSTEOARTHRITIS; OSTEOPOROSIS; OSTEOSARCOMA; MUSCULOSKELETAL DISEASES
ID diploid cell strains; in-vitro; chondrocyte senescence; reverse-transcriptase; soft-tissue; replicative senescence; osteosarcoma cells; human osteoblasts; human fibroblasts; down-regulation
AB The telomeric region of repetitive DNA sequences at the end of chromosomes prevents end-to-end fusion of chromosome terminals and deterioration of the double-strand free ends. Because of the 'end-replication problem', telomeres shorten with each round of cell division, resulting in cell senescence. The enzyme telomerase compensates for telomere shortening by elongating telomeric sequences, thereby prolonging the lifespan of the cell. Studies of articular cartilage and bone tissues have indicated that telomere shortening limits normal cell function and proliferation, while the telomere maintenance mechanisms of osteosarcoma cells facilitate escape from cell death and promote immortality. This article reviews the literature on this topic and provides an extensive discussion of the basic molecular biology and roles of telomeres and telomerase in musculoskeletal diseases such as osteoarthritis, osteoporosis and osteosarcoma. Findings to date suggest that telomeres and telomerase may become novel therapeutic targets for the diagnosis, treatment and prevention of musculoskeletal disorders.

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NR 79
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Z9 10
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U2 6
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AU Kutty, S
Schneider, P
Faris, P
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Powell, JN
AF Kutty, Satish
Schneider, Prism
Faris, Peter
Kiefer, Gerhard
Frizzell, Bevan
Park, Roy
Powell, James N.
TI Reliability and predictability of the centre-edge angle in the assessment of pincer femoroacetabular impingement
SO INTERNATIONAL ORTHOPAEDICS
LA English
DT Article
ID femoral-head; surgical dislocation; hip; cam; osteoarthritis; prevalence; cartilage
AB Purpose The aim of the study was to assess the use of the centre-edge (CE) angle in the assessment of pincer femoroacetabular impingement (FAI) for reliability and predictability in the diagnosis. Methods Between 2004 and 2008, 55 patients underwent surgical treatment for FAI. A control group of 30 was identified among patients attending the emergency department with normal radiographs. Radiographs were assessed by two independent observers both before and after the operation. Nine patients with trauma were excluded. The magnetic resonance arthrogram reports of the remaining 46 patients were assessed for pincer FAI. Nineteen patients were identified and underwent repeat radiographic assessment. All underwent surgical dislocation of hip (SDH), acetabular, with/without femoral osteochondroplasty. Acetabular depth and version were also assessed. The intraclass correlation (ICC) was used to assess reliability of the CE angle. The paired t test and independent groups t test were used to assess the difference between the pincer FAI group, both pre-op and post-op and against controls. Results The control and pincer groups were similar in demographics (p=0.1769). Coxa profunda

was present in 14 patients with eight also having retroverted acetabuli. Of the rest two had retroverted acetabuli and one protrusio. The mean CE angle in the control group was 31.4 degrees, in the pre-op pincer group 46.2 degrees and in the post-op pincer group 38.3 degrees. The ICC for intra-observer correlation was 0.977 and 0.992 pre-op and 0.986 and 0.974 post-op. The ICC for inter-observer correlation was 0.960 and 0.957 pre-op and 0.979 and 0.967 post-op. The p value was <0.001 between the controls, the pre-op and post-op pincer groups. The test characteristics using the CE angle >= 40 is a reasonably good predictor of FAI, with a sensitivity of 84.2% and a specificity of 100%. Conclusions The pincer FAI can be reliably assessed with the CE angle and can be predicted in patients presenting with FAI.
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NR 30
TC 85
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PT J
AU Reid, WD
Yamabayashi, C
Goodridge, D
Chung, F
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Brooks, D
Chen, YW
Hoens, AM
Camp, PG
AF Reid, W. Darlene
Yamabayashi, Cristiane
Goodridge, Donna
Chung, Frank
Hunt, Michael A.
Marciniuk, Darcy D.
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Chen, Yi-Wen
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Camp, Pat G.
TI Exercise prescription for hospitalized people with chronic obstructive pulmonary disease and comorbidities: a synthesis of systematic reviews
SO INTERNATIONAL JOURNAL OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE
LA English
DT Review
DE pulmonary disease; chronic obstructive; comorbidity; exercise; physical fitness
ID progressive resistance exercise; chronic heart-failure; quality-of-life; acute medical illness; physical-activity; risk-factors; blood-pressure; united-states; copd exacerbations; aerobic exercise
AB Introduction: The prescription of physical activity for hospitalized patients with acute exacerbation of chronic obstructive pulmonary disease (AECOPD) can be complicated by the presence of comorbidities. The current research aimed to synthesize the relevant literature on the benefits of exercise for people with multimorbidities who experience an AECOPD, and ask: What are the parameters and outcomes of exercise in AECOPD and in conditions that are common comorbidities as reported by systematic reviews (SRs)? Methods: An SR was performed using the Cochrane Collaboration protocol. Nine electronic databases were searched up to July 2011. Articles were included if they (1) described participants with AECOPD, chronic obstructive pulmonary disease (COPD), or one

of eleven common comorbidities, (2) were an SR, (3) examined aerobic training (AT), resistance training (RT), balance training (BT), or a combination thereof, (4) included at least one outcome of fitness, and (5) compared exercise training versus control/sham. Results: This synthesis examined 58 SRs of exercise training in people with AECOPD, COPD, or eleven chronic conditions commonly associated with COPD. Meta-analyses of endurance (aerobic or exercise capacity, 6-minute walk distance - 6MWD) were shown to significantly improve in most conditions (except osteoarthritis, osteoporosis, and depression), whereas strength was shown to improve in five of the 13 conditions searched: COPD, older adults, heart failure, ischemic heart disease, and diabetes. Several studies of different conditions also reported improvements in quality of life, function, and control or prevention outcomes. Meta-analyses also demonstrate that exercise training decreases the risk of mortality in older adults, and those with COPD or ischemic heart disease. The most common types of training were AT and RT. BT and functional training were commonly applied in older adults. The quality of the SRs for most conditions was moderate to excellent (>65%) as evaluated by AMSTAR scores. Conclusion: In summary, this synthesis showed evidence of significant benefits from exercise training in AECOPD, COPD, and conditions that are common comorbidities. A broader approach to exercise and activity prescription in pulmonary rehabilitation may induce therapeutic benefits to ameliorate clinical sequelae associated with AECOPD and comorbidities such as the inclusion of BT and functional training.
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TI In situ fatty acid profile of femoral cancellous subchondral bone in osteoarthritic and fragility fracture females: Implications for bone remodelling
SO BONE
LA English
DT Article
DE Osteoarthritis; Fatty acid; Omega fatty acids; Femoral head; Osteoporosis
ID fish-oil omega-3-fatty-acids; n-9 eicosatrienoic acid; dietary supplementation; docosahexaenoic acid; marrow; osteoporosis; expression; osteoprotegerin; multicenter; secretion
AB We report here differences in the fatty acid profile of cancellous bone matrix, including n-3, n-6, mono- and polyunsaturated, as well as saturated fats, between femoral heads from female OA (n = 8, aged 68-88 years), fractured neck of femur (#NOF) (n = 19, 67-88 years) and autopsy controls (CTRL) (n = 4,85-97 years).

Femoral heads were collected from individuals undergoing orthopaedic surgery for OA or #NOF; the fatty acid profile of sub-samples from the superior principal compressive and superior principal tensile regions were determined by gas chromatography. A total of 42 individual fatty acids were detected at varying concentrations with significant differences between subchondral bone from OA subjects, subchondral bone from #NOF subjects and subchondral bone from CTRL subjects, as well as between the superior principal compressive and superior principal tensile regions (for saturated fats only). Subchondral bone from OA subjects had higher total n-6 (OA = 10.89 +/- 3.17, #NOF = 11.11 +/- 1.83, CTRL = 8.32 +/- 2.05, p = 0.008) and total n-3 (OA = 1.34 +/- 0.38, #NOF = 1.19 +/- 0.18, CTRL = 1.15 +/- 0.48, p = 0.011) percentages than subchondral bone from #NOF subjects and subchondral bone from CTRL subjects, and there was no difference in the n-6:n-3 ratio, nor within the percentage of n-9 fatty acids. Arachidonic acid (OA = 0.42 +/- 0.16, #NOF = 026 +/- 0.06, CTRL = 0.28 +/- 0.06, p = 0.01), and gamma-linolenic acid (OA = 0.11 +/- 0.03, #NOF = 0.05 +/- 0.02, CTRL = 0.04 +/- 0.02, p<0.001) were higher in subchondral bone from OA subjects than subchondral bone from #NOF subjects and subchondral bone from CTRL subjects. In conclusion, there is a wide diversity of fatty acids in cancellous bone matrix from the femoral heads of OA and #NOF, suggesting they may have regulatory effects on inflammatory processes, and their metabolites. This article is part of a Special Issue entitled "Osteoarthritis". (C) 2012 Elsevier Inc. All rights reserved.
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TI A fully automated trabecular bone structural analysis tool based on T2*-weighted magnetic resonance imaging
SO COMPUTERIZED MEDICAL IMAGING AND GRAPHICS
LA English
DT Article
DE Segmentation; Active contour; Cancellous bone; Articular joint; Quantitative MRI; Osteoporosis; Osteoarthritis
ID level-set approach; of-the-art; in-vivo; distal radius; mechanical-property; decay characteristics; cartilage interface; articular-cartilage; relaxation-times; medical imagery
AB One major source affecting the precision of bone structure analysis in quantitative magnetic resonance imaging (qMRI) is inter- and intraoperator variability, inherent in delineating and tracing regions of interest along longitudinal studies. In this paper an automated analysis tool, featuring bone marrow segmentation, region of interest generation, and characterization of cancellous bone of articular joints is presented. In evaluation studies conducted at the knee joint the novel analysis tool significantly decreased the standard error of measurement and improved the sensitivity in detecting minor structural changes. It further eliminated the need of time-consuming user interaction, and thereby increasing reproducibility. (C) 2011 Elsevier Ltd. All rights reserved.
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TI Targeting Bone Alleviates Osteoarthritis in Osteopenic Mice and Modulates Cartilage Catabolism
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DT Article
ID estrogen-receptor-alpha; subchondral bone; articular-cartilage; knee osteoarthritis; gene haplotype; murine model; ii collagen; degradation; osteoprotegerin; expression
AB Objective: Subchondral bone modifications occur early in the development of osteoarthritis (OA). The level of bone resorption might impact cartilage remodeling. We therefore assessed the in vivo and in vitro effects of targeting bone resorption in OA and cartilage metabolism. Methods: OA was induced by meniscectomy (MNX) in ovariectomized osteopenic mice (OP) treated with estradiol (E2), pamidronate (PAM), or phosphate buffered saline (PBS) for 6 weeks. We assessed the subchondral bone and cartilage structure and the expression of cartilage matrix proteases. To assess the involvement of bone soluble factors in cartilage metabolism, supernatant of human bone explants pre-treated with E2 or PAM were transferred to cartilage explants to assess proteoglycan release and aggrecan

cleavage. OPG/RANKL mRNA expression was assessed in bone explants by real-time quantitative PCR. The role of osteoprotegerin (OPG) in the bone-cartilage crosstalk was tested using an OPG neutralizing antibody. Results: Bone mineral density of OP mice and osteoclast number were restored by E2 and PAM ($p<0.05$). In OP mice, E2 and PAM decreased ADAMTS-4 and -5 expression, while only PAM markedly reduced OA compared to PBS (2.0+/-0.63 vs 5.2+/-0.95; $p<0.05$). OPG/RANKL mRNA was increased in human bone explants treated with both drugs (2.2-3.7-fold). Moreover, supernatants from bone explants cultured with E2 or PAM reduced aggrecan cleavage and cartilage proteoglycan release (73+/-8.0% and 80+/-22% of control, respectively, $p<0.05$). This effect was reversed with osteoprotegerin blockade. Conclusion: The inhibition of bone resorption by pamidronate in osteopenic mice alleviates the histological OA score with a reduction in the expression of aggrecanases. Bone soluble factors, such as osteoprotegerin, impact the cartilage response to catabolic factors. This study further highlights the importance of subchondral bone in the regulation of joint cartilage damage in OA.

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AF Lazarus, Martin L.
TI Imaging of Femoroacetabular Impingement and Acetabular Labral Tears of the Hip
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NR 136
TC 2
Z9 2
U1 0
U2 5
PU MOSBY-ELSEVIER
PI NEW YORK
PA 360 PARK AVENUE SOUTH, NEW YORK, NY 10010-1710 USA
SN 0011-5029
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J9 DM-DIS MON
JI DM-Dis.-a-Mon.
PD SEP 15
PY 2012
VL 58
IS 9
BP 495
EP 542
DI 10.1016/j.disamonth.2012.06.004
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WC Medicine, General & Internal
SC General & Internal Medicine
GA 992RF
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PT J
AU Haugen, IK
Felson, DT
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Wang, K
Aliabadi, P
Guermazi, A
Roemer, FW
Neogi, T
AF Haugen, Ida Kristin
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Wang, Ke
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TI The association between erosive hand osteoarthritis and subchondral bone attrition of the knee: the Framingham Osteoarthritis Study
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID mineral density; general-population; women; osteoporosis; prevalence; mri
AB Objective To examine whether erosive hand osteoarthritis (OA) is associated with knee subchondral bone attrition (SBA) and systemic bone mineral density (BMD). Methods Associations of MRI-defined knee SBA with radiographic erosive hand OA were evaluated in 1253 Framingham participants using logistic regression with generalised estimating equations. We also examined the association between the number of erosive OA finger joints and SBA adjusted for the number of non-erosive OA finger joints. Associations between erosive hand OA and femoral neck BMD were explored in 2236 participants with linear regression. Analyses were adjusted for age, sex and body mass index. Results Participants with erosive hand OA had increased odds of knee SBA (OR = 1.60, 95% CI 1.07 to 2.38). The relation between the number of erosive OA finger joints and SBA became non-significant when adjusted for the number of non-erosive OA joints as a proxy for the burden of disease. There was a non-significant trend towards higher BMD in erosive hand OA compared with participants without hand OA. Conclusions Erosive hand OA was associated with knee SBA, but the relation might be best explained by a heightened burden of disease. No significant relation of erosive hand OA with BMD was found.
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NR 19
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U1 0
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WC Rheumatology
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PT J
AU Yu, DG
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AF Yu, De-gang
Yu, Bo
Mao, Yuan-qing
Zhao, Xin
Wang, Xiao-qing
Ding, Hui-feng
Cao, Lei
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Nie, Shao-bo
Liu, Shen
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TI Efficacy of zoledronic acid in treatment of teoarthritis is dependent on the

disease progression stage in rat medial meniscal tear model
SO ACTA PHARMACOLOGICA SINICA
LA English
DT Article
DE osteoarthritis; zoledronic acid; bisphosphonate; pain; subchondral bone; rat medial meniscal tear model
ID subchondral bone; knee osteoarthritis; articular-cartilage; treating osteoarthritis; osteochondral junction; pain; joint; symptoms; osteoporosis; pathogenesis
AB Aim: To investigate whether the stage of osteoarthritis (OA) progression influenced the efficacy of the third-generation bisphosphonate zoledronic acid in a rat medial meniscal tear model. Methods: Medial meniscal tear (MMT) was surgically induced in adult male Sprague Dawley rats. Zoledronic acid (ZOL, 100 mu g/kg, sc, twice a week) was administered starting immediately, early (from 4 weeks) or late (from 8 weeks) after OA induction. The degeneration of articular cartilage was evaluated with toluidine blue O staining. Subchondral bone remodeling was evaluated with X-ray micro-CT scanning. Joint pain was measured with respect to weight-bearing asymmetry. Calcitonin gene-related peptide (CGRP) expression in dorsal root ganglia (DRGs) was examined using immunofluorescence analysis. The afferent neurons in DRGs innervating the joint were identified by retrograde labeling with fluorogold. Results: Progressive cartilage loss was observed during 12 weeks after OA induction. Subchondral bone remodeling manifested as increased bone resorption at early stage (4 weeks), but as increased bone accretion at advanced stages (8 weeks). Immediately and early ZOL administration significantly improved subchondral microstructural parameters, attenuated cartilage degeneration, reduced weight-bearing asymmetry and CGRP expression, whereas the late ZOL administration had no significant effects. Conclusion: The stage of OA progression influences the efficacy of ZOL in treating joint degeneration and pain. To obtain the maximum efficacy, bisphosphonate treatment should be initiated in rat with early stages of OA pathogenesis.
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NR 39
TC 34
Z9 40
U1 1
U2 23
PU ACTA PHARMACOLOGICA SINICA
PI SHANGHAI
PA 294 TAI-YUAN RD, SHANGHAI, 200031, PEOPLES R CHINA
SN 1671-4083
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J9 ACTA PHARMACOL SIN
JI Acta Pharmacol. Sin.
PD JUL 15
PY 2012
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IS 7
BP 924
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DI 10.1038/aps.2012.28
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WC Chemistry, Multidisciplinary; Pharmacology & Pharmacy
SC Chemistry; Pharmacology & Pharmacy
GA 970BM
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AU Taylor, AM
Boyde, A
Davidson, JS
Jarvis, JC
Ranganath, LR
Gallagher, JA
AF Taylor, A. M.
Boyde, A.
Davidson, J. S.
Jarvis, J. C.
Ranganath, L. R.
Gallagher, J. A.
TI IDENTIFICATION OF TRABECULAR EXCRESCENCES, NOVEL MICROANATOMICAL STRUCTURES, PRESENT IN BONE IN OSTEOARTHROPATHIES
SO EUROPEAN CELLS & MATERIALS
LA English
DT Article
DE Bone remodelling; scanning electron microscopy; osteoarthritis; alkaptonuria
ID scanning-electron-microscopy; ochronotic arthropathy; calcified cartilage; subchondral bone; osteoarthritis; osteoporosis; progression
AB It is widely held that bone architecture is finely regulated in accordance with homeostatic requirements. Aberrant remodelling (hyperdensification and/or cyst formation in the immediately subchondral region) has previously been described in bone underlying cartilage in arthropathies. The present study examined the trabecular architecture of samples of bone, initially in the severe osteoarthropathy of alkaptonuria, but subsequently in osteoarthritis using a combination of light microscopy, 3D scanning electron microscopy and quantitative backscattered electron scanning electron microscopy. We report an extraordinary and previously unrecognised bone phenotype in both disorders, including novel microanatomical structures. The underlying subchondral trabecular bone contained idiosyncratic architecture. Trabecular surfaces had numerous outgrowths that we have termed "trabecular excrescences", of which three distinct types were recognised. The first type arose from incomplete resorption of branching secondary trabeculae arising from the deposition of immature (woven) bone in prior marrow space. These were characterised by very deeply scalloped surfaces and rugged edges. The second type had arisen in a similar way but been smoothed over by new bone deposition. The third type, which resembled coarse stucco, probably arises from resting surfaces that had been focally reactivated. These were poorly integrated with the prior trabecular wall. We propose that these distinctive microanatomical structures are indicative of abnormal osteoclast/osteoblast modelling in osteoarthropathies, possibly secondary to altered mechanical loading or other aberrant signalling. Identification of the mechanisms underlying the formation of trabecular

excrescences will contribute to a better understanding of the role of aberrant bone remodelling in arthropathies and development of new therapeutic strategies.
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NR 26
TC 23
Z9 25
U1 0
U2 8
PU AO RESEARCH INSTITUTE DAVOS-ARI
PI DAVOS
PA CLAVADELERSTRASSE 8, DAVOS, CH 7270, SWITZERLAND
SN 1473-2262
EI
J9 EUR CELLS MATER
JI Eur. Cells Mater.
PD JAN-JUN 15
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VL 23
IS
BP 300
EP 309
DI 10.22203/eCM.v023a23
PG 10
WC Cell & Tissue Engineering; Engineering, Biomedical; Materials Science, Biomaterials; Orthopedics
SC Cell Biology; Engineering; Materials Science; Orthopedics
GA 989IT
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PT J
AU Zhou, SH
Glowacki, J
Kim, SW
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Geng, S
Mueller, SM
Shen, LX
Bleiberg, I
LeBoff, MS
AF Zhou, Shuanhu
Glowacki, Julie

Kim, Sung Won
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Bleiberg, Ilan
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TI Clinical characteristics influence in vitro action of 1,25-dihydroxyvitamin D3 in human marrow stromal cells
SO JOURNAL OF BONE AND MINERAL RESEARCH
LA English
DT Article
DE MARROW STROMAL CELLS; OSTEOBLAST DIFFERENTIATION; AGE; VITAMIN D; eGFR
ID human bone-marrow; mesenchymal stem-cells; vitamin-d deficiency; age-related decline; 3-dimensional collagen sponges; osteogenic differentiation; parathyroid-hormone; osteoporosis; growth; women
AB Vitamin D is important for bone health, with low vitamin D levels being associated with skeletal fragility and fractures. Among its other biological activities, 1,25-dihydroxyvitamin D (1,25(OH)2D), stimulates the in vitro differentiation of human marrow stromal cells (hMSCs) to osteoblasts, which can be monitored by increases in alkaline phosphatase enzyme activity or osteocalcin gene expression. In this study, we tested the hypotheses that age and clinical attributes of subjects influence in vitro responsiveness of hMSCs to 1,25(OH)2D3. In a cohort of subjects whose hMSCs were isolated from bone marrow discarded during hip replacement surgery for osteoarthritis, there were significant inverse correlations with age for bone mineral density, renal function, body mass index, fat mass index, and lean mass index (n?=?3653). There were significant correlations with serum 25(OH)D for serum parathyroid hormone (PTH), body mass index, fat mass index, and lean mass index (n?=?4750). In vivoin vitro correlation analyses indicated that there were significantly greater in vitro effects of 1,25(OH)2D3 to stimulate osteoblast differentiation in hMSCs obtained from subjects who were younger than 65 years of age, or who had serum 25(OH)D = 20?ng/mL, elevated serum PTH, or better renal function, assessed by estimated glomerular filtration rate. The greater in vitro stimulation of osteoblast differentiation by 1,25(OH)2D3 in hMSCs from vitamin D-deficient subjects suggests that vitamin D replenishment may lead to more vigorous bone formation in subjects at risk. (c) 2012 American Society for Bone and Mineral Research.
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NR 50
TC 40
Z9 52
U1 0
U2 13
PU WILEY-BLACKWELL
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0884-0431
EI
J9 J BONE MINER RES
JI J. Bone Miner. Res.
PD SEP 15
PY 2012
VL 27
IS 9
BP 1992

EP 2000
DI 10.1002/jbmr.1655
PG 9
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 993VV
UT WOS:000307889000016
PM 22576852
DA 2026-02-10
ER

PT J
AU Saunders, J
Ding, C
Cicuttini, FM
Jones, G
AF Saunders, J.
Ding, C.
Cicuttini, Flavia M.
Jones, G.
TI Radiographic osteoarthritis and pain are independent predictors of knee cartilage loss: a prospective study
SO INTERNAL MEDICINE JOURNAL
LA English
DT Article
DE radiograph; MRI; cartilage; trial
ID older-adult cohort; subchondral bone; progression; volume; joint; extrusion; women; men
AB Background: There is controversy about whether pain and radiographic osteoarthritis (ROA) predict subsequent cartilage loss. The aim of this study was to describe the relationship between ROA, pain and cartilage loss in the knee. Methods: We studied randomly selected subjects at baseline and approximately 2.9 years later (n = 399). The presence of ROA was assessed at baseline with a standing anteroposterior semiflexed radiograph scored using the Osteoarthritis Research Society International atlas for osteophytes (OP) and joint space narrowing (JSN). Pain was assessed by the Western Ontario McMaster Osteoarthritis Index. Subjects' medial and lateral tibial cartilage volumes were determined by magnetic resonance imaging at both time points. Results: In cross-sectional analysis, both medial and lateral tibial cartilage volumes were lower in those with ROA. Any medial ROA predicted medial tibial cartilage loss (3.2% (standard deviation (SD) 5.6) vs 1.9% (SD 5.3) per annum) while any lateral ROA predicted both medial (4.0% (SD 6.0) vs 2.2% (SD 5.3) per annum) and lateral (3.5% (SD 5.8) vs 1.6% (SD 4.2) per annum) tibial cartilage loss (all $P < 0.05$). In multivariate analysis, JSN and OP at both medial and lateral sites had independent dose- response associations with tibial cartilage loss

at both sites. Pain was an independent predictor of lateral, but not medial, tibial cartilage loss after taking ROA into account. Conclusions: Subjects with ROA (either JSN or OP) and, to a lesser extent, pain lose cartilage faster than subjects without ROA and the more severe the ROA the greater the rate of loss. These findings have implications for the design of clinical trials.
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NR 31
TC 29
Z9 32
U1 0
U2 4
PU WILEY-BLACKWELL
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 1444-0903
EI 1445-5994
J9 INTERN MED J
JI Intern. Med. J.
PD MAR 15
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VL 42
IS 3
BP 274
EP 280
DI 10.1111/j.1445-5994.2011.02438.x
PG 7
WC Medicine, General & Internal
SC General & Internal Medicine
GA 911LE
UT WOS:000301717500014
PM 21299779
DA 2026-02-10
ER

PT J
AU Roux, C
Richette, P
AF Roux, C.

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TI Impact of treatments for osteoporosis on osteoarthritis progression
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Anti-osteoporotic treatments; Bone remodeling; Osteoarthritis; Osteoporosis; Sub-chondral bone
ID knee osteoarthritis; inhibition; risedronate; alendronate; symptoms; model; strontium; markers; rabbit
AB Subchondral bone is involved in the development of osteoarthritis, with an excess in bone resorption at an early stage and increased bone formation thereafter. Experimental and observational studies suggest that acting on bone can change progression of osteoarthritis. Clinical prospective controlled studies failed to confirm this result. Appropriate identification of patients at high risk of developing cartilage deterioration is a key issue for the analysis of impact of treatments for osteoporosis on osteoarthritis progression.
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NR 17
TC 10
Z9 11
U1 1
U2 17
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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IS
BP S881
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DI 10.1007/s00198-012-2168-6
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 248TD
UT WOS:000326725200009
PM 23179573
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ER

PT J
AU Brennan, SL
Cicuttini, FM
Nicholson, GC
Pasco, JA
Kotowicz, MA
Wluka, A
AF Brennan, Sharon Lee
Cicuttini, Flavia M.
Nicholson, Geoff C.

Pasco, Julie A.
Kotowicz, Mark A.
Wluka, Anita
TI Endogenous parathyroid hormone is associated with reduced cartilage volume in vivo in a population-based sample of adult women
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID articular-cartilage; pth/pthrp receptor; osteoarthritis; bone; sensitivity; degradation; females; disease
AB Objectives Animal and in vitro studies suggest that parathyroid hormone (PTH) may affect articular cartilage. However, little is known of the relationship between PTH and human joints in vivo. Design Longitudinal. Setting Barwon Statistical Division, Victoria, Australia. Participants 101 asymptomatic women aged 35-49 years (2007-2009) and without clinical knee osteoarthritis, selected from the population-based Geelong Osteoporosis Study. Risk factors Blood samples obtained 10 years before (1994-1997) and stored at -80 degrees C for random batch analyses. Serum intact PTH was quantified by chemiluminescent enzyme assay. Serum 25-hydroxyvitamin D (25(OH) D) was assayed using equilibrium radioimmunoassay. Models were adjusted for age, bone area and body mass index; further adjustment was made for 25(OH) D and calcium supplementation. Outcome Knee cartilage volume, measured by MRI. Results A higher lnPTH was associated with reduced medial-but not lateral-cartilage volume (regression coefficient +/- SD, p value: -72.2 +/- 33.6 mm(3), p=0.03) after adjustment for age, body mass index and bone area. Further sinusoidal adjustment (-80.8 +/- 34.4 mm(3), p=0.02) and 25(OH) D with seasonal adjustment (-72.7 +/- 35.1 mm(3), p=0.04), calcium supplementation and prevalent osteophytes did not affect the results. Conclusions A higher lnPTH might be detrimental to knee cartilage in vivo. Animal studies suggest that higher PTH concentrations reduce the healing ability of cartilage following minor injury. This may be apparent in the presence of increased loading, which occurs in the medial compartment, placing the medial cartilage at higher risk for injury.
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NR 20
TC 4
Z9 5
U1 0
U2 6
PU BMJ PUBLISHING GROUP
PI LONDON
PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR, ENGLAND
SN 0003-4967
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J9 ANN RHEUM DIS

JI Ann. Rheum. Dis.
PD JUN 15
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IS 6
BP 1000
EP 1003
DI 10.1136/annrheumdis-2011-200957
PG 4
WC Rheumatology
SC Rheumatology
GA 938TQ
UT WOS:000303756400037
PM 22355038
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ER

PT J
AU Martínez-Calatrava, MJ
Prieto-Potín, I
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Herrero-Beaumont, Gabriel
TI RANKL synthesized by articular chondrocytes contributes to juxta-articular bone loss in chronic arthritis
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Article
ID kappa-b ligand; osteoclast differentiation factor; collagen-induced arthritis; rheumatoid-arthritis; receptor activator; synovial tissue; osteoprotegerin ligand; inflammatory arthritis; in-vitro; t-cells
AB Introduction: The receptor activator nuclear factor-kappaB ligand (RANKL) diffuses from articular cartilage to subchondral bone. However, the role of chondrocyte-synthesized RANKL in rheumatoid arthritis-associated juxta-articular bone loss has not yet been explored. This study aimed to determine whether RANKL produced by chondrocytes induces osteoclastogenesis and juxta-articular bone loss associated with chronic arthritis. Methods: Chronic antigen-induced

arthritis (AIA) was induced in New Zealand (NZ) rabbits. Osteoarthritis (OA) and control groups were simultaneously studied. Dual X-ray absorptiometry of subchondral knee bone was performed before sacrifice. Histological analysis and protein expression of RANKL and osteoprotegerin (OPG) were evaluated in joint tissues. Co-cultures of human OA articular chondrocytes with peripheral blood mononuclear cells (PBMCs) from healthy donors were stimulated with macrophage-colony stimulating factor (M-CSF) and prostaglandin E-2 (PGE(2)), then further stained with tartrate-resistant acid phosphatase. Results: Subchondral bone loss was confirmed in AIA rabbits when compared with controls. The expression of RANKL, OPG and RANKL/OPG ratio in cartilage were increased in AIA compared to control animals, although this pattern was not seen in synovium. Furthermore, RANKL expression and RANKL/OPG ratio were inversely related to subchondral bone mineral density. RANKL expression was observed throughout all cartilage zones of rabbits and was specially increased in the calcified cartilage of AIA animals. Co-cultures demonstrated that PGE(2)-stimulated human chondrocytes, which produce RANKL, also induce osteoclasts differentiation from PBMCs. Conclusions: Chondrocyte-synthesized RANKL may contribute to the development of juxta-articular osteoporosis associated with chronic arthritis, by enhancing osteoclastogenesis. These results point out a new mechanism of bone loss in patients with rheumatoid arthritis.
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CR Benito MJ, 2000, ARTHRITIS RHEUM, V43, P311, DOI 10.1002/1529-0131(200002)43:2<311::AID-ANR10>3.0.CO;2-E
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NR 48
TC 49
Z9 61
U1 0
U2 9
PU BIOMED CENTRAL LTD
PI LONDON
PA 236 GRAYS INN RD, FLOOR 6, LONDON WC1X 8HL, ENGLAND
SN 1478-6354
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J9 ARTHRITIS RES THER
JI Arthritis Res. Ther.
PD JUN 15
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IS 3
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DI 10.1186/ar3884
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WC Rheumatology
SC Rheumatology
GA 090IL
UT WOS:000314972600051
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PT J
AU Jaiprakash, A
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AF Jaiprakash, Anjali
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Crawford, Ross
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TI Phenotypic Characterization of Osteoarthritic Osteocytes from the Sclerotic Zones: A Possible Pathological Role in Subchondral Bone Sclerosis
SO INTERNATIONAL JOURNAL OF BIOLOGICAL SCIENCES
LA English
DT Article
DE osteocyte; osteoarthritis; subchondral bone; sclerosis; DMP1 and SOST
ID matrix protein-1 dmp1; articular-cartilage; increased expression; osteoblasts; cells; apoptosis; osteoporosis; microcracks; osteoclasts; resorption
AB Subchondral bone sclerosis is a well-recognised manifestation of osteoarthritis (OA). The osteocyte cell network is now considered to be central to the regulation of bone homeostasis; however, it is not known whether the integrity of the osteocyte cell network is altered in OA patients. The aim of this study was to investigate OA osteocyte phenotypic changes and its potential role in OA subchondral bone pathogenesis. The morphological and phenotypic changes of osteocytes in OA samples were investigated by micro-CT, SEM, histology, immunohistochemistry, TRAP staining, apoptosis assay and real-time PCR studies. We demonstrated that in OA subchondral bone, the osteocyte morphology was altered showing rough and rounded cell body with fewer and disorganized dendrites compared with the osteocytes in control samples. OA osteocyte also showed dysregulated expression of osteocyte markers, apoptosis, and degradative enzymes, indicating that the phenotypical changes in OA osteocytes were accompanied with OA subchondral bone remodelling (increased osteoblast and osteoclast activity) and increased bone volume with altered mineral content. Significant alteration of osteocytes identified in OA samples indicates a potential regulatory role of osteocytes in subchondral bone remodelling and mineral metabolism during OA pathogenesis.
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U1 1
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WC Biochemistry & Molecular Biology; Biology
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AU Charran, AK
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Cassar-Pullicino, V. N.
TI Destructive discovertebral degenerative disease of the lumbar spine
SO SKELETAL RADIOLOGY
LA English
DT Article
DE Lumbar spine; Bone debris; Discovertebral osteoarthritis; Rapidly progressive osteoarthritis; Destructive osteoarthritis; Osteoporosis
ID subchondral insufficiency fracture; rheumatoid-arthritis; hip; osteoarthritis; joint; head
AB The uncommon variant of degenerative hip joint disease, termed rapidly progressive osteoarthritis, and highlighted by severe joint space loss and osteochondral disintegration, is well established. We present a similar unusual subset in the lumbar spine termed destructive discovertebral degenerative disease (DDDD) with radiological features of vertebral malalignment, severe disc resorption, and "bone sand" formation secondary to vertebral fragmentation. Co-existing metabolic bone disease is likely to promote the development of DDDD of the lumbar spine, which presents with back pain and sciatica due to nerve root compression by the "bone sand" in the epidural space. MRI and CT play a complimentary role in making the diagnosis.
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NR 19
TC 4
Z9 5
U1 0
U2 3
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0364-2348
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J9 SKELETAL RADIOL
JI Skeletal Radiol.
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WC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging

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PT J
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AF Yoshimura, Noriko
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TI Does mild cognitive impairment affect the occurrence of radiographic knee osteoarthritis? A 3-year follow-up in the ROAD study
SO BMJ OPEN
LA English
DT Article
ID mini-mental state; risk-factors; progression; population; dementia; disease; cohort; life; ad
AB Objective: To determine whether mild cognitive impairment (MCI) increases the risk of occurrence or progression of radiographic knee osteoarthritis (KOA) in a general population. Design: Population-based cohort study. Setting: Residents in mountain and seaside areas of Wakayama Prefecture, Japan. Participants: 1690 participants (596 men, 1094 women; mean age 65.2 years old) were enrolled from the large-scale cohort for the Research on Osteoarthritis (OA)/osteoporosis Against Disability (ROAD) study initiated in 2005 to investigate epidemiological features of OA in Japan. Of these, 1384 individuals (81.9%; 466 men, 918 women) completed the second survey including knee radiography 3 years later. Primary outcome measures: Radiographic KOA was defined as Kellgren-Lawrence (KL) grade >= 2 using paired x-ray films. Incidence of KOA during follow-up defined on radiographs as KL grade >= 2, progression of KOA defined as a higher KL grade (either knee) at follow-up compared with baseline. MCI defined as a summary mini-mental state examination (MMSE) score <= 23. Associations between MCI and incidence or progression of KOA were analysed. Results: The annual cumulative incidence of

KOA was 3.3%; for progression of OA it was 8.0%. On logistic regression analysis adjusted for age, gender, regional differences, body mass index, grip strength (worse side), smoking, alcohol consumption, regular exercise and history of knee injury, baseline MMSE summary score was significantly associated with the incidence of KOA (+ 1 MMSE score; OR 0.83, p=0.010). Baseline MCI was also significantly associated with the incidence of KOA (vs non-occurrence of KOA; OR 4.90, p=0.027). There was no significant association between MMSE scores, the presence of MCI and progression of KOA (+ 1 MMSE score; OR 0.96, p=0.232; vs non-progression of KOA; OR 1.38, p=0.416). Conclusions: MCI significantly increases the risk of incident radiographic KOA, but not the progression of KOA.
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NR 23
TC 7
Z9 9
U1 0
U2 7
PU BMJ PUBLISHING GROUP
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PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR, ENGLAND
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WC Medicine, General & Internal
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AU Brennan, SL
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AF Brennan, Sharon L.
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TI Cross-sectional analysis of association between socioeconomic status and utilization of primary total hip joint replacements 2006-7: Australian Orthopaedic Association National Joint Replacement Registry
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
DE Hip joint replacement; Socioeconomic status; Utilization; Australia
ID elective total hip; knee osteoarthritis; medicare beneficiary; occupational activity; geelong-osteoporosis; physical demands; united-states; adult women; rates; population
AB Background: The utilization of total hip replacement (THR) surgery is rapidly increasing, however few data examine whether these procedures are associated with socioeconomic status (SES) within Australia. This study examined primary THR across SES for both genders for the Barwon Statistical Division (BSD) of Victoria, Australia. Methods: Using the Australian Orthopaedic Association National Joint Replacement Registry data for 2006-7, primary THR with a diagnosis of osteoarthritis (OA) among residents of the BSD was ascertained. The Index of Relative Socioeconomic Disadvantage was used to measure SES; determined by matching residential addresses with Australian Bureau of Statistics census data. The data were categorised into quintiles; quintile 1 indicating the most disadvantaged. Age-and sex-specific rates of primary THR per 1,000 person years were reported for 10-year age bands using the total population at risk. Results: Females accounted for 46.9% of the 642 primary THR performed during 2006-7. THR utilization per

1,000 person years was 1.9 for males and 1.5 for females. The highest utilization of primary THR was observed in those aged 70-79 years (males 6.1, and females 5.4 per 1,000 person years). Overall, the U-shaped pattern of THR across SES gave the appearance of bimodality for both males and females, whereby rates were greater for both the most disadvantaged and least disadvantaged groups. Conclusions: Further work on a larger scale is required to determine whether relationships between SES and THR utilization for the diagnosis of OA is attributable to lifestyle factors related to SES, or alternatively reflects geographic and health system biases. Identifying contributing factors associated with SES may enhance resource planning and enable more effective and focussed preventive strategies for hip OA.
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NR 48
TC 10
Z9 12
U1 0
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TI Relative and Combined Effects of Ethanol and Protein Deficiency on Bone Manganese and Copper
SO BIOLOGICAL TRACE ELEMENT RESEARCH
LA English
DT Article
DE Manganese; Copper; Ethanol; Malnutrition; Bone
ID postmenopausal women; dietary manganese; mineral density; trace minerals; zinc; osteoporosis; metabolism; magnesium; selenium; rats
AB Both manganese and copper may affect bone synthesis. Bone content of both metals can be altered in alcoholics, although controversy exists regarding this matter. To analyse the relative and combined effects of ethanol and a low protein diet on bone copper and manganese, and their relationships with bone structure and metabolism, including trabecular bone mass (TBM), osteoid area (OA), osteocalcin (OCN), insulin-like growth factor-1 (IGF-1), parathyroid hormone (PTH), urinary hydroxyproline (uHP) and vitamin D. Adult male Sprague-Dawley rats were divided into four groups. The control rats received a 18% protein-containing diet; a second group, an isocaloric, 2% protein-containing diet; a third one, an isocaloric, 36% ethanol-containing diet and a fourth, an isocaloric diet containing 2% protein and 36% ethanol. After sacrifice, TBM and OA were histomorphometrically assessed; bone and serum manganese and copper were determined by atomic absorption spectrophotometry, and serum OCN, IGF-1, PTH, uHP and vitamin D by radioimmunoassay. Ethanol-fed rats showed decreased TBM and bone manganese. Significant relationships existed between bone manganese and TBM, serum IGF-1 and OCN. Ethanol leads to a decrease in bone manganese, related to decreased bone mass and bone synthesis. No alterations were found in bone copper.
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TI Evidence for the dysregulated expression of TWIST1, TGFβ1 and SMAD3 in differentiating osteoblasts from primary hip osteoarthritis patients
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Hip osteoarthritis; Primary osteoblast; Gene expression; Energy-dispersive X-ray spectroscopy; Mineral composition; Mineralisation
ID subchondral bone plate; human trabecular bone; femoral-head; gene-expression; mechanical-property; mineral-content; osteoporosis; beta; cells; wnt
AB Objective: This study compared human primary osteoblasts derived from hip osteoarthritis (OA) cases against controls (CTLs) to investigate candidate OA disease genes, twist homologue 1 (TWIST1), wingless MMTV integration site family member 5B (WNT5B), transforming growth factor-beta (TGF beta 1) and SMAD family member 3 (SMAD3), during osteoblast differentiation, relative to calcium apposition and elemental mineral composition. Materials & methods: Primary osteoblast cultures were generated from intertrochanteric trabecular bone samples from five female primary hip OA cases and five age-matched female CTLs. During a 42-day differentiation time-course, alizarin red stains, energy-dispersive X-ray spectroscopy and real-time RT-polymerase chain reaction (PCR) were used to quantify calcium, elemental composition and gene expression, respectively. Data were analysed using linear mixed effects models and Pearson correlation matrices. Results: Significant differences, correlations and associations were found in OA and CTL osteoblasts between gene and mineral measures. The calcium: phosphorous (Ca:P) ratio was significantly more varied in OA compared to CTL. Calcium apposition, mineral composition as well as TWIST1 and TGF beta 1 mRNA expression changed significantly over time. TWIST1 mRNA expression was elevated and correlated with SMAD3 mRNA levels in the OA cohort during the time-course. Associations were observed between tissue non-specific alkaline phosphatase (TNAP), osteocalcin (OCN), TWIST1, TGF beta 1, SMAD3 mRNA levels and mineral measures in OA against CTL. Temporal differences between SMAD3 mRNA expression and mineral composition were also found in OA. Conclusions: Dysregulated expression of TWIST1, TGF beta 1 and SMAD3 mRNA observed in OA bone is reflected in the functionality of the osteoblast when these cells are cultured ex vivo. The results presented here are consistent with at least part of the aetiology of primary hip OA deriving from altered intrinsic properties of the osteoblast. (C) 2012 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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Kim, Tae Hwan
TI Osteoporotic profiles in elderly patients with symptomatic lumbar spinal canal stenosis
SO INDIAN JOURNAL OF ORTHOPAEDICS
LA English
DT Article
DE Bone mineral density; bone turnover marker; hypovitaminosis D; lumbar spinal stenosis; osteoporosis
ID quality-of-life; bone-mineral density; vitamin-d; postmenopausal women; fracture risk; hip fracture; mortality; turnover; impact; osteoarthritis
AB Background: The osteoporosis and lumbar canal stenosis, in elderly patients are under diagnosed and under reported. We report a cross sectional study to demonstrate the osteoporotic profile in patients with lumbar spinal stenosis (LSS) and to determine the proportion of patients with LSS who need to be treated for osteoporosis. Materials and Methods: One hundred and six postmenopausal

patients with symptomatic LSS were evaluated for osteoporotic profile, which included lumbar and hip bone mineral density (BMD), serum vitamin D concentration, bone resorption and formation markers. Demographic and disease related variables were analyzed to identify the association with the risk of osteoporosis or osteopenia. Statistical analysis used were multivariate logistic regression with a forward stepwise procedure. Results: Twenty-four patients (22.6%) had osteoporosis and 60 (56.6%) had osteopenia. Overall, 84 patients (79.2%) with symptomatic LSS had osteoporosis or osteopenia. Fifty-nine patients (55.6%) had hypovitaminosis D. All bone turnover makers [alkaline phosphatase, osteocalcin, urinary-N-terminal telopeptide (u-NTx)] were demonstrated to be within normal range. Only age was associated with the risk of osteoporosis or osteopenia in the hip region. In the lumbar spine, all variables were not associated with osteoporosis or osteopenia. 44 patients (41.5%) required treatment for osteoporosis as per risk factors for osteoporosis. According to the guidelines from the Health Insurance Review Agency, however, only 20 patients (18.8% required) qualified for reimbursement for osteoporosis medications. Conclusions: LSS is associated with osteopenia, osteoporosis, and hypovitaminosis D, which should prompt careful screening and treatment in cases of osteoporosis and osteoarthritis.
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NR 36
TC 23
Z9 24
U1 0
U2 3
PU MEDKNOW PUBLICATIONS
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EI
J9 INDIAN J ORTHOP
JI Indian J. Orthop.
PD MAY-JUN 15
PY 2012
VL 46
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BP 279
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DI 10.4103/0019-5413.96379

PG 6
WC Orthopedics
SC Orthopedics
GA 958XD
UT WOS:000305273400005
PM 22719113
DA 2026-02-10
ER

PT J
AU Loke, YK
Hinz, I
Wang, X
Rowlands, G
Scott, D
Salter, C
AF Loke, Yoon K.
Hinz, Ina
Wang, Xia
Rowlands, Gill
Scott, David
Salter, Charlotte
TI Impact of Health Literacy in Patients with Chronic Musculoskeletal Disease-Systematic Review
SO PLOS ONE
LA English
DT Review
ID older-adults; arthritis; communication; outcm
AB Objectives: To estimate the prevalence of low health literacy, and evaluate the impact of low health literacy on outcomes in patients with chronic musculoskeletal conditions. Data Sources: We searched Embase, Pubmed, PsycInfo, and CINAHL in January 2011 for relevant studies, restricted to English-language articles. Study Selection and Data Extraction: Studies were included if they measured health literacy and/or reported on the link between outcomes and health literacy levels in patients with osteoporosis, osteoarthritis, or rheumatoid arthritis. We assessed risk of bias from participant selection, methods of measuring health literacy and functional outcomes, missing data, and potential for confounding. Data Synthesis: We reviewed 1863 citations and judged 8 studies to be relevant. Most were cross-sectional in nature, and five were based in the United States. Diversity in measurements, participant characteristics, and settings meant that results had to be synthesized narratively. Prevalence of low health literacy varied from 7% to 42%. Of the five studies that reported on musculoskeletal outcomes, only one showed an association (unadjusted) between low health literacy and greater pain and limitations in physical functioning. However, other studies, including those with

multivariate analyses, found no significant relationship between health literacy and measures of pain or disease specific questionnaires. One clinical trial found short-term improvements in the mental health of patients with musculoskeletal conditions after an intervention to improve health literacy. Limitations: Most of the studies were cross-sectional in nature, which precludes interpretation of a causal relationship. The sample sizes may not have been sufficiently large to enable detection of significant associations. Conclusions: The current evidence does not show a consistent association between low health literacy and poorer functional outcomes in patients with chronic musculoskeletal conditions. In the absence of a definite link, efforts to develop interventions to improve health literacy would not necessarily improve health service or patient-related outcomes.
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FU National Institute for Health Research (NIHR) under its Research for Patient Benefit (RfPB) Programme [PB-PG-1207-15244]; National Institute for Health Research [PB-PG-1207-15244] Funding Source: researchfish; National Institutes of Health Research (NIHR) [PB-PG-1207-15244] Funding Source: National Institutes of Health Research (NIHR)
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NR 29
TC 43
Z9 50
U1 0
U2 22
PU PUBLIC LIBRARY SCIENCE
PI SAN FRANCISCO
PA 1160 BATTERY STREET, STE 100, SAN FRANCISCO, CA 94111 USA
SN 1932-6203
EI
J9 PLOS ONE
JI PLoS One
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BP
EP
DI 10.1371/journal.pone.0040210
PG 8
WC Multidisciplinary Sciences
SC Science & Technology - Other Topics

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ER

PT J
AU Lodewyckx, L
Luyten, FP
Lories, RJ
AF Lodewyckx, Liesbet
Luyten, Frank P.
Lories, Rik J.
TI Genetic deletion of low-density lipoprotein receptor-related protein 5 increases cartilage degradation in instability-induced osteoarthritis
SO RHEUMATOLOGY
LA English
DT Article
DE WNT; wingless-type MMTV integration site family; LRP5; low-density lipoprotein receptor-related protein 5; OA; osteoporosis; bone; cartilage
ID articular-cartilage; subchondral bone; mice; lrp5; chondrocytes; activation; damage; mouse; leads
AB Methods. Total body bone mineral parameters were measured by dual-energy X-ray absorptiometry. Trabecular and cortical bone parameters of tibia and femur were assessed ex vivo by peripheral quantitative CT. Osteoarthritic changes were induced in Lrp5(-/-) and wild-type C57Bl/6J mice using the surgically induced destabilization of the medial meniscus model and the chemically induced papain and collagenase model. The severity of joint disease was investigated by histological analysis of the knee joints. Results. Bone mineral density and weight were significantly decreased in Lrp5(-/-) C57Bl/6J mice compared with their wild-type littermates. Surgically induced destabilization of the knee joint resulted in significantly increased cartilage degradation in the medial tibia of Lrp5(-/-) mice compared with wild-type control mice. In the medial femur, a similar trend was found but did not reach statistical significance. In the papain- and collagenase-induced models, these differences were not observed. Inflammation scores were comparable between wild-type and Lrp5(-/-) mice. Conclusion. These data show that loss of function of Lrp5 increases cartilage degradation in mild instability-induced OA models in mice. Low bone mass density could have contributed to this effect.
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NR 20
TC 21
Z9 28
U1 0
U2 7
PU OXFORD UNIV PRESS
PI OXFORD
PA GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND
SN 1462-0324
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J9 RHEUMATOLOGY
JI RHEUMATOLOGY
PD NOV 15
PY 2012

VL 51
IS 11
BP 1973
EP 1978
DI 10.1093/rheumatology/kes178
PG 6
WC Rheumatology
SC Rheumatology
GA 025AJ
UT WOS:000310154300007
PM 22850184
DA 2026-02-10
ER

PT J
AU Zupan, J
Komadina, R
Marc, J
AF Zupan, Janja
Komadina, Radko
Marc, Janja
TI The relationship between osteoclastogenic and anti-osteoclastogenic pro-inflammatory cytokines differs in human osteoporotic and osteoarthritic bone tissues
SO JOURNAL OF BIOMEDICAL SCIENCE
LA English
DT Article
DE Interleukins; Interferons; TNF-alpha; TGF-beta 1; beta(3) integrin; Cathepsin K; OSCAR
ID tnf-alpha; estrogen deficiency; receptor activator; gene-expression; trabecular bone; proximal femur; tgf-beta; rankl; interleukin-6; differentiation
AB Background: Pro-inflammatory cytokines possess osteoclastogenic or anti-osteoclastogenic activities. They influence osteoclasts directly or via the receptor activator of nuclear factor kappa B (RANK), RANK ligand (RANKL) and osteoprotegerin (OPG) system. Recent evidence suggests that inflammation may play a role in osteoporosis (OP) and osteoarthritis (OA). We aimed therefore to determine whether there is a difference between both groups: first, in the expression of the osteoclastogenic and anti-osteoclastogenic cytokines, second, in correlation of these cytokines with bone mineral density (BMD) and levels of bone turnover markers (BTM) and third, in correlation between the expression of these cytokines and osteoclast specific genes and RANK/RANKL/OPG genes. Methods: Human bone samples from 54 age and sex matched patients with OP or OA were collected during hip arthroplasty surgery. The expression of 25 genes encoding pro-inflammatory cytokines, their receptors, osteoclast specific genes and

RANK/RANKL/OPG genes was measured using quantitative real-time PCR. Total hip, femoral neck and lumbar spine BMD and BTM in blood samples were measured. The comparison between OP and OA was assessed using Student's t-test or Mann-Whitney U test and correlations between gene expression, BMD and BTM were determined using nonparametric correlation. Results: The results demonstrated a higher expression of interleukin (IL)-6 and IL-1 alpha in OP, and interferon (IFN)-gamma in OA ($p < 0.0005$). Negative correlations of total hip BMD with tumor necrosis factor-alpha (TNF-alpha) in OA and with RANKL/RANK in OP were found ($p < 0.05$). Significant correlations with BTM were shown for IL-1 alpha and IFN-gamma in OP (rho = 0.608 and -0.634) and for TNF-alpha, IL-6 and transforming growth factor-beta 1 (TGF-beta 1) in OA (rho = 0.591, -0.521 and 0.636). Results showed OP specific negative correlations (IFN-gamma with ITGB3, IFN-beta 1 with CTSK, tartrate resistant acid phosphatase (TRAP), CALCR, RANK, RANKL, IL-1 alpha with CTSK, OPG, IL-17A with CALCR) and positive (TGF-beta 1 with CTSK, TRAP, RANK), and OA specific negative (IL-1 alpha with osteoclast associated immunoglobulin-like receptor (OSCAR), TNF-alpha with RANK, RANKL, OPG) and positive (IL-6 with RANK, RANKL, OPG) correlations. Conclusions: Our results demonstrate that the relationship between osteoclastogenic and anti-osteoclastogenic pro-inflammatory cytokines differs in human OP and OA bone and could present an important factor for characteristics of OP and OA bone phenotypes.
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NR 38
TC 71
Z9 99
U1 0
U2 9
PU BMC

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SN 1021-7770
EI 1423-0127
J9 J BIOMED SCI
JI J. Biomed. Sci.
PD MAR 1
PY 2012
VL 19
IS
BP
EP
DI 10.1186/1423-0127-19-28
PG 10
WC Cell Biology; Medicine, Research & Experimental
SC Cell Biology; Research & Experimental Medicine
GA 916JW
UT WOS:000302099500002
PM 22380539
DA 2026-02-10
ER

PT J
AU Hayami, T
Zhuo, Y
Wesolowski, GA
Pickarski, M
Duong, LT
AF Hayami, Tadashi
Zhuo, Ya
Wesolowski, Gregg A.
Pickarski, Maureen
Duong, Le T.
TI Inhibition of cathepsin K reduces cartilage degeneration in the anterior cruciate ligament transection rabbit and murine models of osteoarthritis
SO BONE
LA English
DT Article
DE Osteoarthritis; Cathepsin K inhibition; Articular cartilage; Subchondral bone; Osteophytes
ID subchondral bone; articular-cartilage; meniscectomized models; deficient mice; animal-model; expression; resorption; osteoporosis; collagen; mouse
AB Objective: To investigate the disease modifying effects of cathepsin K (CatK) inhibitor L-006235 compared to alendronate (ALN) in two preclinical models of

osteoarthritis (OA). Methods: Skeletally mature rabbits underwent sham or anterior cruciate ligament transection (ACLT)-surgery and were treated with L-006235 (L-235, 10 mg/kg or 50 mg/kg, PO, daily) or ALN (0.6 mg/kg, s.c., weekly) for 8-weeks. ACLT joint instability was also induced in CatK(-/-) versus wild type (wt) mice and treated for 16-weeks. Changes in cartilage degeneration, subchondral bone volume and osteophyte area were determined by histology and mu-CT. Collagen type I helical peptide (HP-I), a bone resorption marker and collagen type II C-telopeptide (CTX-II), a cartilage degradation marker were measured. Results: L-235 (50 mg/kg) and ALN treatment resulted in significant chondroprotective effects, reducing CTX-II by 60% and the histological Mankin score for cartilage damage by 46% in the ACLT-rabbits. Both doses of L-235 were more potent than ALN in protecting against focal subchondral bone loss, and reducing HP-I by 70% compared to vehicle. L-235 (50 mg/kg) and ALN significantly reduced osteophyte formation in histomorphometric analysis by 55%. The Mankin score in ACLT-CatK(-/-) mice was similar to 2.5-fold lower than the ACLT-wt mice and was not different from sham-CatK(-/-). Osteophyte development was not different among the groups. Conclusion: Inhibition of CatK provides significant benefits in ACLT-model of OA, including: 1) protection of subchondral bone integrity, 2) protection against cartilage degradation and 3) reduced osteophytosis. Preclinical evidence supports the role of CatK as a potential therapeutic target for the treatment of OA. (C) 2012 Elsevier Inc. All rights reserved.
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TI The effect of risedronate (17.5 mg/week) treatment on quality of life in Japanese women with osteoporosis: a prospective observational study
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE EQ-5D; FRAX; Comorbid factors; Ischemic heart disease; Osteoarthritis
ID type-2 diabetes-mellitus; long-term risk; fracture risk; involutional osteoporosis; rheumatoid-arthritis; postmenopausal women; vertebral fractures; hip; metaanalysis; impact
AB A prospective observational study to test the effects of risedronate 17.5 mg/week treatment on quality of life (QOL) of 1,363 Japanese female patients with osteoporosis showed QOL improvement after 12 weeks of administration. Comorbid factors such as ischemic heart disease, hip osteoarthritis, and higher values of FRAX blunted the effects of QOL of the treatment. Few studies have investigated the effect of osteoporosis treatment on QOL in relationship to comorbid factors other than osteoporosis and fracture. Efficacy was determined by changes over time in EQ-5D at baseline, at 12 and 24 weeks, and at the final assessment. Factors affecting changes in EQ-5D were evaluated with a multivariate analysis. Safety was determined by assessing the incident rate of adverse events. The improvement of EQ-5D compared to baseline was observed as significant after 12 weeks of treatment ($p < 0.001$). The greatest improvement was observed in the dimension of "pain/discomfort" by the multivariate analysis ($p < 0.001$). Factors affecting QOL improvement were FRAX value without BMD, age, glucocorticoid use, ischemic heart disease, hip osteoarthritis, and pain. The incidence rate of drug-related adverse events was 4.72 % (95 % confidence interval 3.63-6.02 %). Risedronate at 17.5 mg/week improved the QOL in patients with osteoporosis among Japanese women, and comorbidity factors decreased the effects.
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TI Should risk of bone fragility restrict weight control for other health reasons in postmenopausal women? - A ten year prospective study
SO MATURITAS
LA English
DT Article
DE Dual X-ray absorptiometry; Obesity; Osteoporosis; Postmenopause; Weight change
ID body-mass index; sex-differences; obesity; perimenopausal; overweight; fractures; diagnosis; cohort; hrt; men
AB Background: The aim of the present study was to investigate the health risks of excess body weight in the light of its protective effects on bone fragility. Methods: Femoral neck and lumbar spine dual X-ray absorptiometry was performed for 1970 Finnish women with a mean baseline age of 58.8 years (range 53.1-65.7 years) in 1994 and 2004. Women were categorized according to baseline BMI into normal <25 kg/m2, overweight 25-29.9 kg/m(2) and obese >= 30 kg/m(2). Weight change (kg) was categorized into tertiles. Co-morbidities, not allowed to be present at baseline, was based on self-reports. Osteoporosis was defined as femoral neck or spinal (L2-L4) T-score <-2.5 SD at 10-year follow-up or <-2.0 SD + low trauma energy follow-up fracture. Uni- and multivariate logistic regression models were used to estimate the 10-year risk of incident health disorders. Adjustment for age, number of diseases, alcohol intake and smoking was used in the multivariate models. Results: Obesity (Ob) and overweight (Ow) were related with higher 10-year risk of hypertension (OR = 2.6 (Ob)/OR = 1.7 (Ow), p < 0.001), coronary artery disease (OR = 1.6, p < 0.05/OR = 1.2, p = NS), diabetes (OR = 11.7/OR = 5.3, p < 0.001), osteoarthritis (OR = 1.4, p < 0.05/OR = 1.1, p = NS), chronic back pain (OR = 1.6,p = 0.007/OR = 1.2,p = NS) and poor self-rated health (OR = 2.4,p < 0.05/OR = 1.5, p = NS) and lower risk of osteoporosis (OR = 0.13/OR = 0.28, p < 0.001). Weight change of less than +1 kg was associated 1.8 and 2.6 times lower 10-year risk of having hypertension and breast cancer than weight change over 6.2 kg. Among obese women the absolute risk increase of hypertension was 17%, of diabetes 12%, and absolute risk reduction of osteoporosis 14% in comparison to BMI <25 kg/m(2). Conclusions: Health related risks of high BMI outweigh its protective effects on bone. Weight gain increases the risk hypertension and breast

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U1 0
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TI Association of Rsa polymorphism of the estrogen receptor-β gene with rheumatoid arthritis
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE Polymorphism; Rheumatoid arthritis; Sex; Estrogen receptor-beta
ID disease-activity; bone loss; therapy; alpha; osteoporosis; severity; agonist; repeat; women; risk
AB To investigate the possible influence of the single nucleotide polymorphism (SNP) of the estrogen receptor-beta gene, rs1256049 (Rsa) in exon 5, on the frequency of rheumatoid arthritis (RA), 263 RA patients and 174 control subjects with osteoarthritis (OA) were recruited. Rsa polymorphism was detected using a PCR-RFLP, Polymerase Chain Reaction-Restriction Fragment Length Polymorphism method. The occurrence of both mutant allele (G) and genotype (GG) were significantly higher in RA than in OA patients (allele P = 0.008, OR: 1.501, 95%CI: 1.12-2.02). In RA patients, GG genotype frequency was higher in severe RA patients than mild RA patients. Moreover, there was significant difference between severe

RA patients and OA patients (P = 0.009), also the allele distribution was significant different between severe RA, mild RA, and OA patients (P = 0.025, 95%CI = 0.61-0.93). With respect to gender, GG genotype was statistically more frequent in female RA patients than that of OA, while such an association was not observed in men. Above all, the presence of the GG genotype could be a risk factor for RA and such trend might be different in gender, although additional larger scale study is needed.
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TC 7
Z9 8
U1 0
U2 3
PU SPRINGER HEIDELBERG
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PT J
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TI A proteomic study of protein variation between osteopenic and age-matched control bone tissue
SO EXPERIMENTAL BIOLOGY AND MEDICINE
LA English
DT Article
DE osteoporosis; proteomics; proteins; carbonic anhydrase; phosphoglycerate kinase; apolipoprotein
ID renal tubular-acidosis; induced metabolic-acidosis; carbonic-anhydrase-ii; mineral density; gene-expression; women; osteoporosis; fractures; serine; substitutions
AB The focus of this study was to identify changes in protein expression within the bone tissue environment between osteopenic and control bone tissue of human femoral neck patients with osteoarthritis. Femoral necks were compared from osteopenic patients and age-matched controls. A new method of bone protein extraction was developed to provide a swift, clear view of the bone proteome. Relative changes in protein expression between control and osteopenic samples were quantified using difference gel electrophoresis (DIGE) technology after affinity chromatographic depletion of albumin and IgG. The proteins that were determined to be differentially expressed were identified using standard liquid chromatography mass spectrometry (LC/MS/MS) and database searching techniques. In order to rule out blood contamination, blood from age-matched osteoporotic, osteopenic and controls were analyzed in a similar manner. Image analysis of the DIGE gels indicated that 145 spots in the osteopenic bone samples changed at least +/- 1.5-fold from the control samples ($P < 0.05$). Three of the proteins were identified by LC/MS/MS. Of the proteins that increased in the osteopenic femurs, two were especially significant: carbonic anhydrase I and phosphoglycerate kinase 1. Apolipoprotein A-I was the most prominent protein that significantly decreased in

the osteopenic femurs. The blood samples revealed no significant differences between groups for any of these proteins. In conclusion, carbonic anhydrase I, phosphoglycerate kinase 1 and apolipoprotein A-I appeared to be the most significant variations of proteins in patients with osteopenia and osteoarthritis.
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U2 12
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TI Defining physiologically "normal" vitamin D in African Americans
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE African American; Osteoporosis; Parathyroid hormone; Racial differences; Thresholds; Vitamin D
ID d-endocrine system; parathyroid-hormone; racial-differences; hypovitaminosis-d; d insufficiency; d inadequacy; white; prevalence; calcium; women
AB The relationship between serum 25(OH)D and intact parathyroid hormone (iPTH) was evaluated in the Multicenter Osteoarthritis Study (MOST). No further change in iPTH was observed for African Americans with 25(OH)D levels above 20 ng/ml, suggesting that compared to Caucasians, lower vitamin D targets for sufficiency may be appropriate for African Americans. Vitamin D levels a parts per thousand yen30 ng/ml are commonly considered "normal" based upon maximal

suppression of iPTH; however, this has recently been challenged and the optimal 25(OH)D level among non-Caucasians is unclear. We evaluated the cross-sectional relationship between serum 25(OH)D and iPTH in a sample of Caucasian and African American adults. We used baseline serum samples of participants from the Multicenter Osteoarthritis Study (MOST) for this analysis and used three methods to model the relationship between 25(OH)D and iPTH: ordinary least squares regression (OLS), segmented regression and Helmert contrasts. Among Caucasians (n = 1,258), 25(OH)D and iPTH ranged from 4 to 51 ng/ml and 2 to 120 pg/ml and from 3 to 32 ng/ml and 3 to 119 pg/ml in African Americans (n = 423). We observed different thresholds between African Americans and Caucasians using each analytic technique. Using 25(OH)D as a categorical variable in OLS, iPTH was statistically higher at lower 25(OH)D categories than the 24-32 ng/ml referent group among Caucasians. However, in African Americans, the mean iPTH was only significantly higher at 25(OH)D levels below 15 ng/ml. Using segmented regression, iPTH appeared to stabilize at a lower 25(OH)D level in African Americans (19-23 ng/ml) compared to in Caucasians (> 32 ng/ml). Helmert contrasts also revealed a lower threshold in African Americans than Caucasians. Among MOST participants, the 25(OH)D thresholds at which no further change in iPTH was observed was approximately 20 ng/ml in African Americans versus approximately 30 ng/ml in Caucasians, suggesting optimal vitamin D levels in Caucasians may not be applicable to African Americans.
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NR 37
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PU SPRINGER LONDON LTD
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JI Osteoporosis Int.
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BP 2283
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WC Endocrinology & Metabolism
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PT J
AU Robstad, B
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AF Robstad, B.
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TI The rate of hip osteoarthritis in patients with proximal femoral fractures versus

hip contusion
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Osteoarthritis; Osteoporosis; Osteoporotic fractures; Proximal femoral fractures
ID bone-mineral density; osteoporosis; women; femur
AB We found no difference in the rate of radiological hip osteoarthritis in the injured hip when comparing 349 patients with proximal femoral fractures and 112 patients with hip contusion. There was, however, a tendency for more osteoarthritis in patients with trochanteric fractures than in patients with femoral neck fractures. Osteoarthritis (OA) and osteoporotic fractures are two age-related disorders associated with considerable morbidity. There is a clinical impression of an inverse relation between osteoarthritis and osteoporosis, and a protective effect of OA against osteoporotic fractures has been proposed. We performed a case-control study in 461 subjects. Cases (n = 349) were patients aged 50 years or above who sustained a proximal femoral fracture from November 2003 to October 2004, registered prospectively in the department's fracture register. Controls (n = 112) were patients aged 50 years or above with the diagnosis of hip contusion, recruited from the hospital's discharge register. Radiographic OA was scored according to Kellgren and Lawrence (K&L), and minimal joint space (MJS) was measured in both hips when possible. A K&L grade II or higher or an MJS less than 2.5 mm was defined as OA. Both in the hip fracture group and in the contusion group mean, the MJS was 3.5 mm on the injured side (p = 0.79). In the fracture group, 31/250 (12%) had MJS < 2.5 mm and 16/112 (14%) in the contusion group (p = 0.18). In the fracture group, 40/250 (16%) had a K&L OA grade II or higher, and in the contusion group 20/112 (18%) persons had a K&L OA grade II or higher (p = 0.66). There was a tendency for a higher incidence of OA in patients with trochanteric fractures compared with patients with cervical fractures. We found no differences on the injured side in the rate of hip OA between hip fracture patients and hip contusion patients.
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Wolf O, 2009, ACTA ORTHOP, V80, P308, DOI 10.3109/17453670903039528
NR 25
TC 10
Z9 14
U1 0
U2 2
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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BP 901
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DI 10.1007/s00198-011-1628-8
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WC Endocrinology & Metabolism

SC Endocrinology & Metabolism
GA 891XW
UT WOS:000300251200011
PM 21625883
DA 2026-02-10
ER

PT J
AU Nikodem, A
AF Nikodem, Anna
TI Correlations between structural and mechanical properties of human trabecular femur bone
SO ACTA OF BIOENGINEERING AND BIOMECHANICS
LA English
DT Article
DE osteoporosis; osteoarthritis; mechanical properties; microtomography
ID cancellous bone; architecture; strength; histomorphometry; parameters; dependence; behavior; tissue
AB In this article, the author presents mathematical relationships between the structural and mechanical properties of cancellous human bone tissue obtained by experimental analysis of specimens. Bone tissue material can adjust its internal structure to the existing loading conditions. The mechanical properties affect the structural properties but changes in structural properties likewise cause changes in the mechanical properties of the tissue. In normal tissue, the processes of tissue construction, destruction, and reconstruction are mutually balanced and complementary; if that balance is disturbed, lesions can occur. Therefore, normal bone tissue and pathologically changed tissue (osteoporosis and osteoarthrosis) coming from the area of human femoral head were examined. The structural properties of cancellous tissue specimens were determined non-destructively for three-dimensional reconstructions with the use of modern micro-CT methods. The mechanical properties of the specimens were determined by an uniaxial compression test in three orthogonal directions. Next, in order to specify the compressive strength, a failure test was conducted in the direction perpendicular to the neck-shaft angle of the hip joint.
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FU National Science Centre [N N518 505139]
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NR 30
TC 31
Z9 32
U1 2
U2 24
PU WROCLAW UNIV TECHNOLOGY
PI WROCLAW
PA WROCLAW UNIV TECHNOLOGY, MECHANICAL DEPT, WYBRZEZE WYSPIANSKIEGO 27, WROCLAW, 50-370, POLAND
SN 1509-409X
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J9 ACTA BIOENG BIOMECH
JI Acta Bioeng. Biomech.

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WC Biophysics; Engineering, Biomedical
SC Biophysics; Engineering
GA 142DV
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PT J
AU Matzko, ME
Bowen, TR
Smith, WR
AF Matzko, Michelle Elizabeth
Bowen, Thomas R.
Smith, Wade R.
TI Orthogenomics: An Update
SO JOURNAL OF THE AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS
LA English
DT Review
ID bone-mineral density; genome-wide association; pagets-disease; osteoarthritis; susceptibility; variants; ossification; gene; frzb; hip
AB The study of genomics in orthopaedics has considerably lagged behind such study in other medical disciplines. Seminal work from other lines of medical research demonstrates the importance of genomic information in the evolution of personalized medicine. Common techniques for studying genome-phenotype associations include single nucleotide polymorphism, haplotype, and quantitative trait loci analysis. The few genome-based studies in major orthopaedic and related conditions have focused on osteoporosis, osteoarthritis, neuropathy and nerve compression, spinal deformity, trauma and inflammatory response, and pain and analgesia. The nascent field of orthogenomics, newly defined here as the application of genomic study to orthopaedic practice, has produced findings that could affect the practice of orthopaedics. However, more work is required, and the findings must be distilled and harnessed into applicable and achievable steps to improve clinical orthopaedic practice.
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NR 28
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Z9 6
U1 0
U2 4

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J9 J AM ACAD ORTHOP SUR
JI J. Am. Acad. Orthop. Surg.
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DI 10.5435/JAAOS-20-08-536
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WC Orthopedics; Surgery
SC Orthopedics; Surgery
GA 984NY
UT WOS:000307198900007
PM 22855856
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ER

PT J
AU Chudyk, AM
Ashe, MC
Gorman, E
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AF Chudyk, Anna M.
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Gorman, Erin
Al Tunaiji, Hashel O.
Crossley, Kay M.
TI Risk of hip fracture with hip or knee osteoarthritis: a systematic review
SO CLINICAL RHEUMATOLOGY
LA English
DT Review
DE Hip fracture; Hip fracture risk; Osteoarthritis; Systematic review
ID bone-mineral density; subchondral bone; pain; osteoporosis; epidemiology; arthritis; falls; gait; need; end
AB Osteoarthritis (OA) and hip fracture are two common musculoskeletal disorders associated with substantial societal and personal burden. The objective of this systematic review was to determine the association between hip or knee OA and

risk of hip fractures in people aged 45 years and older as compared to people aged 45 years and older who do not have OA. We searched CINAHL, Cochrane Database of Systematic Reviews, Embase, OVID Medline, PUBMED, and SCOPUS for studies published up to July 2010 and conducted forward searches of included studies using Web of Science. Two reviewers independently screened articles for inclusion, extracted data, and evaluated the risk of bias of included studies using the Newcastle-Ottawa Scale. Eleven articles were included. Three investigated individuals with knee OA, two included adults with knee or hip OA, and six investigated adults with hip OA. We did not combine the hip OA or the knee OA studies in a meta-analysis due to the heterogeneity in: study populations and covariates adjusted for in estimates of association. Hip OA may be related to a decreased risk of hip fracture when considering crude estimates of association or estimates of association adjusted for a limited number of covariates, although not all studies found support for the presence of this association. The association between knee OA and hip fracture remains unclear. The presence of OA in the hip or knee should not act as an indication that assessment for hip fracture risk is unnecessary.
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FU CIHR [99051-1, 105803-1] Funding Source: Medline
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NR 50
TC 16
Z9 18
U1 0
U2 15
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0770-3198
EI 1434-9949
J9 CLIN RHEUMATOL
JI Clin. Rheumatol.
PD MAY 15
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IS 5
BP 749
EP 757
DI 10.1007/s10067-012-1970-z
PG 9
WC Rheumatology
SC Rheumatology
GA 934MV
UT WOS:000303449300001
PM 22422196
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ER

PT J
AU Floerkemeier, T
Hirsch, S
Budde, S
Radtke, K
Thorey, F
Windhagen, H
von Lewinski, G

AF Floerkemeier, Thilo
Hirsch, Stefanie
Budde, Stefan
Radtke, Kerstin
Thorey, Fritz
Windhagen, Henning
von Lewinski, Gabriela
TI Bone Turnover Markers Failed to Predict the Occurrence of Osteonecrosis of the Femoral Head-A Preliminary Study
SO JOURNAL OF CLINICAL LABORATORY ANALYSIS
LA English
DT Article
DE 25-hydroxy-cholecalciferol; bone specific alkaline phosphatase; beta crosslaps; osteocalcin; parathormone; Osteonecrosis of the femoral head; bone turnover marker
ID total hip-arthroplasty; biochemical markers; postmenopausal women; mineral density; heterotopic ossification; degradation-products; osteoporosis; risk; osteolysis; management
AB Background: The early detection of osteonecrosis of the femoral head (ONFH) is difficult, but important for prevention of destruction of the femoral head. The objective of this study was to determine whether the occurrence of osteonecrosis of the femoral head (ONFH) correlates with changes in bone turnover markers. Methods: In 40 patients undergoing primary total hip arthroplasty (THA), different bone turnover markers and hormones (bone specific alkaline phosphatase, osteocalcin, beta cross-laps, 25-hydroxy-cholecalciferol, and parathormone) gained from blood were determined on the morning of the surgery. Twenty-two patients needed a THA due to progressed ONFH. In 18 cases blood was gained from patients with the indication for a THA given due to advanced osteoarthritis (AO) of the hip. Results: Bone specific alkaline phosphatase, osteocalcin, beta cross-laps, and parathormone did not show any deviation from standard values, neither for the group of osteonecrosis nor for the osteoarthritis group.
25-Hydroxy-cholecalciferol revealed on average decreased values without significant differences between both groups ($P < 0.05$). The tested bone turnover markers and hormones failed to predict the occurrence of ONFH. Thus, the focus has to be put on different parameters to find a specific parameter that possibly predicts the risk of ostenecrosis and that is suited to follow up ONFH. J. Clin. Lab. Anal. 26:55-60, 2012. (C)2012 Wiley Periodicals, Inc.
C1 [Floerkemeier, Thilo; Hirsch, Stefanie; Budde, Stefan; Radtke, Kerstin; Thorey, Fritz; Windhagen, Henning; von Lewinski, Gabriela] Hannover Med Sch, Dept Orthopaed Surg, D-3000 Hannover, Germany.
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RP Floerkemeier, T (通讯作者)，Hannover Med Sch, Dept Orthopaed Surg, D-3000 Hannover, Germany.
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NR 16
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PU WILEY-BLACKWELL
PI MALDEN
PA COMMERCE PLACE, 350 MAIN ST, MALDEN 02148, MA USA
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JI J. Clin. Lab. Anal.
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WC Medical Laboratory Technology
SC Medical Laboratory Technology

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PT J
AU Rizzoli, R
Adachi, JD
Cooper, C
Dere, W
Devogelaer, JP
Diez-Perez, A
Kanis, JA
Laslop, A
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Papapoulos, S
Ralston, S
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Reginster, JY
AF Rizzoli, R.
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Cooper, C.
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Kanis, J. A.
Laslop, A.
Mitlak, B.
Papapoulos, S.
Ralston, S.
Reiter, S.
Werhya, G.
Reginster, J. Y.
TI Management of Glucocorticoid-Induced Osteoporosis
SO CALCIFIED TISSUE INTERNATIONAL
LA English
DT Article
DE Glucocorticoid; FRAX; Bone therapy; Osteoporosis; Fracture
ID bone-mineral density; corticosteroid-induced osteoporosis; vertebral fracture risk; methylprednisolone pulse therapy; low-dose prednisone; double-blind; oral corticosteroids; postmenopausal women; long-term; inhaled corticosteroids
AB This review summarizes the available evidence-based data that form the basis

for therapeutic intervention and covers the current status of glucocorticoid-induced osteoporosis (GIOP) management, regulatory requirements, and risk-assessment options. Glucocorticoids are known to cause bone loss and fractures, yet many patients receiving or initiating glucocorticoid therapy are not appropriately evaluated and treated. An European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis workshop was convened to discuss GIOP management and to provide a report by a panel of experts. An expert panel reviewed the available studies that discussed approved therapeutic agents, focusing on randomized and controlled clinical trials reporting on bone mineral density and/or fracture risk of at least 48 weeks' duration. There is no evidence that GIOP and postmenopausal osteoporosis respond differently to treatments. The FRAX algorithm can be adjusted according to glucocorticoid dose. Available antiosteoporotic therapies such as bisphosphonates and teriparatide are efficacious in GIOP management. Several other agents approved for the treatment of postmenopausal osteoporosis may become available for GIOP. It is advised to stop antiosteoporotic treatment after glucocorticoid cessation, unless the patient remains at increased risk of fracture. Calcium and vitamin D supplementation as an osteoporosis-prevention measure is less effective than specific antiosteoporotic treatment. Fracture end-point studies and additional studies investigating specific subpopulations (pediatric, premenopausal, or elderly patients) would strengthen the evidence base and facilitate the development of intervention thresholds and treatment guidelines.
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TI Low osteocalcin/collagen type I bone gene expression ratio is associated with hip fragility fractures
SO BONE
LA English
DT Article
DE Osteocalcin; Apolipoprotein E; Osteoporosis; Bone mechanical behavior; Fragility fractures
ID apolipoprotein-e; mineral density; osteoporotic fractures; elderly-women; undercarboxylated osteocalcin; phylloquinone vitamin-k-1; mechanical-property; postmenopausal women; biochemical markers; circulating levels
AB Introduction: Osteocalcin (OC) is the most abundant non-collagenous bone protein and is determinant for bone mineralization. We aimed to compare OC bone expression and serum factors related to its carboxylation in hip fragility fracture and osteoarthritis patients. We also aimed to identify which of these factors were associated with worse mechanical behavior and with the hip fracture event. Methods: In this case-control study, fragility fracture patients submitted to hip replacement surgery were evaluated and compared to a group of osteoarthritis patients submitted to the same procedure. Fasting blood samples were collected to assess apolipoproteinE (apoE) levels, total OC and undercarboxylated osteocalcin (ucOC), vitamin K. LDL cholesterol, triglycerides and bone turnover markers. The frequency of the apo epsilon 4 isoform was determined. Femoral epiphyses were collected and trabecular bone cylinders drilled in order to perform compression mechanical tests. Gene expression of bone matrix components was assessed by quantitative RT-PCR analysis. Results: 64 patients, 25 submitted to hip replacement surgery due to fragility fracture and 39 due to osteoarthritis, were evaluated. Bone OC/collagen expression (OC/COL1A1) ratio was significantly lower in hip fracture

compared to osteoarthritis patients (p<0.017) adjusted for age, gender and body mass index. Moreover, OC/COL1A1 expression ratio was associated with the hip fracture event (OR similar to 0; p = 0.003) independently of the group assigned, or the clinical characteristics. Apo epsilon 4 isoform was more frequent in the hip fracture group (p = 0.029). ucOC levels were higher in the fracture group although not significantly (p = 0.058). No differences were found regarding total DC (p = 0.602), apoE (p = 0.467) and Vitamin K (p = 0.371). In hip fracture patients, multivariate analysis, adjusted for clinical characteristics, serum factors related to DC metabolism and gene expression of bone matrix proteins showed that low OC/COL1A1 expression ratio was significantly associated with worse trabecular strength (beta = 0.607; p = 0.013) and stiffness (beta = 0.693; p = 0.003). No association was found between ucOC and bone mechanics. Moreover, in osteoarthritis patients, the multivariate analysis revealed that serum total DC was negatively associated with strength (beta = -0.411; p = 0.030) and stiffness (beta = -0.487; p = 0.009). Conclusion: We demonstrated that low bone OC/COL1A1 expression ratio was an independent predictor of worse trabecular mechanical behavior and of the hip fracture event. These findings suggest that in hip fracture patients the imbalance of bone OC/COL1A1 expression ratio reflects disturbances in osteoblast activity leading to bone fragility. (C) 2012 Elsevier Inc. All rights reserved.
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TI Long-term treatment of osteoporosis in postmenopausal women: a review from the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO) and the International Osteoporosis Foundation (IOF)
SO CURRENT MEDICAL RESEARCH AND OPINION
LA English
DT Review
DE Bisphosphonate; Calcium; Denosumab; Fracture; Long-term treatment; Osteoporosis; SERM; Strontium ranelate; Vitamin D
ID vitamin-d supplementation; vertebral fracture risk; continuing outcomes relevant; hormone replacement therapy; invasive breast-cancer; nonvertebral fractures; randomized-trial; atrial-fibrillation; strontium ranelate; hip fracture
AB Introduction: Postmenopausal osteoporosis is a chronic disease requiring treatment that balances long-term fracture efficacy against risk. Methods: We reviewed the efficacy and safety of calcium and vitamin D, the selective estrogen receptor modulators (SERMs), the bisphosphonates, denosumab, and strontium ranelate in studies of 3 years or longer. Results: Six trials lasted for 5 years, and seven went beyond that. The evidence beyond 5 years is generally weak, mainly

due to methodological issues (open-label design, small samples, or absence of placebo control). Although calcium and vitamin D appear to be beneficial, the data are insufficient to evaluate benefits and risk beyond 3 years. The fracture efficacy of SERMs beyond 5 years is not known, though increases in bone mineral density (BMD) appear to be maintained. The SERMs have good long-term safety, including protective effects against breast cancer. The bisphosphonates have established fracture efficacy to 3 years, and 4 or 5 years with alendronate and risedronate. The evidence beyond 5 years indicates sustained increases in BMD. The safety of the bisphosphonates does not appear to be modified with time, with the possible exceptions of atypical subtrochanteric fracture and other events of unknown frequency. Denosumab has been tested up to 5 years, with continued increased in BMD and no reported safety issues. There is evidence for fracture efficacy of strontium ranelate, and sustained increases in BMD over 10 years. Strontium ranelate has good long-term safety. Conclusion: Robust long-term studies are relatively rare for the osteoporosis treatments, and generally show maintenance of BMD and, for some agents, an additional reduction in fracture incidence.
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TI Does ultrasonographic foetal head position prior to induction of labour predict the outcome of delivery?
SO EUROPEAN JOURNAL OF OBSTETRICS & GYNECOLOGY AND REPRODUCTIVE BIOLOGY
LA English
DT Article
DE Induction of labour; Occipitoposterior position; Foetal head position; Mode of delivery; Prediction; Ultrasonography; Labour presentation
ID occiput posterior position; intrapartum sonography; epidural analgesia; vaginal delivery
AB Objective: To examine the capacity of pre-induction sonographic assessment of occipital position of the foetal head to predict the outcome of delivery, and to assess whether sonographic foetal head position before induction of labour is related to foetal presentation at delivery. Study design: A prospective cohort study was conducted in the Maxima Medical Centre, The Netherlands. We included consecutive women in whom labour was induced. Immediately prior to induction a

transabdominal ultrasound was performed to determine the position of the foetal occiput. The primary outcome was mode of delivery. We recorded maternal demographics, labour and delivery characteristics, maternal and neonatal outcomes. The association between position of the foetal head before induction of labour and the occurrence of caesarean section was addressed using univariable and logistic regression analysis. Results: From the 50 of the 183 foetuses that started labour in occipitoposterior position, 11 persisted in occipitoposterior position until birth, whereas from the 120 foetuses that were in occipitoanterior position before induction, three children were born in an occipitoposterior position. Although we found a difference in caesarean section rate between OP position and OA position of the foetal head at sonography prior to induction, this was not statistically significant (14% versus 6.7%, OR 2.3,95% CI 0.78-6.7). Conclusion: Our study demonstrates that OP position prior to labour induction does not affect mode of delivery. Sonographic assessment of the position of the foetal head prior to labour induction should not be introduced in clinical practice.
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AU Castañeda, S
Roman-Blas, JA
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Herrero-Beaumont, G
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Roman-Blas, Jorge A.
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Herrero-Beaumont, Gabriel
TI Subchondral bone as a key target for osteoarthritis treatment

SO BIOCHEMICAL PHARMACOLOGY
LA English
DT Article
DE Subchondral bone; Osteoarthritis; Pathogenesis; Antiresorptives; New therapies
ID anterior cruciate ligament; estrogen replacement therapy; meniscectomized guinea-pig; knee osteoarthritis; articular-cartilage; strontium ranelate; prostaglandin e-2; salmon-calcitonin; trabecular bone; mineral density
AB Osteoarthritis (OA), the most common form of arthritis, is a debilitating and progressive disease that has become a major cause of disability and impaired quality of life in the elderly. OA is considered an organ disease that affects the whole joint, where the subchondral bone (SB) plays a crucial role. Regardless of whether SB alterations precede cartilage damage or appear during the evolution of the disease, SB is currently recognised as a key target in OA treatment. In fact, bone abnormalities, especially increased bone turnover, have been detected in the early evolution of some forms of OA. Systemic osteoporosis (OP) and OA share a paradoxical relationship in which both high and low bone mass conditions may result in induction and/or OA progression. Recent findings suggest that some drugs may be useful in treating both processes simultaneously, at least in a subgroup of patients with OA and OP. This review focuses on the role of SB in OA pathogenesis, describing relevant underlying mechanisms involved in the process and examining the potential activity as disease-modifying anti-osteoarthritic drugs (DMOADs) of certain SB-targeting agents currently under study. (C) 2011 Elsevier Inc. All rights reserved.
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NR 99
TC 208
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PU PERGAMON-ELSEVIER SCIENCE LTD
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PT J
AU Maricic, MJ
AF Maricic, Michael J.
TI Oral Calcitonin
SO CURRENT OSTEOPOROSIS REPORTS
LA English
DT Article
DE Calcitonin; Oral; Osteoporosis; Fracture; Osteoarthritis
ID alpha-amino-acids; salmon-calcitonin; postmenopausal women; bone; efficacy; osteoporosis; formulation; delivery; agents
AB Both injectable and nasal spray calcitonins have been utilized in the treatment of postmenopausal osteoporosis for over 25 years. More widespread use of calcitonin in the treatment of osteoporosis has been hampered in part due to poor patient acceptability and compliance and the inability of patients to take this medication as an oral pill. In recent years, an oral preparation of calcitonin has been developed that combines the active peptide hormone with a caprylic acid derivative to enhance bioavailability. Clinical trials with oral calcitonin in patients with osteoarthritis are currently being conducted. A recent phase 3 study failed to demonstrate significant vertebral fracture reduction, and as a result the clinical

program for oral calcitonin in osteoporosis is under review for further consideration.
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CR AZRIA M, 1995, CALCIFIED TISSUE INT, V57, P405, DOI 10.1007/BF00301940
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TC 14
Z9 15
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PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
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PT J
AU Mody, GM
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TI Improving musculoskeletal health: Global issues
SO BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Musculoskeletal health; Prevention; Human resources; Arthritis; Osteoporosis; Road traffic injuries; Developing countries; Health workers
ID human-immunodeficiency-virus; risk-factors; classification criteria; undergraduate education; knee osteoarthritis; rheumatic-diseases; american-college; united-states; hip fracture; prevalence
AB Musculoskeletal (MSK) disorders are among the leading reasons why patients

consult a family or primary health practitioner, take time off work and become disabled. Many of the MSK disorders are more common in the elderly. Thus, as the proportion of the elderly increases all over the world, MSK disorders will make a greater contribution to the global burden of disease. Epidemiological studies have shown that the spectrum of MSK disorders in developing countries is similar to that seen in industrialised countries, but the burden of disease tends to be higher due to a delay in diagnosis or lack of access to adequate health-care facilities for effective treatment. Musculoskeletal pain is very common in the community while fibromyalgia is being recognised as part of a continuum of chronic widespread pain rather than a narrowly defined entity. This will allow research to improve our understanding of pain in a variety of diffuse pain syndromes. The availability of newer more effective therapies has resulted in efforts to initiate therapy at an earlier stage of diseases. The new criteria for rheumatoid arthritis, and the diagnosis of axial and peripheral involvement in spondyloarthritis, permit an earlier diagnosis without having to wait for radiological changes. One of the major health challenges is the global shortage of health workers, and based on current training of health workers and traditional models of care for service delivery, the global situation is unlikely to change in the near future. Thus, new models of care and strategies to train community health-care workers and primary health-care practitioners to detect and initiate the management of patients with MSK disorders at an earlier stage are required. There is also a need for prevention strategies with campaigns to educate and raise awareness among the entire population. Lifestyle interventions such as maintaining an ideal body weight to prevent obesity, regular exercises, avoidance of smoking and alcohol abuse, intake of a balanced diet and nutrients to include adequate calcium and vitamin D, modification of the work environment and avoidance of certain repetitive activities will prevent or ameliorate disorders such as osteoarthritis, osteoporosis, rheumatoid arthritis, gout and MSK pain syndromes including low back pain and work-related pain syndromes. These prevention strategies also contribute to reducing the prevalence and outcome of diseases such as hypertension, cardiovascular diseases, diabetes and respiratory diseases. Thus, prevention strategies require urgent attention globally. (C) 2012 Elsevier Ltd. All rights reserved.
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U2 50
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J9 BEST PRACT RES CL RH
JI Best Pract. Res. Clin. Rheumatol.
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WC Rheumatology
SC Rheumatology
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PT J
AU Bian, Q
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TI Oleanolic acid exerts an osteoprotective effect in ovariectomy-induced osteoporotic rats and stimulates the osteoblastic differentiation of bone mesenchymal stem cells in vitro
SO MENOPAUSE-THE JOURNAL OF THE NORTH AMERICAN MENOPAUSE SOCIETY
LA English
DT Article
DE Oleanolic acid; Ovariectomy; Stem cell microarray; Bone mesenchymal stem cell; Osteoporosis
ID gene-expression; different phases; notch; markers; number; agents; vivo; wnt
AB Objective: Oleanolic acid (OA) and its glycosides have been reported to prevent

bone loss by inhibiting the formation of osteoclasts. However, because bone formation and resorption are balanced processes in bone metabolism, no studies have described the effect of OA on osteogenesis. The aim of the present study was to evaluate the osteoprotective effect of OA in rats with ovariectomy (OVX)-induced osteoporosis and to search for the molecular targets of OA in bone mesenchymal stem cells (bMSCs). Methods: Two-month-old female mice that underwent OVX were treated with OA (20 mg/kg a day). After 2 weeks and after 3 months, bone mass was evaluated by micro-CT, morphometry, and immunohistochemical detection. In addition, the expression of 256 genes was measured via microarray and confirmed by real-time reverse transcription-polymerase chain reaction. The effects of OA on the activities of bMSCs were also observed in vitro using alkaline phosphatase and cell proliferation assays. Results: Micro-CT displayed only a tendency for bone loss at 2 weeks but a decrease in bone mass at 3 months after OVX. OA treatment increased osteoblast number, increasing osteocalcin and runt-related protein 2 protein levels in vivo and facilitating the osteoblastic differentiation of bMSCs in vitro at doses of 10(-6) and 10(-5) M. Gene expression profile analysis revealed that OVX caused a marked dysregulation of gene expression, especially at 2 weeks, some of which was rescued by OA. Few of these genes overlapped, but their functions were involved in the Notch signaling pathway between two phases of the osteoporotic process. Conclusions: OA exerts an osteoprotective effect in OVX-induced osteoporotic rats and stimulates the osteoblastic differentiation of bMSCs in vitro. The molecular mechanism of this effect might be related to the Notch signaling pathway and requires further investigation.
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U1 0
U2 33
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA
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EI
J9 MENOPAUSE
JI Menopause-J. N. Am. Menopause Soc.
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AU Ishimoto, Y
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Yoshida, M.
TI Prevalence of symptomatic lumbar spinal stenosis and its association with physical performance in a population-based cohort in Japan: the Wakayama Spine Study
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Magnetic resonance imaging; Prevalence; Lumbar spinal stenosis; Cross-sectional
ID myelography; diagnosis; people; adults; pain; age; hip
AB Objective: The purpose of this study was to investigate the prevalence of symptomatic lumbar spinal stenosis (LSS) and to clarify the association between symptomatic LSS and physical performance using magnetic resonance imaging (MRI) in a population-based cohort. Design: This cross-sectional study was performed as a part of the Research on Osteoarthritis/osteoporosis Against Disability (ROAD) in Japan and 1,009 subjects (335 men, 674 women, mean age 66.3 years, age range 21-97 years) were analyzed. An experienced orthopedic surgeon obtained the medical history and performed the physical testing for all participants. Symptomatic LSS diagnostic criteria required the presence of both symptoms and radiographic LSS findings. A 6-m walking time, chair standing time, and one-leg standing time were obtained from all participants. Results: The prevalence of symptomatic LSS was 9.3% (95% confidence interval [CI]: 7.7-11.3) overall, 10.1% (CI: 7.4-13.8) in men and 8.9% (CI: 7.0-11.3) in women. There was a difference in the prevalence with increasing age by gender. The LSS prevalence showed little difference with age greater than 70 years for men, but the LSS prevalence for women was higher with increasing age. Among physical performance measures, 6-m walking time at a maximal pace was significantly associated with symptomatic LSS (P = 0.03). Conclusion: The prevalence of symptomatic LSS was approximately 10% in a cohort resembling the general Japanese population. A 6-m walking time at a maximal pace was a more sensitive index than walking at a usual pace in assessing decreased physical performance associated with symptomatic LSS. (C) 2012 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.

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PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
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PT J

AU Suri, S
Walsh, DA
AF Suri, Sunita
Walsh, David A.
TI Osteochondral alterations in osteoarthritis
SO BONE
LA English
DT Article
DE Osteochondral junction; Bone; Cartilage; Osteoarthritis; Vessels; Pain
ID subchondral vascular system; endothelial growth-factor; knee osteoarthritis; cartilage degradation; rat model; metalloproteinase inhibitor; endochondral ossification; chondrocyte phenotype; structural arthritis; biochemical markers
AB Osteoarthritis (OA) is a major cause of pain and disability in the aging population, but its pathogenesis remains incompletely understood. Alterations beneath the articular cartilage at the osteochondral junction are attracting interest as possible mediators of pain and structural progression in OA. Osteochondral changes occur early during the development of OA and may aggravate pathology elsewhere in the joint. Loss of osteochondral integrity removes the barrier between intra-articular and subchondral compartments, exposing subchondral bone and its nerves to abnormal chemical and biomechanical influence. Osteochondral plasticity results in a merging of tissue compartments across the junction. Loss of the clearly differentiated demarcation between bone and articular cartilage is associated with invasion of articular cartilage by blood vessels and sensory nerves, and advancing endochondral ossification. Increased subchondral bone turnover is intimately associated with these alterations at the osteochondral junction. Cells signal across the osteochondral junction, and this cross-talk may be both a consequence of, and contribute to these pathological changes. Bone turnover, angiogenesis and nerve growth are also features of other diseases such as osteoporosis and cancers, for which therapeutic interventions are already advanced in their development. Here we review pathological changes at the osteochondral junction and explore their potential therapeutic implications for OA. This article is part of a Special Issue entitled "Osteoarthritis". (C) 2011 Elsevier Inc. All rights reserved.
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NR 80
TC 248
Z9 290
U1 0
U2 50
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA
SN 8756-3282
EI
J9 BONE
JI Bone
PD AUG 15
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IS 2
BP 204
EP 211
DI 10.1016/j.bone.2011.10.010
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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UT WOS:000305545600004
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ER

PT J
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AF O'Gorman, Denise M.
Tierney, Claire M.
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TI The Marine-derived, Multi-mineral formula, Aquamin, Enhances Mineralisation of Osteoblast Cells In Vitro
SO PHYTOTHERAPY RESEARCH
LA English
DT Article
DE Aquamin; osteoblasts; bone mineralisation
ID lithothamnion calcareum; knee osteoarthritis; vitamin-d; bone; calcium; supplementation; osteoporosis; extract; algae; women
AB Osteoporosis is a global health problem characterized by low bone mass and an increase in bone fragility. It is now well accepted that dietary factors play a central role in bone development and health. Diet that lacks adequate minerals is considered to be a risk factor for osteoporosis. The food supplement, Aquamin, is a natural, multi-mineral derived from the red algae Lithothamnion corallioides, rich in calcium, magnesium and 72 other trace minerals. The aim of this study was to evaluate the effect of Aquamin on osteoblastic behaviour and mineralisation in a pre-osteoblastic cell line. Cell number and metabolic activity were assessed using Hoescht DNA and AlamarBlue assays respectively. Osteogenic differentiation was measured using an alkaline phosphatase assay while mineralisation was determined using von Kossa and alizarin red staining. It is reported here that Aquamin promotes increased mineralisation in osteoblast cell culture. These data suggest that the nutritional supplement Aquamin plays an important role in promoting bone formation and may be useful in treating bone diseases such as osteoporosis. Copyright (c) 2011 John Wiley & Sons, Ltd.
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NR 25
TC 26
Z9 29
U1 0
U2 8
PU WILEY-BLACKWELL
PI MALDEN
PA COMMERCE PLACE, 350 MAIN ST, MALDEN 02148, MA USA
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JI Phytother. Res.
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WC Chemistry, Medicinal; Pharmacology & Pharmacy
SC Pharmacology & Pharmacy
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PT J
AU Animashawun, AM
Bhattee, G
Ravikumar, K
AF Animashawun, A. M.
Bhattee, G.
Ravikumar, K.
TI Bilateral tibial stress fractures: a case report
SO EUROPEAN JOURNAL OF ORTHOPAEDIC SURGERY AND TRAUMATOLOGY
LA English
DT Article
DE Knee pain; Osteoporosis; Spontaneous; Stress fracture; Tibial
ID leg pain; periosteal
AB A stress fracture can be defined as a fracture of a bone caused by repeated (rather than sudden) mechanical stress. They have been reported in almost all bones of the body, with the lower extremity weight bearing bones, especially the tibia, tarsals and metatarsals, being affected most often. These injuries have a broad spectrum of severity and prognosis. Although the pathology of this injury is understood, the aetiology is less agreed upon. This can make it difficult for clinicians to diagnose and treat this common injury. Stress fractures of the proximal tibiae are common in elderly patients with osteoarthritis, and they are also reported in children. Here, we report an unusual case of an otherwise fit, young, adult male who presented with bilateral insufficiency stress fractures occurring simultaneously in both proximal tibiae. Stress fractures should be a differential diagnosis in any young, fit adult who presents with spontaneous knee pain.
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NR 11
TC 3
Z9 5
U1 0
U2 4
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 1633-8065
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J9 EUR J ORTHOP SURG TR
JI Eur. J. Orthop. Surg. Traumatol.
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IS
BP 189
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WC Orthopedics; Surgery
SC Orthopedics; Surgery
GA 030SI
UT WOS:000310590000039
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PT J
AU Rhee, SH
Baek, GH
AF Rhee, Seung Hwan
Baek, Goo Hyun
TI A Correlation Exists Between Subchondral Bone Mineral Density of the Distal Radius and Systemic Bone Mineral Density
SO CLINICAL ORTHOPAEDICS AND RELATED RESEARCH
LA English
DT Article
ID skeletal structural adaptations; mechanical usage satmu; redefining wolff law; predicting osteoporosis; postmenopausal women; hand osteoarthritis; colles fracture; grip strength; young-adults; follow-up
AB Intraarticular distal radius fractures are common and risk articular congruity owing to disruption of the subchondral bone. Studies regarding microstructure and mechanical properties of the distal radius, however, focus only on the cortical and trabecular bones in the metaphysis and not on the subchondral bone. This study was conducted to (1) quantify the regional bone mineral density of the subchondral plate in the distal radius; (2) analyze the topographic distribution pattern of the subchondral bone mineral density; and (3) evaluate the correlation between the subchondral bone mineral density and the potentially related clinical factors of age, height, weight, BMI, systemic bone mineral densities, socio-occupational classification, and hand osteoarthritis grading. Eighty postmenopausal women with a mean age of 68 years (range, 52-88 years) were enrolled in this study. Digital images of the distal radii of the subjects were scanned by conventional CT and processed to provide the regional bone mineral density of the subchondral plate using a CT osteoabsorptiometry technique. The estimated subchondral bone mineral density was analyzed to evaluate the topographic pattern and its correlation with various clinical factors, including age, height, weight, BMI, degree of hand osteoarthritis, socio-occupational class, and systemic bone mineral density measured in the lumbar spine and hip. During topographic analysis of a densitometric map, a bicentric distribution of the subchondral bone mineral density was found. Among the clinical factors, only the systemic bone mineral density measured by dual-energy x-ray absorptiometry in the femur neck and lumbar spine had a significant correlation with the subchondral bone mineral density of the distal radius. Systemic bone mineral density correlates substantially with the subchondral bone mineral density of the distal radius as a constitutional factor, whereas other local factors arising from the gravitational load or joint reaction force are not associated with the subchondral bone mineral density of the distal radius. Level II, prognostic study. See Guidelines for Authors for a complete description of levels of evidence.
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NR 39
TC 11
Z9 18
U1 0
U2 8
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0009-921X
EI
J9 CLIN ORTHOP RELAT R
JI Clin. Orthop. Rel. Res.
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WC Orthopedics; Surgery
SC Orthopedics; Surgery
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PT J
AU Dossetter, AG
Beeley, H
Bowyer, J
Cook, CR
Crawford, JJ
Finlayson, JE
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Highton, AJ
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Morris, Jeffrey J.
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Ribeiro, Lyn Rosenbrier
Sawney, Helen
Steinbacher, Stefan
Smith, Caroline
Vickers, Madeleine
TI (1R,2R)-N-(1-Cyanocyclopropyl)-2-(6-methoxy-1,3,4,5-tetrahydropyrido[4,3-b]indole-2-carbonyl)cyclohexanecarboxamide (AZD4996): A Potent and Highly Selective Cathepsin K Inhibitor for the Treatment of Osteoarthritis
SO JOURNAL OF MEDICINAL CHEMISTRY
LA English
DT Article
ID beta-substituted cyclohexanecarboxamide; bone-resorption; medicinal chemistry; drug discovery; i collagen; design; target; lysosomotropism; lipophilicity; osteoporosis
AB Directed screening of nitrile compounds revealed 3 as a highly potent cathepsin K inhibitor but with cathepsin S activity and very poor stability to microsomes. Synthesis of compounds with reduced molecular complexity, such as 7, revealed key SAR and demonstrated that baseline physical properties and in vitro stability were in fact excellent for this series. The tricycle carboline P3 unit was discovered by hypothesis-based design using existing structural information. Optimization using small substituents, knowledge from matched molecular pairs, and control of lipophilicity yielded compounds very close to the desired profile, of which 34 (AZD4996) was selected on the basis of pharmacokinetic profile.
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NR 46
TC 38
Z9 43
U1 2
U2 17
PU AMER CHEMICAL SOC
PI WASHINGTON
PA 1155 16TH ST, NW, WASHINGTON, DC 20036 USA
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J9 J MED CHEM
JI J. Med. Chem.
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WC Chemistry, Medicinal
SC Pharmacology & Pharmacy
GA 978SA
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ER

PT J
AU Aro, HT
Alm, JJ
Moritz, N
Mäkinen, TJ
Lankinen, P
AF Aro, Hannu T.
Alm, Jessica J.
Moritz, Niko
Makinen, Tatu J.
Lankinen, Petteri
TI Low BMD affects initial stability and delays stem osseointegration in cementless total hip arthroplasty in women A 2-year RSA study of 39 patients
SO ACTA ORTHOPAEDICA
LA English
DT Article
ID weight-bearing; proximal femur; femoral stems; follow-up; bone; radiostereometry; osteoarthritis; replacement; migration; implants
AB Background and purpose Immediate implant stability is a key factor for success in cementless total hip arthroplasty (THA). Low bone mineral density (BMD) and age-related geometric changes of the proximal femur may jeopardize initial stability and osseointegration. We compared migration of hydroxyapatite-coated femoral stems in women with or without low systemic BMD. Patients and methods 61 female patients with hip osteoarthritis were treated with cementless THA with anatomically designed hydroxyapatite-coated femoral stems and ceramic-ceramic bearing surfaces (ABG-II). Of the 39 eligible patients between the ages of 41 and 78 years, 12 had normal systemic BMD and 27 had osteopenia or osteoporosis. According to the Dorr classification, 21 had type A bone and 18 had type B. Translational and rotational migration of the stems was evaluated with radiostereometric analysis (RSA) up to 2 years after surgery. Results Patients with low systemic BMD showed higher subsidence of the femoral stem during the first 3 months after surgery than did those with normal BMD (difference = 0.6, 95% CI: 0.1-1.1; p = 0.03). Low systemic BMD (odds ratio (OR) = 0.1, CI: 0.006-1.0; p = 0.02), low local hip BMD (OR = 0.3, CI: 0.1-0.7; p = 0.005) and ageing (OR = 1.1, CI: 1.0-1.2; p = 0.02) were risk factors for delayed translational stability. Ageing and low canal flare index were risk factors for delayed rotational stabilization (OR = 3, CI: 1.1-9; p = 0.04 and OR = 1.1, CI: 1.0-1.2; p = 0.02, respectively). Harris hip score and WOMAC score were similar in patients with normal systemic BMD and low systemic BMD. Interpretation Low BMD, changes in intraosseous dimensions of the proximal femur, and ageing adversely affected initial stability and delayed osseointegration of cementless stems in women.
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NR 37
TC 157
Z9 180
U1 0
U2 12
PU TAYLOR & FRANCIS LTD
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PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
SN 1745-3674
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JI Acta Orthop.
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WC Orthopedics
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PT J
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AF Papavasiliou, Kyriakos A.
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Sayegh, Fares E.
Kapetanos, George A.
TI Serum intact-parathyroid hormone level following total knee arthroplasty
SO JOURNAL OF ORTHOPAEDIC SURGERY
LA English
DT Article
DE arthroplasty, replacement, knee; osteoarthritis, knee; osteoporosis, postmenopausal; parathyroid hormone
AB Purpose. To evaluate short-term parathyroid hormone (PTH) secretion following total knee arthroplasty (TKA). Methods. 119 Caucasian postmenopausal women aged 49 to 81 (mean, 69.8) years who underwent TKA for end-stage knee osteoarthritis were included. Serum levels of intact-PTH, calcium, phosphorus, and creatinine were evaluated pre-and post-operatively (on days -1 and 7). Creatinine clearance was also calculated. Results. In 67 of the patients, serum intact-PTH levels decreased after TKA; this sample proportion was not significant (p=0.82). In 16 of the patients, such levels elevated abnormally (above normal range). In the remaining 36 patients, such levels elevated within the normal range. Therefore, the mean serum intact-PTH level of all patients increased slightly after TKA (45.4 vs. 45.3, p=0.162). The serum intact-PTH level did not correlate to body weight (r=-0.045, p=0.624), patient age (r=-0.061, p=0.508), serum creatinine level (r=0.084, p=0.366), and clearance of creatinine (r=-0.037, p=0.692). Conclusion. In most postmenopausal women, the serum intact-PTH level decreased moderately following TKA, but in some, the level was abnormally elevated. This may interfere the prosthesis incorporation process.
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U1 1
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PU HONG KONG ACAD MEDICINE PRESS
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PA 9/F/, ROOM 901, 99 WONG CHUK HANG RD, ABERDEEN, HONG KONG, 00000, PEOPLES R CHINA
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PT J
AU Uhlig, T
AF Uhlig, Till
TI Tai Chi and yoga as complementary therapies in rheumatologic conditions
SO BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Complementary therapy; Tai Chi; Yoga; Rheumatologic disease; Musculoskeletal; Rheumatoid arthritis; Osteoarthritis; Osteoporosis; Fibromyalgia; Outcomes
ID bone-mineral density; quality-of-life; knee osteoarthritis; muscle strength; disease-activity; iyengar yoga; older-adults; arthritis; exercise; pilot
AB Tai Chi and yoga are complementary therapies which have, during the last few decades, emerged as popular treatments for rheumatologic and musculoskeletal diseases. This review covers the evidence of Tai Chi and yoga in the management of rheumatologic diseases, especially osteoarthritis of the knee, hip and hand, and rheumatoid arthritis. There is evidence that Tai Chi and yoga are safe, and some evidence that they have benefit, leading to reduction of pain and improvement of physical function and quality of life in patients. Recommendations for Tai Chi in knee osteoarthritis have recently been issued by the American College of Rheumatology. To allow broader recommendations for the use of Tai Chi and yoga in rheumatic diseases, there is a need to collect more evidence researched with larger randomised controlled trials. (c) 2012 Elsevier Ltd. All rights reserved.
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NR 62
TC 25
Z9 28
U1 0
U2 50
PU ELSEVIER SCI LTD
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PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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WC Rheumatology
SC Rheumatology
GA 001GJ
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PT J
AU Ramphul, M
Kennelly, M
Murphy, DJ
AF Ramphul, Meenakshi
Kennelly, Mairead
Murphy, Deirdre J.
TI Establishing the accuracy and acceptability of abdominal ultrasound to define the foetal head position in the second stage of labour: a validation study
SO EUROPEAN JOURNAL OF OBSTETRICS & GYNECOLOGY AND REPRODUCTIVE BIOLOGY
LA English
DT Article
DE Foetal head position; Second stage of labour; Intrapartum ultrasound; Validation
ID digital examination; transabdominal sonography; operative delivery; cohort
AB Objectives: To compare the diagnosis of the foetal head position in the second stage of labour by ultrasound scan performed by a novice sonographer and by clinical assessment, to that of an expert sonographer (gold standard): and to evaluate the acceptability of ultrasound in the second stage of labour to women and clinicians. Study design: This is a case series. We recruited sixty women delivering in a university hospital in Dublin, Ireland. An abdominal scan was performed by a novice and an expert ultrasonographer and a clinical assessment was performed by an obstetrician or midwife. Each assessor was blinded to the findings of the others. The main outcome measures were errors in the diagnosis of the foetal head position and acceptability of abdominal ultrasound in the second stage of labour. Results: The ultrasound findings of the novice and expert ultrasonographers were consistent in 52 (87%) cases for the foetal head position; 80% accuracy for the first ten scans performed by the novice (median time 150 s) and 90% for the last ten scans (median time 10 s). The novice made no occipito-anterior/occipito-posterior (OA/OP) errors. The clinical diagnosis of the foetal head position was incorrect in 25 (42%) cases; 8(13%) OA/OP errors. Women and clinicians did not consider the ultrasound assessment to be intrusive.

Conclusion: An abdominal scan by a novice ultrasonographer is an accurate and acceptable method of diagnosing the foetal head position in the second stage of labour and may have a role to play in assessment prior to instrumental delivery. (C) 2012 Elsevier Ireland Ltd. All rights reserved.
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NR 17

TC 30
Z9 32
U1 0
U2 5
PU ELSEVIER SCIENCE BV
PI AMSTERDAM
PA PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
SN 0301-2115
EI
J9 EUR J OBSTET GYN R B
JI Eur. J. Obstet. Gynecol. Reprod. Biol.
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WC Obstetrics & Gynecology; Reproductive Biology
SC Obstetrics & Gynecology; Reproductive Biology
GA 013LJ
UT WOS:000309306600006
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PT J
AU Marinozzi, F
Marinozzi, A
Bini, F
Zuppante, F
Pecci, R
Bedini, R
AF Marinozzi, Franco
Marinozzi, Andrea
Bini, Fabiano
Zuppante, Francesca
Pecci, Raffaella
Bedini, Rossella
TI Variability of morphometric parameters of human trabecular tissue from coxo-arthritis and osteoporotic samples
SO ANNALI DELL ISTITUTO SUPERIORE DI SANITA
LA English

DT Article
DE microtomography; bone morphometry; osteoarthritis; osteoporosis
ID cancellous bone; computed-tomography; surface; volume; osteoarthritis; quality; density
AB Morphometric and architectural bone parameters change in diseases such as osteoarthritis and osteoporosis. The mechanical strength of bone is primarily influenced by bone quantity and quality. Bone quality is defined by parameters such as trabecular thickness, trabecular separation, trabecular density and degree of anisotropy that describe the micro-architectural structure of bone. Recently, many studies have validated microtomography as a valuable investigative technique to assess bone morphometry, thanks to micro-CT non-destructive, non-invasive and reliability features, in comparison to traditional techniques such as histology. The aim of this study is the analysis by micro-computed tomography of six specimens, extracted from patients affected by osteoarthritis and osteoporosis, in order to observe the tridimensional structure and calculate several morphometric parameters.
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Skyscan, 2010, CT AN US GUID, V0, P0
Ulrich D, 1997, ST HEAL T, V40, P97
NR 31
TC 26
Z9 27
U1 0
U2 6
PU PENSIERO SCIENTIFICO
PI ROME
PA VIA SAN GIOVANNI VALDARNO 8, ROME, 00198, ITALY
SN 0021-2571
EI
J9 ANN I SUPER SANITA
JI Ann. Ist. Super. Sanita
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WC Public, Environmental & Occupational Health
SC Public, Environmental & Occupational Health
GA 931NR
UT WOS:000303227100004
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PT J
AU Choong, P
   Brooks, P
AF Choong, Peter
   Brooks, Peter
TI Achievements during the Bone and Joint Decade 2000-2010
SO BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Orthopedics; Bjd; Joint surgery; Arthroscopic surgery; Bioengineering; Robotics; Registries; Musculuskeletal pain; Osteoarthritis; Osteoporosis
ID total hip-arthroplasty; surgery
AB Musculoskeletal diseases continue to produce major disability around the world. Advances in therapy - particularly for the inflammatory diseases - have the potential to eradicate the inflammation and thus prevent joint destruction. Surgical advances include minimally invasive and computer-assisted robotic surgery, and advances in arthroscopic surgery. The development of new musculoskeletal tissues - tendons, cartilage and bone using nanotechnology and stem cells - has the potential to revolutionise the way we approach these chronic destructive diseases as well as major trauma. With the rapid increase in these conditions with an ageing population, new models of care will need to be developed to ensure that the right care is delivered at the right time by the most appropriately trained health professional and at a reasonable cost. The Bone and Joint Decade has played a significant role in focussing researchers, clinicians and health educators on these diseases and also in drawing them to the attention of Governments around the globe. While there is still much to be done, the journey has commenced and will continue into the future with education, research and service delivery into these important conditions being further enhanced. (C) 2012 Elsevier Ltd. All rights reserved.
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NR 42
TC 14
Z9 15
U1 0
U2 11
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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J9 BEST PRACT RES CL RH
JI Best Pract. Res. Clin. Rheumatol.
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WC Rheumatology
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PT J
AU Nagata, K
Yoshimura, N
Muraki, S
Hashizume, H
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Nakamura, Kozo
Akune, Toru
Yoshida, Munehito
TI Prevalence of Cervical Cord Compression and Its Association With Physical Performance in a Population-Based Cohort in Japan The Wakayama Spine Study
SO SPINE
LA English
DT Article
DE cervical cord compression; population-based study; MRI; physical performance
ID asymptomatic subjects; surgical-treatment; myelopathy; spondylosis; disability; outcm; signs; gait; mri; age
AB Study Design. A population-based magnetic resonance imaging (MRI) study of the cervical spine. Objective. This study was undertaken in order to investigate the prevalence of cervical cord compression (CCC) and to examine the association between CCC and physical performance measures in a population-based cohort established in Japan. Summary of Background Data. Population-based cohort studies of the prevalence of CCC, although essential for clarification of the

prevalence of slowly progressive disease and specification of the time of incidence of CCC, are not available. Methods. This cross-sectional study was performed as a part of the Research on Osteoarthritis/osteoporosis Against Disability study, a large-scale population-based cohort study in Japan. From 1011 inhabitants who underwent MRI examinations, images of the cervical spine of 977 subjects (324 men and 653 women, mean age of 66.4 yr) were evaluated. CCC was assessed by sagittal T2-weighted MRI and was defined as spinal cord compression. The prevalence of CCC and its association with myelopathic signs (hyper-reflexia of the patellar tendon and Hoffmann and Babinski reflexes) were examined. In addition, physical performance measures (grip and release test, grip strength, 6-m walking time, step length, chair-stand time, and one-leg standing time) were tested. Results. The prevalence of CCC was 24.4% and was significantly higher in men (29.3% in men and 21.9% in women, P = 0.011). The prevalence of CCC was higher with increasing age in both sexes. CCC was not significantly associated with any myelopathic signs but was significantly associated with grip and release test, 6-m walking time, step length, and chair-stand time. Conclusion. In this MRI study, the prevalence of CCC was examined. The present results indicate that CCC correlates with physical performance measures from an early stage of the disease before myelopathic signs appear.
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NR 29
TC 59
Z9 62
U1 0
U2 5
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 0362-2436
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J9 SPINE
JI SPINE
PD OCT 15
PY 2012
VL 37
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BP 1892
EP 1898
DI 10.1097/BRS.0b013e31825a2619

PG 7
WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
GA 022NM
UT WOS:000309966100014
PM 22565382
DA 2026-02-10
ER

PT J
AU Churchman, SM
Ponchel, F
Boxall, SA
Cuthbert, R
Kouroupis, D
Roshdy, T
Giannoudis, PV
Emery, P
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Jones, EA
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Cuthbert, Richard
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Roshdy, Tarek
Giannoudis, Peter V.
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McGonagle, Dennis
Jones, Elena A.
TI Transcriptional profile of native CD271+ multipotential stromal cells: Evidence for multiple fates, with prominent osteogenic and wnt pathway signaling activity
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID mesenchymal stem-cells; human bone-marrow; hip osteoarthritis; in-vivo; expression; differentiation; age; hematopoiesis; regeneration; maintenance
AB Objective Controversy surrounds the identity and functionality of rare bone marrowderived multipotential stromal cells (BM-MSCs), including their differentiation capabilities, their relationship to pericytes and hematopoiesis-supporting stromal cells, and the relevance of their culture-expanded progeny in studies of skeletal biology and development of cell-based therapies. The aim of this study was to clarify the nature of candidate BM-MSCs by profiling transcripts that reflect different aspects of their putative

functions in vivo. Methods Rare, sorted BM-derived CD45-/low CD271bright (CD271) cells were analyzed using 96-gene expression arrays focused on transcripts relevant to mesenchymal-lineage differentiation (toward bone, cartilage, fat, or muscle), hematopoietic and stromal support, and molecules critical to skeletal homeostasis. These cells were compared to matched CD45+ CD271- hematopoietic-lineage cells, culture-expanded MSCs, and skin fibroblasts. When feasible, transcription was validated using flow cytometry. Results CD271 cells had a transcriptional profile consistent with the multiple fates of in vivo MSCs, evident from the observed simultaneous expression of osteogenic, adipogenic, pericytic, and hematopoiesis-supporting genes (e.g., SP7 [osterix], FABP4 [fatty acid binding protein 4], ANGPT1 [angiopoietin 1], and CXCL12 [stromal cellderived factor 1], respectively). Compared to culture-expanded MSCs and fibroblasts, CD271 cells exhibited greater transcriptional activity, particularly with respect to Wnt-related genes (>1,000-fold increased expression of FRZB [secreted frizzled-related protein 3] and WIF1 [Wnt inhibitory factor 1]). A number of transcripts were identified as novel markers of MSCs. Conclusion The native, BM-derived in vivo MSC population is endowed with a gene signature that is compatible with multiple functions, reflecting the topographic bone niche of these cells, and their signature is significantly different from that of culture-expanded MSCs. This indicates that studies of the biologic functions of MSCs in musculoskeletal diseases, including osteoporosis and osteoarthritis, should focus on in vivo MSCs, rather than their culture-adapted progeny.
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TC 113
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U1 0
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J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
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TI Changes in Serum Levels of Cartilage Oligomeric Matrix Protein after Estrogen and Alendronate Therapy in Postmenopausal Women
SO GYNECOLOGIC AND OBSTETRIC INVESTIGATION
LA English
DT Article
DE Cartilage oligomeric matrix protein; Osteoarthritis; Estrogen; Alendronate; Menopause
ID hormone-replacement-therapy; knee osteoarthritis; subchondral bone; articular-cartilage; radiographic progression; ovariectomized rats; model; markers; degradation; association
AB Background: Cartilage oligomeric matrix protein (COMP) is a biomarker for joint destruction and its serum levels are used for assessing therapeutic efficacy. This study aims to compare changes in serum COMP levels in postmenopausal women with osteopenia/osteoporosis receiving estrogen and alendronate. Methods: A total of 62 postmenopausal women diagnosed with osteopenia or osteoporosis were treated with either estrogen (17 beta-estradiol 1 mg, n = 30) or bisphosphonate (alendronate 5 mg, n = 32) for 6 months. The controls were healthy postmenopausal women (n = 30). Serum COMP and osteocalcin levels were measured at baseline and after 6 months of treatment. Results: Estrogen decreased levels of COMP at 6 months compared to baseline levels (-8.35 +/- 19.38%), whereas the bisphosphonate and control groups resulted in no significant changes (-5.50 +/- 18.69 and 1.49 +/- 25.34%, respectively). Concentrations of osteocalcin decreased significantly in both treatment groups (estrogen 25.60 +/- 24.42% and alendronate 13.76 +/- 23.89%, respectively). There was a significant positive correlation between changes after 6 months in COMP and osteocalcin (R = 0.48, p = 0.002). Conclusions: Postmenopausal women treated with estrogen showed

significantly decreased levels of COMP after 6 months. Estrogen might provide a further treatment modality in the prevention of joint destruction. Copyright (c) 20125. Karger AG, Basel
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U1 0
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AU Tsouknidas, A
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AF Tsouknidas, Alexander
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TI Fracture risk in the femoral hip region: A finite element analysis supported experimental approach
SO JOURNAL OF BIOMECHANICS
LA English
DT Article
DE Femoral hip; FEA; Dual-energy X-ray absorptiometry; Fracture risk indicator
ID proximal femur fractures; bone; osteoporosis; density; osteoarthritis; pathogenesis; strength; sites; falls; neck
AB The decrease of bone mineral density (BMD) is a multifactorial bone pathology, commonly referred to as osteoporosis. The subsequent decline of the bone's micro-structural characteristics renders the human skeletal system, and especially the hip, susceptible to fragility fractures. This study represents a systematic attempt to correlate BMD spectrums to the mechanical strength characteristics of the femoral neck and determine a fracture risk indicator based on non-invasive imaging techniques. The BMD of 30 patients' femurs was measured in vivo by Dual-energy X-ray absorptiometry (DXA). As these patients were subjected to total hip replacement, the mechanical strength properties of their femurs' were determined ex-vivo using uniaxial compression experiments. FEA simulations facilitated the correlation of the DXA measurements to the apparent fracture risk, indicating critical strain values during complex loading scenarios. (C) 2012 Elsevier

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PU ELSEVIER SCI LTD
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J9 J BIOMECH
JI J. Biomech.
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PT J
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Canhao, Helena
TI Smoking is a predictor of worse trabecular mechanical performance in hip fragility fracture patients
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Osteoporosis; Fracture risk; FRAX; Mechanical properties
ID bone-mineral density; age-related-changes; cancellous bone; femoral-head; osteoporotic fractures; proximal femur; risk-factors; elderly-men; osteoarthritis;

metaanalysis
AB Clinical risk factors (CRFs) are established predictors of fracture events. However, the influence of individual CRFs on trabecular mechanical fragility is still a subject of debate. In this study, we aimed to assess differences, adjusted for CRFs, between bone macrostructural parameters measured in ex-vivo specimens from hip fragility fracture patients and osteoarthritis patients, and to determine whether individual CRFs could predict trabecular bone mechanical behavior in hip fragility fractures. Additionally, we also looked for associations between the 10-year risk of major and hip fracture calculated by FRAX and trabecular bone mechanical performance. In this case-control study, a group of fragility fracture patients were compared with a group of osteoarthritis patients, both having undergone hip replacement surgery. A clinical protocol was applied in order to collect CRFs [body mass index (BMI), prior fragility fracture, parental history of hip fracture, long-term use of oral glucocorticoids, rheumatoid arthritis, current smoking, alcohol consumption, age and gender]. The 10-year probability of fracture was calculated. Serum bone turnover markers were determined and dual X-ray absorptiometry performed. Femoral head diameter was evaluated and trabecular bone cylinders were drilled for mechanical testing to determine bone strength, stiffness and toughness. We evaluated 40 hip fragility fracture and 52 osteoarthritis patients. Trabecular bone stiffness was significantly lower ($p = 0.042$) in hip fragility fracture patients when compared to osteoarthritic individuals, adjusted for age, gender and BMI. No other macrostructural parameter was statistically different between the groups. In hip fragility fracture patients, smoking habits (beta = -0.403; $p = 0.018$) and female gender (beta = -0.416; $p = 0.008$) were independently associated with lower stiffness. In addition, smoking was also independently associated with worse trabecular strength (beta = -0.323; $p = 0.045$), and toughness (beta = -0.403; $p = 0.018$). In these patients, the 10-year risk of major ($r = -0.550$; $p = 0.012$) and hip fracture ($r = -0.513$; $p = 0.021$) calculated using only CRFs was strongly correlated with femoral neck bone mineral density but not with mechanical performance. Our data showed that among fragility fracture patients active smoking is a predictor of worse intrinsic trabecular mechanical performance, and female gender is also independently associated with lower stiffness. In this population, the 10-year risk of fracture using CRFs with different weights only reflects bone mass loss but not trabecular mechanical properties.
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SC Endocrinology & Metabolism; Research & Experimental Medicine
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AF Ii, Robert Lee Page
Lindenfeld, JoAnn
TI The Comorbidity Conundrum: A Focus on the Role of Noncardiovascular Chronic Conditions in the Heart Failure Patient
SO CURRENT CARDIOLOGY REPORTS
LA English
DT Article
DE Anemia; Chronic conditions; Comorbidities; Chronic obstructive pulmonary disease; Diabetes; Depression; Obesity; Thyroid dysfunction; Osteoarthritis; Osteoporosis; Renal dysfunction; Heart failure
ID obstructive pulmonary-disease; multiple chronic conditions; older patients; depressive symptoms; united-states; beta-blockers; risk-factor; mortality; prevalence; drug
AB The rapid aging of the US population combined with improvements in modern medicine has created a new public health concern of comorbidity, a chronic condition that co-exists with a primary illness. Over 141 million Americans suffer from one or more comorbid conditions. In the heart failure (HF) patient, this comorbidity burden is particularly high, with over 40% of patients having five or more chronic conditions. These comorbidities can vary from being a risk factor to a cause of HF progression or even a precipitating factor for decompensation. Comorbidities, particularly the noncardiovascular conditions, have been associated with greater health resource utilization, poor health outcomes, and increased mortality. To minimize the negative impact that these comorbidities have on patient outcomes, appropriate attention should be paid to identifying, prioritizing, and managing each condition; minimizing medication complexity and polypharmacy; and improving overall coordination of care between providers and patients.
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WC Cardiac & Cardiovascular Systems
SC Cardiovascular System & Cardiology
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PT J
AU Garrison, D
AF Garrison, Deborah
TI Osteoarthritis, Osteoporosis, and Exercise
SO WORKPLACE HEALTH & SAFETY
LA English
DT Article
ID quality-of-life; knee osteoarthritis; physical-activity; tai chi; individuals; adults; women; falls; risk
AB With the aging of the work force, occupational health nurses must prepare for encounters with clients who are challenged by osteoarthritis or osteoporosis. Clients should be encouraged to exercise safely to promote functioning at home and work. This article reviews recent literature on the benefits of exercise for workers with osteoarthritis, osteoporosis, or both.
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PT J
AU Booth, FW
Roberts, CK
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AF Booth, Frank W.
Roberts, Christian K.
Laye, Matthew J.
TI Lack of Exercise Is a Major Cause of Chronic Diseases
SO COMPREHENSIVE PHYSIOLOGY
LA English
DT Article
ID body-mass index; all-cause mortality; time physical-activity; growth-factor-i; negative-energy balance; life-style intervention; modifiable risk-factors; human skeletal-muscle; fatty liver-disease; nutrition examination survey
AB Chronic diseases are major killers in the modern era. Physical inactivity is a primary cause of most chronic diseases. The initial third of the article considers: activity and prevention definitions; historical evidence showing physical inactivity is detrimental to health and normal organ functional capacities; cause versus treatment; physical activity and inactivity mechanisms differ; gene-environment interaction (including aerobic training adaptations, personalized medicine, and co-twin physical activity); and specificity of adaptations to type of training. Next, physical activity/exercise is examined as primary prevention against 35 chronic conditions [accelerated biological aging/premature death, low cardiorespiratory fitness (VO(2)max), sarcopenia, metabolic syndrome, obesity, insulin resistance, prediabetes, type 2 diabetes, nonalcoholic fatty liver disease, coronary heart disease, peripheral artery disease, hypertension, stroke, congestive heart failure, endothelial dysfunction, arterial dyslipidemia, hemostasis, deep vein thrombosis,

cognitive dysfunction, depression and anxiety, osteoporosis, osteoarthritis, balance, bone fracture/falls, rheumatoid arthritis, colon cancer, breast cancer, endometrial cancer, gestational diabetes, pre-eclampsia, polycystic ovary syndrome, erectile dysfunction, pain, diverticulitis, constipation, and gallbladder diseases]. The article ends with consideration of deterioration of risk factors in longer-term sedentary groups; clinical consequences of inactive childhood/adolescence; and public policy. In summary, the body rapidly maladapts to insufficient physical activity, and if continued, results in substantial decreases in both total and quality years of life. Taken together, conclusive evidence exists that physical inactivity is one important cause of most chronic diseases. In addition, physical activity primarily prevents, or delays, chronic diseases, implying that chronic disease need not be an inevitable outcome during life. (C) 2012 American Physiological Society. Compr Physiol 2:1143-1211, 2012.
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TI 3-T MRI assessment of osteophyte formation in patients with unilateral anterior cruciate ligament injury and reconstruction
SO SKELETAL RADIOLOGY
LA English
DT Article
DE Osteophytes; Knee joint; Osteoarthritis; Anterior cruciate ligament rupture; MRI
ID knee osteoarthritis; high prevalence; meniscal lesions; soccer players; scoring system; risk-factors; cartilage; interobserver; reliability; validity
AB To define the number and distribution of osteophytes (OPs) in bilateral knee MRI (magnetic resonance imaging) of patients with unilateral anterior cruciate ligament (ACL) rupture. Bilateral knee MRIs of 20 patients with unilateral ACL rupture and reconstruction were retrospectively analyzed for OPs. OPs were graded following the KOSS (knee OA scoring system) classification and their compartmental distribution was assessed following the WORMS (Whole-Organ Magnetic Resonance Imaging Score) classification. All examined knees revealed OPs. Knees with ACL rupture showed significant ($p < 0.001$) higher total numbers of OPs (mean 11.6; SD +/- 4.4) than knees with intact ACL (mean 5.1; SD +/- 2.3). Knees with ACL rupture showed increased OP formation in all knee compartments with predominance of marginal OPs in the lateral femorotibial compartment especially on the tibia. Our results show that after knee injury with ACL rupture and reconstruction, all knee compartments were involved in post-traumatic increase of OP formation. The most affected compartment was the lateral femorotibial compartment on the tibial side.
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TC 6
Z9 10
U1 0
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PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
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JI Skeletal Radiol.
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WC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
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TI Hypovitaminosis D and response to cholecalciferol supplementation in patients with autoimmune and non-autoimmune rheumatic diseases
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE Hypovitaminosis D; 25(OH)vitamin D supplementation; Inflammatory autoimmune diseases; Osteoarthritis
ID vitamin-d deficiency; serum-levels; 25-hydroxyvitamin d; healthy-subjects; d metabolites; population; arthritis; association; consequences; nutrition
AB Recent reports suggest a role of hypovitaminosis D in the pathogenesis of inflammatory autoimmune diseases (ARD); we investigated 25(OH)vitamin D plasma level before and after supplementation in ARD and NARD (non-ARD: osteoporosis and/or OA) patients. We retrospectively evaluated 572 consecutive clinical records of adult patients at immuno-rheumatology and rehabilitative units of our institution from January 2006 to October 2009. We excluded patients with vitamin D supplementation or renal failure, primary hyperparathyroidism, liver failure. We recorded 25(OH)vitamin D plasma concentration of 245 patients together with other clinical data. We then evaluated 25(OH)vitamin D plasma concentration of 100 (43 ARD and 57 NARD) patients previously included who underwent 750-1,000 UI/die 25(OH)vitamin D supplementation for at least 6 months. Appropriate statistical analysis was performed. The median 25(OH)vitamin D concentration was not significantly different between 119 ARD [33.4 (IQR 22.5-54.9) nmol/l] and 126 NARD patients 32.9 (IQR 18.7-50.2). In stepwise logistic regression, female sex (F:13.7), winter-spring season (F:5.6) and older age (F:5.3), but not ARD, predicted plasma 25(OH)vitamin D < 75 nmol/l. Cholecalciferol

supplementation increased 25(OH)vitamin D plasma concentration equally in both ARD and NARD; however, only 29/100 patients reached a plasma level a parts per thousand yen75 nmol/l without differences between ARD and NARD (chi(2) = n.s.). Hypovitaminosis D is common in rheumatic patients. Sex and age but not ARD are risk factors for this condition. 750-1,000 UI/die of cholecalciferol is not sufficient to normalize plasma level in these patients. Increase of plasma 25(OH)vitamin D after treatment is not influenced by the presence of an inflammatory autoimmune disease.
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TI Differential responsiveness to 17β-estradiol of mesenchymal stem cells from postmenopausal women between osteoporosis and osteoarthritis
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE E2 (17 beta-estradiol); Mesenchymal stem cells; Osteoarthritis; Osteogenic potential; Osteoporosis
ID subchondral bone plate; femoral-head; proliferation; estrogen; marrow; age; estradiol; mscs
AB Differential osteogenic potential and responsiveness to 17 beta-estradiol (E2) of mesenchymal stem cells (MSCs) were found between postmenopausal women with osteoporosis (OP) and osteoarthritis (OA). These results suggest differential biological mechanisms of estrogen deficiency in regulation of bone remodeling between OP and OA. OP and OA are two common disorders in postmenopausal women. The inverse relationship has been suggested between OP and OA, but their mechanisms that relate to estrogen deficiency are not fully understood. The aim of this study was to compare the differential responsiveness to E2 of MSCs from osteoporotic versus osteoarthritic donors. Twenty postmenopausal patients, ten with osteoporotic hip fractures and ten with hip osteoarthritis, were included into this study. MSCs were derived from cancellous bones of femoral heads from OA and OP donors and cultured in osteogenic and adipogenic medium with or without E2 added. The alkaline phosphatase (ALP) activity, calcium content, calcified nodules, lipid droplets, messenger RNA (mRNA) expression of ALP, osteocalcin (OC), collagen 1 alpha (COL1 alpha), peroxisome proliferators-activated receptor

gamma 2 (PPAR gamma 2) and lipoprotein lipase (LPL) were measured and compared between two groups with OP and OA. In osteogenic medium, ALP activity, calcium content and mRNA expression of OC and COL1 alpha in MSCs from OA were significantly higher than those from OP group. In adipogenic condition, there was no significant difference in lipid droplets formation and mRNA expression of PPAR gamma 2 and LPL between OP and OA groups. With E2 added in osteogenic medium, ALP activity, calcium content and OC mRNA were significantly higher in OP group than in OA group, whereas E2 had no significant effect on lipid droplet formation and mRNA expression of PPAR gamma 2 and LPL. Differential osteogenic potential and responsiveness to E2 of MSCs were found between postmenopausal women with OP and OA. These results may provide information for clinical application of MSCs in the differential setting of estrogen deficiency.
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TI Comparative high-resolution pQCT analysis of femoral neck indicates different bone mass distribution in osteoporosis and osteoarthritis
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Femoral fracture; Femoral neck; Osteoarthritis; Osteoporosis; pQCT
ID quantitative computed-tomography; mineral density; hip osteoarthritis; cancellous bone; trabecular bone; proximal femur; cortical porosity; knee; strength; women
AB Osteoarthritis is linked to a reduced risk of femoral fracture despite osteoporosis. Different bone distribution in the femoral neck in osteoarthritis and fracture was revealed using a peripheral quantitative computed tomography (pQCT) comparative analysis. Our findings sustain the presence of an adaptive mechanism of bone structure providing fracture protection in osteoarthritis. Although osteoarthritis is associated with reduced femoral fracture risk, it does not protect from bone loss. We investigated whether adaptive mechanisms are present at the arthritic joint, leading to reduced fracture risk, despite the presence of low bone mass density. We performed pQCT comparative analyses of human femoral neck specimens derived from 32 postmenopausal women who received hip prostheses for osteoarthritis (n = 19) or femoral fracture (n = 13) by applying an

in-house automated software to extract bone structure descriptors, characterize trabecular and cortical bone distribution, and evaluate their mutual relationships. The cortical bone volume and trabecular thickness were significantly ($p < 0.05$) higher in the osteoarthritis group than in the fracture group. Trabecular bone volume was also significantly ($p < 0.05$) higher in the osteoarthritis group than the fracture group at the inferior and anterior quadrants. Significance was maintained after adjusting for age, cortical bone volume, and cortical porosity thickness. Multiple linear regression analysis showed that thickness, volume, and apparent density of the trabecular region significantly ($p < 0.05$) correlated with the same cortical descriptors in osteoarthritis, but no significant relationship was found in the fracture group. Age differentially affected the mutual relationships in the two groups, showing a significant correlation with trabecular thickness in both groups and with apparent trabecular density only in femoral fracture group. Starting from these differences in the structural descriptors, our study sustains the presence of a compensatory mechanism in osteoarthritis to preserve the mechanical competence of bone structure, despite the loss of trabecular bone, underlying lower fracture risk.

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TI Knee Pain in Patients With Cancer After Chemotherapy, Radiotherapy, and Bone Marrow Transplantation

SO ORTHOPEDICS
LA English
DT Article
ID avascular necrosis; septic arthritis; rheumatoid-arthritis; prostate-cancer; therapy; osteonecrosis; osteoporosis; risk; metastasis; infections
AB The causes of knee pain in patients with cancer with are different from those without cancer, and the purpose of this study was to evaluate these differences. Thirty-six patients with cancer who had knee pain who had undergone 1 or more modalities of treatment, including chemotherapy, radiotherapy, and bone marrow transplant, for a primary diagnosis of cancer were compared with a cohort of 40 patients without cancer who had knee pain. All patients were evaluated clinically and underwent radiographic examination, and some underwent computed tomography or magnetic resonance imaging examination. Among patients with a primary diagnosis of cancer, the most common diagnosis was lymphoma (n=10), and the most common causes of knee pain were avascular necrosis of bone, osteoarthritis, insufficiency fractures, and septic arthritis. In 5 patients, the classical signs of a septic knee were not present. Other causes of knee pain included meniscus tear and anterior cruciate ligament rupture with instability. The most common diagnosis in patients without cancer was osteoarthritis of the knee. No patient without cancer was diagnosed with avascular necrosis, metastatic lesion, or insufficiency fracture. Two patients without cancer were diagnosed with septic arthritis of the knee. This study showed that the causes of knee pain in patients with cancer are different from those without cancer. Septic arthritis may present without the classical clinical signs in patients with cancer, and a high index of suspicion should be maintained for it.
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ZIZIC TM, 1985, AM J MED, V79, P596, DOI 10.1016/0002-9343(85)90057-9
NR 23
TC 4
Z9 5
U1 0
U2 2
PU SLACK INC
PI THOROFARE
PA 6900 GROVE RD, THOROFARE, NJ 08086 USA
SN 0147-7447
EI
J9 ORTHOPEDICS
JI Orthopedics
PD AUG 15
PY 2012
VL 35
IS 8
BP E1177
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DI 10.3928/01477447-20120725-16
PG 7
WC Orthopedics
SC Orthopedics
GA 988UI
UT WOS:000307515800006
PM 22868602
DA 2026-02-10
ER

PT J
AU Ringe, JD
Schäfer, S
Wimmer, AM
Giesecke, T
AF Ringe, Johann D.
Schaefer, Susanne
Wimmer, Antonie M.
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TI Use of OROS® hydromorphone in the treatment of osteoarthritis and osteoporosis: A pooled analysis of three non-interventional studies focusing on different starting doses
SO WIENER KLINISCHE WOCHENSCHRIFT
LA English
DT Article
DE OROS (R); hydromorphone; opioid; osteoarthritis; osteoporosis; dosing
ID chronic nonmalignant pain; chronic noncancer pain; opioid-naive patients; release oxycodone; formulation; efficacy; cancer; noninferiority; tolerability; management
AB OBJECTIVE: To determine the effect of a lower starting dose of OROSA (R) hydromorphone compared with a higher starting dose. DESIGN: Data from the first 15 days of treatment were compared in a combined analysis of three prospective, non-interventional studies. SETTING: Non-interventional, carried out in daily routine settings. PATIENTS: Patients had chronic severe pain due to osteoarthritis or from fragility fractures related to osteoporosis. INTERVENTIONS: OROS-ANA-4001 and OROS-ANA-4002 had a daily starting dose of 8 mg of OROSA (R) hydromorphone; OROS-ANA-4003 had a daily starting dose of 4 mg. MAIN OUTCOME MEASURE(S): A post-hoc analysis to assess the effect of a low starting dose of OROSA (R) hydromorphone on tolerability, pain control, and treatment satisfaction overall and for subgroups of opioid-na < ve patients versus patients previously treated with opioids, and patients aged > 65 years versus patients aged a parts per thousand currency sign65 years. RESULTS: Treatment satisfaction and pain control improved in all studies; treatment satisfaction improved in a higher percentage of patients in the lower starting dose group.

Gastrointestinal disorders were the most frequent treatment-emergent adverse events. Incidence of nausea was comparable between studies. Incidence of constipation, vomiting, fatigue, and pruritus was less frequent with the lower starting dose. In elderly and opioid-na < ve patients, a lower starting dose was associated with lower overall incidence of adverse events, treatment-related adverse events, and those leading to discontinuation. CONCLUSIONS: A lower starting dose was associated with better tolerability and a lower number of treatment terminations at a comparable level of pain control with high treatment satisfaction.
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NR 30
TC 5
Z9 7
U1 0
U2 4
PU SPRINGER WIEN
PI WIEN
PA SACHSENPLATZ 4-6, PO BOX 89, A-1201 WIEN, AUSTRIA
SN 0043-5325
EI
J9 WIEN KLIN WOCHENSCHR
JI Wien. Klin. Wochen.
PD JAN 15
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IS 1-2
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EP 31
DI 10.1007/s00508-011-0076-y
PG 7
WC Medicine, General & Internal
SC General & Internal Medicine
GA 892LB
UT WOS:000300286600004
PM 22045112
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PT J

AU Mohanty, CB
Shukla, DP
Devi, BI
Sampath, S
AF Mohanty, Chandan B.
Shukla, Dhaval P.
Devi, B. Indira
Sampath, S.
TI Craniovertebral junction pathology in high cervical disc disease
SO BRITISH JOURNAL OF NEUROSURGERY
LA English
DT Article
DE atlanto-axial osteoarthritis; high cervical disc prolapse; Nurick's grade; stress level
ID increased signal intensity; of-the-literature; spondylotic myelopathy; basilar invagination; surgical approach; spinal-cord; mr-images; osteoarthritis; compression; herniation
AB Objective. To establish predisposing factors of high cervical disc degeneration (HCDD) with an emphasis on the presence or absence of craniovertebral junction (CVJ) pathology by a retrospective analysis of clinical and radiologic parameters of patients operated at our institute. Methods. Thirty-seven patients of C3-4 prolapsed intervertebral disc (PIVD) were compared with 45 patients of C5-6 PIVD. Nurick's grade was used for clinical assessment. Radiological parameters like congenital and osteoarthritic changes at CVJ along with measurement of stress levels in flexion and extension on X-rays were done. Results. Mean age of C3-4 PIVD patients (48.16 years, range 26-65 years) was significantly higher than C5-6 PIVD patients (38.13 years, range 21-55 years) ($p < 0.001$). CVJ pathology was seen in significantly higher proportion in patients with C3-4 PIVD (18/37) in comparison to C5-6 PIVD (4/45) ($p < 0.001$). C3-4 PIVD patients presented with a poorer pre-op and post-op Nurick's grade. T2 hyperintense intramedullary signal change was seen in 91.8% (34/37) of C3-4 PIVD patients as compared to 66.67% (30/45) of C5-6 PIVD patients ($p < 0.001$). Conclusion. CVJ pathology is a predisposing factor for HCDD. HCDD presents in a poorer Nurick's grade compared to lower cervical PIVD and majority of the patients have T2 hyperintense intramedullary signal changes in MRI. Presence of T2 hyperintense intramedullary signal changes is associated with poorer pre-op clinical status and poorer post-op outcome.
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NR 23
TC 0
Z9 0
U1 0
U2 3
PU INFORMA HEALTHCARE
PI LONDON
PA TELEPHONE HOUSE, 69-77 PAUL STREET, LONDON EC2A 4LQ, ENGLAND
SN 0268-8697
EI
J9 BRIT J NEUROSURG
JI Br. J. Neurosurg.
PD DEC 15
PY 2012
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IS 6

BP 845
EP 850
DI 10.3109/02688697.2012.690918
PG 6
WC Clinical Neurology; Surgery
SC Neurosciences & Neurology; Surgery
GA 043KY
UT WOS:000311543700011
PM 22698391
DA 2026-02-10
ER

PT J
AU Power, J
Doube, M
van Bezooijen, RL
Loveridge, N
Reeve, J
AF Power, Jon
Doube, Michael
van Bezooijen, Rutger L.
Loveridge, Nigel
Reeve, Jonathan
TI Osteocyte recruitment declines as the osteon fills in: Interacting effects of osteocytic sclerostin and previous hip fracture on the size of cortical canals in the femoral neck
SO BONE
LA English
DT Article
DE Sclerostin; Osteocyte; Osteon; Bone remodelling; Osteoporosis; Fractured neck of femur
ID bone-formation; cancellous bone; osteoblast function; 3d structure; density; cortex; expression; osteoarthritis; activation; mechanism
AB There is little information on the distribution of osteocytes within the individual cortical osteon, but using direct 3-D imaging in a single subject, Hannah et al. found a gradient with a two-fold higher density of cells adjacent to the cement line compared to near the canal. Since a limiting factor for bone formation might be the availability of osteoblasts due to their recruitment as osteocytes, we studied distributions of osteonal osteocytes in frozen sections of the femoral neck cortex. Osteocytes were stained with an anti-sclerostin antibody and counter-stained with toluidine blue. Adjacent sections were stained for alkaline phosphatase (ALP). Each osteonal osteocyte was categorised as being sclerostin-positive (scl +) or negative (scl-). ImageJ was used to measure the perimeter and area of each osteon and canal, while special purpose routines were used to measure the minimum distances

of each osteocyte from the cement line and the canal. Canal area was strongly correlated with osteon area. Osteocytes were most dense close to the cement line; and their areal density within the matrix declined up to three-fold between the cement line and the canal, depending on osteon diameter. Large and small osteons had similar densities of osteocytes close to the cement line, but fractured neck of femur cases had significantly lower densities of osteocytes close to the canal. Higher osteocyte density close to the canal was associated with ALP expression. It is concluded that entombment of osteocytes newly drawn from the osteoblast pool into the mineralising matrix is independent of preceding bone resorption depth. As osteonal mulling proceeds, osteocyte formation declines more rapidly than matrix formation, leading to a progressive reduction in osteocyte density. A shrinking supply of precursor osteoblasts due to previous osteocyte recruitment, apoptosis, or both could produce this effect. In a statistically significant contrast, sclerostin negative osteocytes adjacent to the canal had the expected effect of reducing canal size in controls but this was not seen in hip fracture. This demonstrated the failure of osteonal osteoblasts to sustain bone formation through a complete remodelling cycle in osteoporosis, perhaps due to insufficient osteoblasts remaining capable of mineralized matrix formation. The failure of osteocytic sclerostin suppression to associate with bone formation in these osteons might alternatively be explained by downstream interference with sclerostin's effect on wnt signalling. Crown Copyright (C) 2012 Published by Elsevier Inc. All rights reserved.
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FU ARC [17173]; ASBMR; NIHR Biomedical Research Centre (Cambridge),; EU [Health-F2-2008-201099]
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NR 48
TC 14
Z9 19
U1 0
U2 11
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA
SN 8756-3282
EI 1873-2763
J9 BONE
JI Bone
PD MAY 15
PY 2012
VL 50
IS 5
BP 1107
EP 1114
DI 10.1016/j.bone.2012.01.016
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 932EY
UT WOS:000303274400012
PM 22353552
DA 2026-02-10
ER

PT J
AU Blagosklonny, MV
AF Blagosklonny, Mikhail V.
TI Prospective Treatment of Age-Related Diseases by Slowing Down Aging
SO AMERICAN JOURNAL OF PATHOLOGY
LA English
DT Review
ID extends life-span; caloric restriction; cell-cycle; transplant recipients; insulin-resistance; mtor inhibitor; oral rapamycin; senescence; sirolimus; progression
AB Atherosclerosis, hypertension, obesity, diabetic complications, cancer, benign prostate hyperplasia, Alzheimer and Parkinson diseases, age-related macular

degeneration, osteoarthritis, osteoporosis, and seborrheic keratosis are strongly associated with aging, implying a common underlying process. Each disease is treated separately and, in most cases, symptomatically. Suppression of aging itself should delay or treat all age-related diseases, thus increasing healthy life span and maximal longevity. But, is it possible to slow down aging? Recent evidence indicates that the target of rapamycin signaling pathway is involved in cellular senescence and organismal aging. Preclinical and clinical studies demonstrated the therapeutic effects of rapamycin in diverse age-related diseases. One simple reason why a single drug is indicated for so many age-related diseases is that it inhibits the aging process. (Am J Pathol 2012, 181:1142-1146; http://dx.doi.org/10.1016/j.ajpath.2012.06.024)
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NR 63
TC 83
Z9 89
U1 1
U2 36
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA
SN 0002-9440
EI 1525-2191
J9 AM J PATHOL
JI Am. J. Pathol.
PD OCT 15
PY 2012
VL 181
IS 4
BP 1142
EP 1146
DI 10.1016/j.ajpath.2012.06.024
PG 5
WC Pathology
SC Pathology
GA 017DK
UT WOS:000309570100003
PM 22841821
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ER

PT J
AU Hulin-Curtis, SL
Bidwell, JL
Perry, MJ
AF Hulin-Curtis, S. L.
Bidwell, J. L.

Perry, M. J.
TI Tumour necrosis factor receptor superfamily member 11B polymorphisms and association with knee osteoarthritis in women
SO INTERNATIONAL JOURNAL OF IMMUNOGENETICS
LA English
DT Article
ID bone-mineral density; osteoprotegerin gene; postmenopausal women; candidate genes; opg; osteoporosis; population; cartilage; men
AB We examined single-nucleotide polymorphisms (SNPs) across the tumour necrosis factor receptor superfamily member 11B (TNFRSF11B) gene and knee OA. We identified alleles in a VNTR region in intron 3 that was observed exclusively in women OA cases (P = 0.007, Pc = 0.042). Our results reveal that a previously unreported association between a VNTR genotype in TNFRSF11B and knee OA in women.
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NR 18

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Z9 1
U1 0
U2 4
PU WILEY-BLACKWELL
PI MALDEN
PA COMMERCE PLACE, 350 MAIN ST, MALDEN 02148, MA USA
SN 1744-3121
EI
J9 INT J IMMUNOGENET
JI Int. J. Immunogenet.
PD JUN 15
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VL 39
IS 3
BP 207
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DI 10.1111/j.1744-313X.2012.01083.x
PG 3
WC Genetics & Heredity; Immunology
SC Genetics & Heredity; Immunology
GA 940SJ
UT WOS:000303913100004
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PT J
AU Delgado-Calle, J
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TI Role of DNA methylation in the regulation of the RANKL-OPG system in human bone
SO EPIGENETICS
LA English

DT Article
DE DNA methylation; osteoporosis; bone remodeling; osteoblasts
ID kappa-b ligand; receptor activator; 1,25-dihydroxyvitamin d-3; osteoprotegerin opg; gene-expression; messenger-rna; in-vitro; osteoclastogenesis; cells; protein
AB Osteoblasts are specialized cells that form new bone and also indirectly influence bone resorption by producing factors that modulate osteoclast differentiation. Although the methylation of CpG islands plays an important role in the regulation of gene expression, there is still scanty information about its role in human bone. The aim of this study was to investigate the influence of CpG methylation on the transcriptional levels of two osteoblast-derived critical factors in the regulation of osteoclastogenesis: the receptor activator of nuclear factor NF kappa B ligand (RANKL) and its soluble decoy receptor osteoprotegerin (OPG). Quantitative methylation specific PCR (qMSP) and pyrosequencing analysis in various cell types showed that the methylation of regulatory regions of these genes, in the vicinity of the transcription start sites, repressed gene transcription, whereas an active transcription was associated with low levels of methylation. In addition, treatment with the DNA demethylating agent 5-azadeoxycitidine promoted a 170-fold induction of RANKL and a 20-fold induction of OPG mRNA expression in HEK-293 cells, which showed hypermethylation of the CpG islands and barely expressed RANKL and OPG transcripts at baseline. Transcriptional levels of both genes were also explored in bone tissue samples from patients with hip fractures and hip osteoarthritis. Although RANKL transcript abundance and the RANKL: OPG transcript ratio were significantly higher in patients with fractures than in those with osteoarthritis (RANKL: 0.76 +/- 0.23 vs. 0.24 +/- 0.08, p = 0.012; RANKL: OPG: 7.66 +/- 2.49 vs. 0.92 +/- 0.21, p = 0.002), there was no evidence for differential methylation across patient groups. In conclusion, the association between DNA methylation and the repression of RANKL and OPG expression strongly suggests that methylation-dependent mechanisms influence the transcription of these genes, which play a critical role in osteoclastogenesis. However, other mechanisms appear to be involved in the increased RANKL/OPG ratio of patients with osteoporotic fractures.
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NR 43
TC 98
Z9 110
U1 0
U2 9
PU TAYLOR & FRANCIS INC
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PA 530 WALNUT STREET, STE 850, PHILADELPHIA, PA 19106 USA
SN 1559-2294
EI 1559-2308
J9 EPIGENETICS-US
JI Epigenetics
PD JAN 15
PY 2012
VL 7
IS 1
BP 83
EP 91
DI 10.4161/epi.7.1.18753
PG 9
WC Biochemistry & Molecular Biology; Genetics & Heredity
SC Biochemistry & Molecular Biology; Genetics & Heredity
GA 886CN
UT WOS:000299828900010
PM 22207352
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PT J
AU Hagen, KB
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TI Exercise therapy for bone and muscle health: an overview of systematic reviews
SO BMC MEDICINE
LA English
DT Review
DE fibromyalgia; low back pain; neck pain; shoulder pain; osteoarthritis; rheumatoid arthritis; ankylosing spondylitis; osteoporosis; pain; physical function
ID nonspecific neck pain; low-back-pain; rheumatoid-arthritis; musculoskeletal; risk; interventions; osteoarthritis; management; criteria; quality
AB Background: Musculoskeletal conditions (MSCs) are widely prevalent in present-day society, with resultant high healthcare costs and substantial negative effects on patient health and quality of life. The main aim of this overview was to synthesize evidence from systematic reviews on the effects of exercise therapy (ET) on pain and physical function for patients with MSCs. In addition, the evidence for the effect of ET on disease pathogenesis, and whether particular components of exercise programs are associated with the size of the treatment effects, was also explored. Methods: We included four common conditions: fibromyalgia (FM), low back pain (LBP), neck pain (NP), and shoulder pain (SP), and four specific musculoskeletal diseases: osteoarthritis (OA), rheumatoid arthritis (RA), ankylosing spondylitis (AS), and osteoporosis (OP). We first included Cochrane reviews with the most recent update being January 2007 or later, and then searched for non-Cochrane reviews published after this date. Pain and physical functioning were selected as primary outcomes. Results: We identified 9 reviews, comprising a total of 224 trials and 24,059 patients. In addition, one review addressing the effect of exercise on pathogenesis was included. Overall, we found solid evidence supporting ET in the management of MSCs, but there were substantial differences in the level of research evidence between the included diagnostic groups. The standardized mean differences for knee OA, LBP, FM, and SP varied between 0.30 and 0.65 and were significantly in favor of exercise for both pain and function. For NP, hip OA, RA, and AS, the effect estimates were generally smaller and not always significant. There was little or no evidence that ET can influence disease pathogenesis. The only exception was for osteoporosis, where there was evidence that ET increases bone mineral density in postmenopausal women, but no

significant effects were found for clinically relevant outcomes (fractures). For LBP and knee OA, there was evidence suggesting that the treatment effect increases with the number of exercise sessions. Conclusions: There is empirical evidence that ET has beneficial clinical effects for most MSCs. Except for osteoporosis, there seems to be a gap in the understanding of the ways in which ET influences disease mechanisms.
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NR 48
TC 102
Z9 114
U1 0
U2 63
PU BMC
PI LONDON

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SN 1741-7015
EI
J9 BMC MED
JI BMC Med.
PD DEC 19
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VL 10
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WC Medicine, General & Internal
SC General & Internal Medicine
GA 103YY
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PT J
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TI Effects of PTH [1-34] on synoviopathy in an experimental model of osteoarthritis preceded by osteoporosis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Osteoporosis; Synovitis; Cartilage damage

ID synovial-membrane inflammation; rheumatoid-arthritis; parathyroid-hormone; tissue inhibitor; crucial role; in-vivo; cartilage; expression; macrophages; knee
AB Purpose: Synoviopathy contributes to cartilage degradation in osteoarthritis (OA). Intermittent parathyroid hormone (PTH) [1-34] administration inhibits terminal differentiation of human chondrocytes and prevents cartilage damage. We aimed to determine whether PTH [1-34] could modify synovial changes in experimental OA preceded by osteoporosis (OP). Methods: Twenty osteoporosis (OP) rabbits underwent knee surgery to induce OA. They were administered either saline vehicle or PTH for 10 weeks. Ten healthy rabbits were used as controls. Following sacrifice, synovial changes were assessed by Krenn synovitis score, immunohistochemistry for macrophages (RAM-11), B and T lymphocytes, type I collagen, parathyroid hormone 1 receptor (PTH1R), and anti-proliferating cell nuclear antigen (PCNA). Synovial mRNA levels of Col1A1, IL-1 beta cyclooxygenase 2 (COX-2), matrix-degrading metalloproteinases (MMP-9, MMP-13), and monocyte chemotactic protein-1 (MCP-1), as well as protein expression of PTH1R were also determined. Cartilage damage was analyzed by Mankin score. Results: OPOA + vehicle rabbits showed an increase in synovitis score vs controls (P = 0.003), mainly due to synovial hyperplasia and fibrosis, while PTH reduced these changes (P = 0.017). Mankin and Krenn scores were well correlated in all groups (r = 0.629, P = 0.012). Immunostaining for RAM-11 and B lymphocytes was increased (P <= 0.05), whereas PTH1R protein levels tended to be higher in OPOA + vehicle animals vs controls. PTH did not modify RAM-11 staining or PTH1R levels; however, it restored PTH1R localization to the vicinity of synovial vessels. PTH also decreased type I collagen, MCP-1, and MMP-13 expression (P < 0.05), as well as PCNA staining compared to vehicle-treated OPOA rabbits. Conclusions: In our model of OA aggravated by previous OP, synoviopathy correlated well with cartilage damage. Intermittent PTH [1-34] administration ameliorated both hyperplasia and fibrosis.
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AU Dennison, EM
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TI Effect of co-morbidities on fracture risk: Findings from the Global Longitudinal

Study of Osteoporosis in Women (GLOW)
SO BONE
LA English
DT Article
DE Fracture risk; Co-morbidities; Parkinson's disease; Multiple sclerosis; FRAX
ID bone-mineral density; population-based cohort; parkinsons-disease; cardiovascular-disease; celiac-disease; older men; association; metaanalysis; epidemiology; turnover
AB Introduction: Greater awareness of the relationship between co-morbidities and fracture risk may improve fracture-prediction algorithms such as FRAX. Materials and methods: We used a large, multinational cohort study (GLOW) to investigate the effect of co-morbidities on fracture risk. Women completed a baseline questionnaire detailing past medical history, including co-morbidity history and fracture. They were re-contacted annually to determine incident clinical fractures. A co-morbidity index, defined as number of baseline co-morbidities, was derived. The effect of adding the co-morbidity index to FRAX risk factors on fracture prevention was examined using chi-squared tests, the May-Hosmer test, c index and comparison of predicted versus observed fracture rates. Results: Of 52,960 women with follow-up data, enrolled between October 2006 and February 2008, 3224 (6.1%) sustained an incident fracture over 2 years. All recorded co-morbidities were significantly associated with fracture, except for high cholesterol, hypertension, celiac disease, and cancer. The strongest association was seen with Parkinson's disease (age-adjusted hazard ratio [HR]: 2.2; 95% CI: 1.6-3.1; P<0.001). Co-morbidities that contributed most to fracture prediction in a Cox regression model with FRAX risk factors as additional predictors were: Parkinson's disease, multiple sclerosis, chronic obstructive pulmonary disease, osteoarthritis, and heart disease. Conclusion: Co-morbidities, as captured in a co-morbidity index, contributed significantly to fracture risk in this study population. Parkinson's disease carried a particularly high risk of fracture; and increasing co-morbidity index was associated with increasing fracture risk. Addition of co-morbidity index to FRAX risk factors improved fracture prediction. (C) 2012 Elsevier Inc. All rights reserved.
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AU Eriksen, EF
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TI Bone marrow lesions: a universal bone response to injury?
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Review
DE Bone marrow lesions; Bone marrow edema; Bone histomorphometry; Osteoarthritis; Rheumatoid arthritis; Bisphosphonates; Tendinitis; Sudeks atrophy; Calcitonin; MRI; Ultrasound
ID edema syndrome; rheumatoid-arthritis; femoral-head; mri findings; transient osteoporosis; ultrasound detection; knee osteoarthritis; biochemical markers; hip osteoarthritis; disease-activity
AB The ever increasing use of magnetic resonance imaging in clinical practice has led to the recognition of a new entity, bone marrow lesions (BMLs). These lesions are characterized by excessive water signals in the marrow space and have emerged as a central component of many different diseases affecting the musculoskeletal system. BMLs have in particular been associated with a wide variety of inflammatory and non-inflammatory rheumatologic conditions and are not only considered significant sources of pain, but also linked to the worsening of patient prognosis in many disease states. In this review, we summarize the current knowledge on BMLs with an emphasis on the clinical and histological features of this entity in inflammatory and non-inflammatory disease and provide a unifying hypothesis based on the appearance with various imaging technologies. We also try to pair this hypothesis with the apparent beneficial effects of various treatment regimens, mainly within the group of bone antiresorptive drugs (calcitonin, bisphosphonates) on symptoms associated with BMLs.
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NR 77
TC 55
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TI The natural history of bone bruise and bone remodelling in the traumatised hip
A prospective 2-year follow-up study of bone bruise changes and DEXA measurements in 13 patients with conservatively treated traumatic hip dislocations and/or fractures
SO INJURY-INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED
LA English
DT Article
DE Traumatic hip dislocation; Acetabular fracture; Bone bruise; Bone marrow oedema; Bone marrow lesions; Magnetic resonance imaging; Trauma; DXA; Bone marrow density; Bone remodelling; Transient osteopenia; Posttramatic osteopenia; Osteoporosis; Regions of interest; ROI; Osteoarthritis; Harris hip score
ID anterior cruciate ligament; occult osseous lesions; osteochondral lesions; posterior dislocation; femoral-head; injury; knee; classification; cartilage; tears
AB Introduction: The purpose of this study was to assess the natural history of bone bruise and bone mineral density (BMD) after traumatic hip dislocations and conservatively treated acetabular fractures. Our hypothesis was that poor bone quality can influence degree of bone bruise and, in time, cause degenerative changes. Materials and methods: Eight consecutive patients with traumatic hip dislocations and five patients with conservatively treated fractures in the femoral head and/or acetabulum were included. Magnetic resonance imaging (MRI) was obtained after 1, 17, 42, 82 and 97 weeks. Dual-emission X-ray absorptiometry (DXA) measurements were made after 10 days and 2 years. Sizes of bone bruise lesions were measured and classified. At the 2-year follow-up, Harris hip score (HHS) was calculated and signs of radiological osteoarthritis (OA) registered. Results: The bone bruise changes were small and all changes resolved within 42 weeks in all, except for three patients; one with a small Pipkin fracture had segmental avascular necrosis (AVN) of the femoral head, one had persisting1-3 mm small spots of bone bruises in the femoral head and the third had <1 cm lesions in both the femoral head and the acetabulum. The lesions were bigger in the femoral head in the hip dislocations and more pronounced in the acetabulum in the fractured acetabuli. We found no significant changes in BMD in four regions of interest (ROIs) after 2 years. No patients developed OA, and all had excellent HHS except for the one patient with AVN. Conclusion: The post-traumatic bone bruise changes in the dislocated hips and the fractured acetabuli were small and transient compared to findings of other authors examining traumatised knees. The patients

had excellent function and no OA after 2 years if they did not develop AVN. In our small sample of relatively young patients with normal age-adjusted BMD, no post-traumatic osteopenia was observed. This might differ in the elderly with poorer bone quality; further studies are needed to assess that. (c) 2012 Elsevier Ltd. All rights reserved.
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TI Efficacy and safety of oral strontium ranelate for the treatment of knee osteoarthritis: rationale and design of randomised, double-blind, placebo-controlled trial
SO CURRENT MEDICAL RESEARCH AND OPINION
LA English
DT Article
DE DMOAD; Joint space width; Knee osteoarthritis; Knee radiograph; Randomized clinical trial; Strontium ranelate; Structure-modifying treatment
ID cartilage degradation; biochemical markers; chondroitin sulfate; health-status;

progression; hip; women; bone; radiographs; glucosamine
AB Objective: The osteoporosis drug strontium ranelate dissociates bone remodelling processes. It also inhibits subchondral bone resorption and stimulates cartilage matrix formation in vitro. Exploratory studies in the osteoporosis trials report that strontium ranelate reduces biomarkers of cartilage degradation, and attenuates the progression and clinical symptoms of spinal osteoarthritis, suggesting symptom-and structure-modifying activity in osteoarthritis. We describe the rationale and design of a randomised trial evaluating the efficacy and safety of strontium ranelate in knee osteoarthritis. Research design, methods, and results: This double-blind, placebo-controlled trial (98 centres, 18 countries) includes ambulatory Caucasian men and women aged >= 50 years with primary knee osteoarthritis of the medial tibiofemoral compartment (Kellgren and Lawrence grade 2 or 3), joint space width (JSW) 2.5 to 5 mm, and knee pain on most days in the previous month (intensity >= 40mm on a visual analogue scale). Patients are randomly allocated to three groups (strontium ranelate 1 or 2 g/day, or placebo). Follow-up is expected to last 3 years. The primary endpoint is radiographic change in JSW from baseline in each group versus placebo. The main clinical secondary endpoint is WOMAC score at the knee. Safety is assessed at every visit. It is estimated that 1600 patients are required to establish statistical significance with power >90% (0.2mm +/- 10% between-group difference in change in JSW over 3 years). Recruitment started in April 2006. The results are expected in spring 2012. Clinical trial registration: The trial is registered on www.controlled-trials.com (number ISRCTN41323372). Conclusions: This randomised, double blind, placebo-controlled study will establish the potential of strontium ranelate in improving structure and symptoms in patients with knee osteoarthritis.
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SC General & Internal Medicine; Research & Experimental Medicine
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AF Li, Zhan-Chun
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TI Difference in Subchondral Cancellous Bone Between Postmenopausal Women With Hip Osteoarthritis and Osteoporotic Fracture Implication for Fatigue Microdamage, Bone Microarchitecture, and Biomechanical Properties
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID human trabecular bone; human cortical bone; damage morphology; marrow lesions; articular-cartilage; mineral density; femoral-head; tissue; age; pathogenesis
AB Objective. Osteoarthritis (OA) and osteoporosis (OP) of the hip rarely occur in the same patient. The purpose of this study was to determine whether this difference might be attributable to the different quantity and quality of subchondral cancellous bone in the two conditions. Methods. Subchondral cancellous bone from the femoral head was obtained at the time of hip arthroplasty from 60 postmenopausal women, 30 with OA and 30 with OP. In each group, 10 specimens were subjected to compressive fatigue loading and 20 were left non-loaded. Specimens were examined by compressive mechanical testing, micro-computed tomography scanning, fluorescence microscopy, and

nanoindentation techniques. Results. Both the ultimate stress and the elastic modulus of cancellous bone from OA patients were significantly higher than those of cancellous bone from OP patients ($P < 0.05$). Compared to cancellous bone from OP patients, the bone volume fraction and trabecular thickness were significantly increased, but bone matrix mineralization was significantly decreased, in cancellous bone from OA patients ($P < 0.05$ for each comparison). The microcrack density was significantly higher in OP cancellous bone than in OA cancellous bone ($P < 0.001$), irrespective of fatigue loading. In addition, fatigue loading resulted in a significant increase in microcrack density in both OA and OP cancellous bone ($P < 0.001$). There was no significant difference in nanoindentation elastic modulus and hardness between cancellous bone from OA and OP patients, as well as between bones with and without fatigue loading. Conclusion. The difference in mechanical properties between OA and OP cancellous bone is attributed to different bone mass and bone structure. OP cancellous bone is susceptible to fatigue damage due to insufficient structure. However, increased bone volume and plate-like structure provide OA cancellous bone a superior capacity to resist fatigue damage.
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NR 50
TC 40
Z9 43
U1 0
U2 33
PU WILEY-BLACKWELL
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0004-3591
EI
J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
PD DEC 15
PY 2012
VL 64
IS 12
BP 3955
EP 3962
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WC Rheumatology
SC Rheumatology
GA 045ON
UT WOS:000311706300016
PM 23124609
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PT J
AU Dragojevic, J
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AF Dragojevic, Jana
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TI Triglyceride metabolism in bone tissue is associated with osteoblast and osteoclast differentiation: a gene expression study

SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Lipolysis; Lipogenesis; Free fatty acid; Bone tissue
ID messenger-rna; fatty-acids; adiponectin; osteoarthritis; proliferation; adipocytes; fracture; density; lipase; ratio
AB The role of bone marrow adipocytes in bone tissue is not yet understood. Adipocytes express enzymes for metabolism of free fatty acids and adipokines such as adiponectin, which have been shown to exert different effects on bone cells. Our aim was to find out whether triglyceride (TG) metabolism in bone tissue is associated with osteoblast and osteoclast differentiation by gene expression analysis of lipoprotein lipase (LPL), hormone sensitive lipase (HSL), fatty acid synthase (FASN), adiponectin, RUNX2, RANK, RANKL and OPG. Bone tissue was obtained from patients undergoing hip arthroplasty due to osteoporosis (OP) (50) or osteoarthritis (OA) (48) or from healthy autopsy controls (14). Lower bone mineral density and microstructural parameters were observed in OP compared to OA. The FASN expression did not differ between groups suggesting similar de novo lipogenesis. Lower LPL and HSL in OP suggest lower FFA release and uptake in OP bone tissue. Adiponectin expression was lower in OP than in OA and a trend was seen for controls. These results suggest OP bone has lower TG metabolism than OA and normal bone. In OP bone, lower osteoblastogenesis and higher osteoclast formation were observed and correlation analysis suggests adiponectin, LPL and HSL are associated with higher osteoblastogenesis and lower osteoclastogenesis. This study gives insights into TG metabolism in the human bone microenvironment. We conclude that OP bone tissue exhibits lower osteoblastogenesis, higher osteoclastogenesis and lower TG metabolism compared to OA or healthy controls.
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NR 30
TC 36
Z9 44
U1 1
U2 11
PU SPRINGER JAPAN KK
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PA SHIROYAMA TRUST TOWER 5F, 4-3-1 TORANOMON, MINATO-KU, TOKYO,

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J9 J BONE MINER METAB
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EP 519
DI 10.1007/s00774-013-0445-x
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WC Endocrinology & Metabolism; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Research & Experimental Medicine
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PT J
AU Adams, J
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AF Adams, Jon
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TI Ω-3 fatty acid supplement use in the 45 and Up Study Cohort
SO BMJ OPEN
LA English
DT Article
DE COMPLEMENTARY MEDICINE; NUTRITION & DIETETICS; PUBLIC HEALTH
ID alternative medicine cam; n-3 fatty-acids; cardiovascular-disease; fish-oil; complementary; risk; association; cancer
AB Objective There has been a dramatic increase in the use of dietary supplements in Western societies over the past decades. Our understanding of the prevalence of -3 fatty acid supplement consumption is of significance for future nutrition planning, health promotion and care delivery. However, we know little about -3 fatty acid supplement consumption or users. This paper, drawing upon the largest

dataset with regard to -3 fatty acid supplement use (n=266848), examines the use and users of this supplement among a large sample of older Australians living in New South Wales. Design A cross-sectional study. Data were analysed from the 45 and Up Study, the largest study of healthy ageing ever undertaken in the Southern Hemisphere. Setting New South Wales, Australia. Participants 266848 participants of the 45 and Up Study. Primary and secondary outcome measures Participants' use of -3, demographics (geographical location, marital status, education level, income and level of healthcare insurance) and health status (quality of life, history of smoking and alcohol consumption, health conditions) were measured. Results Of the 266848 participants, 32.6% reported having taken -3 in the 4weeks prior to the survey. Use of -3 fatty acid supplements was higher among men, non-smokers, non-to-mild (alcoholic) drinkers, residing in a major city, having higher income and private health insurance. Osteoarthritis, osteoporosis, high cholesterol and anxiety and/or depression were positively associated with -3 fatty acid supplement use, while cancer and high blood pressure were negatively associated with use of -3 fatty acid supplements. Conclusions This study, analysing data from the 45 and Up Study cohort, suggests that a considerable proportion of older Australians consume -3 fatty acid supplements. There is a need for primary healthcare practitioners to enquire with patients about this supplement use and for work to ensure provision of good-quality information for patients and providers with regard to -3 fatty acid products.
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NR 30
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U1 0
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PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR, ENGLAND
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WC Medicine, General & Internal
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PT J
AU Suzuki, M
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Ozawa, Tomoyuki
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TI Vertebral Compression Exacerbates Osteoporotic Pain in an Ovariectomy-Induced Osteoporosis Rat Model
SO SPINE
LA English
DT Article
DE osteoporotic pain; low back pain (LBP); ovariectomized (OVX) osteoporotic rats; dorsal root ganglia (DRG); calcitonin gene-related peptide (CGRP); inflammatory pain; activating transcription factor 3 (ATF-3); neuropathic pain; dynamic compression; caudal vertebra
ID peripheral-nerve injury; transcription factors; intervertebral discs; sensory innervation; nucleus pulposus; expression; neurons; family; atf3; osteoarthritis
AB Study Design. Basic pain study using osteoporotic rodent models. Objective. To examine alterations in distribution of pain-related neuropeptides after compressive force on osteoporotic vertebrae and their chronic pain-related properties. Summary of Background Data. We previously reported significantly increased production of calcitonin gene-related peptide (CGRP), a marker of inflammatory pain, in the dorsal root ganglia (DRG) of vertebrae in osteoporosis-model ovariectomized (OVX) rats. Here, we hypothesized that longitudinal compressive force on vertebrae can affect osteoporotic pain properties, which has not been examined yet. Methods. OVX rats were used as the osteoporosis model. Female Sprague-Dawley rats were prepared and Fluoro-Gold (FG) neurotracer was applied to the periosteal surface of the Co5 vertebra. After FG labeling, the animals were divided into 4 groups: Control, Control + compression, OVX, and OVX + compression. The Control groups were not ovariectomized. In the compression groups, K-wires were stabbed transversely through Co4 and Co6 with Co5 compressed longitudinally by rubber bands bridged between the 2. One, 2, 4, and 8 weeks after surgery, bilateral S1 to S3 DRGs were excised for immunofluorescence assays. Expression of CGRP and activating transcription factor

3, a marker of neuronal injury, were compared among the 4 groups. Results. Sustained upregulation of CGRP in DRG neurons was observed after compression of the Co5 vertebra, and Co5 compression caused significant increase in CGRP production in DRG neurons, whereas a greater level of activating transcription factor 3 upregulation was observed in DRGs in OVX rats after dynamic vertebral compression 8 weeks after surgery, implying potential neuropathic pain. Conclusion. There was sustained upregulation of CGRP and activating transcription factor 3 in DRGs in osteoporotic model rats compared with controls, and levels were further enhanced by dynamic vertebral compression. These findings imply that dynamic compression stress on vertebrae can exacerbate osteoporotic pain by inducing both inflammatory and neuropathic pain mediators.
C1 [Suzuki, Miyako; Orita, Sumihisa; Miyagi, Masayuki; Ishikawa, Tetsuhiro; Kamoda, Hiroto; Eguchi, Yawara; Arai, Gen; Yamauchi, Kazuyo; Sakuma, Yoshihiro; Oikawa, Yasuhiro; Kubota, Go; Inage, Kazuhide; Sainoh, Takeshi; Kawarai, Yuya; Yoshino, Kensuke; Takahashi, Kazuhisa; Ohtori, Seiji] Chiba Univ, Dept Orthopaed Surg, Grad Sch Med, Chiba 2608670, Japan.
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ZIFF EB, 1990, TRENDS GENET, V6, P69, DOI 10.1016/0168-9525(90)90081-G
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TC 16
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PU LIPPINCOTT WILLIAMS & WILKINS
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PA 530 WALNUT ST, PHILADELPHIA, PA 19106-3621 USA
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WC Clinical Neurology; Orthopedics
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AF Yan, Wenbo
Li, Xin

TI Impact of diabetes and its treatments on skeletal diseases
SO FRONTIERS OF MEDICINE
LA English
DT Review
DE diabetes; bone; osteoporosis; osteoarthritis
ID glycation end-products; bone-mineral density; factor-kappa-b; fracture risk; osteoblast differentiation; hemodialyzed patients; thiazolidinedione use; postmenopausal women; endocrine regulation; parathyroid-hormone
AB Diabetes mellitus is an enormous menace to public health globally. This chronic disease of metabolism will adversely affect the skeleton if not controlled. Both type 1 diabetes mellitus (T1DM) and type 2 diabetes mellitus (T2DM) are associated with an increased risk of osteoporosis and fragility fractures. Bone mineral density is reduced in T1DM, whereas patients with T2DM have normal or slightly higher bone density, suggesting impaired bone quality is involved. Detrimental effects of T1DM on the skeleton are more severe than T2DM, probably because of the lack of osteo-anabolic effects of insulin and other pancreatic hormones. In both T1DM and T2DM, low bone quality could be caused by various means, including but not limited to hyperglycemia, accumulation of advanced glycosylation end products (AGEs), decreased serum levels of osteocalcin and parathyroid hormone. Risk for osteoarthritis is also elevated in diabetic population. How diabetes accelerates the deterioration of cartilage remains largely unknown. Hyperglycemia and glucose derived AGEs could contribute to the development of osteoarthritis. Moreover, it is recognized that oral antidiabetic medicines affect bone metabolism and turnover as well. Insulin is shown to have anabolic effects on bone and hyperinsulinemia may help to explain the slightly higher bone density in patients with T2DM. Thiazolidinediones can promote bone loss and osteoporotic fractures by suppressing osteoblastogenesis and enhancing osteoclastogenesis. Metformin favors bone formation by stimulating osteoblast differentiation and protecting them against diabetic conditions such as hyperglycemia. Better knowledge of how diabetic conditions and its treatments influence skeletal tissues is in great need in view of the growing and aging population of patients with diabetes mellitus.
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NR 107
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U1 0
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AU Yu, DG
Ding, HF
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TI Strontium ranelate reduces cartilage degeneration and subchondral bone remodeling in rat osteoarthritis model
SO ACTA PHARMACOLOGICA SINICA
LA English
DT Article
DE osteoarthritis; antiosteoporotic agent; strontium ranelate; medial meniscal tear; articular cartilage; subchondral bone; SOX9
ID articular-cartilage; mechanical-property; nanoindentation; chondrocytes; disease; sox9; osteoporosis; osteoblasts; inhibition; expression
AB Aim: To investigate whether strontium ranelate (SR), a new antiosteoporotic agent, could attenuate cartilage degeneration and subchondral bone remodeling in osteoarthritis (OA). Methods: Medial meniscal tear (MMT) operation was performed in adult SD rats to induce OA. SR (625 or 1800 mg.kg(-1).d(-1)) was administered via gavage for 3 or 6 weeks. After the animals were sacrificed, articular cartilage degeneration was evaluated using toluidine blue 0 staining, SOX9 immunohistochemistry and TUNEL assay. The changes in microarchitecture indices and tissue mineral density (TMD), chemical composition (mineral-to-collagen ratio), and intrinsic mechanical properties of the subchondral bones were measured using

micro-CT scanning, confocal Raman microspectroscopy and nanoindentation testing, respectively. Results: The high-dose SR significantly attenuated cartilage matrix and chondrocyte loss at 6 weeks, and decreased chondrocyte apoptosis, improved the expression of SOX9, a critical transcription factor responsible for the expression of anabolic genes type II collagen and aggrecan, at both 3 and 6 weeks. Meanwhile, the high-dose SR also significantly attenuated the subchondral bone remodeling at both 3 and 6 weeks, as shown by the improved microarchitecture indices, TMD, mineral-to-collagen ratio and intrinsic mechanical properties. In contrast, the low-dose SR did not significantly change all the detection indices of cartilage and bone at both 3 and 6 weeks. Conclusion: The high-dose SR treatment can reduce articular cartilage degeneration and subchondral bone remodeling in the rat MMT model of OA.
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WC Chemistry, Multidisciplinary; Pharmacology & Pharmacy
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PT J
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TI An increased rate of falling leads to a rise in fracture risk in postmenopausal

women with self-reported osteoarthritis: a prospective multinational cohort study (GLOW)
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID bone-mineral density; radiographic osteoarthritis; knee osteoarthritis; osteoporotic fractures; lifetime risk; older-adults; elderly-men; hip; association; pain
AB Objectives Patients with osteoarthritis have increased bone mass but no decrease in fractures. The association between self-reported osteoarthritis and incident falls and fractures was studied in postmenopausal women. Methods The Global Longitudinal Study of Osteoporosis in Women is a prospective multinational cohort of 60 393 non-institutionalised women aged >= 55 years who had visited primary care practices within the previous 2 years. Questionnaires were mailed at yearly intervals. Patients were classified as having osteoarthritis if they answered yes to the question, 'Has a doctor or other health provider ever said that you had osteoarthritis or degenerative joint disease?', and this was validated against primary care records in a subsample. Information on incident falls, fractures and covariates was self-reported. Cox and Poisson models were used for incident fractures and number of falls, respectively, to compute hazard ratios (HRs) and rate ratios (RRs) for baseline osteoarthritis status. Results Of 51 386 women followed for a median of 2.9 years (interquartile range 2.1-3.0), 20 409 (40%) reported osteoarthritis. The adjusted HR for osteoarthritis predicting fracture was 1.21 (95% CI 1.13 to 1.30; p<0.0001) and the adjusted RR for falls was 1.24 (95% CI 1.22 to 1.26; p<0.0001). However, the association between osteoarthritis and fracture was not significant after adjustment for incident falls (HR 1.06 (95% CI 0.98 to 1.15; p=0.13)). Conclusions Postmenopausal women with self-reported osteoarthritis have a 20% increased risk of fracture and experience 25% more falls than those without osteoarthritis. These data suggest that increased falls are the causal pathway of the association between osteoarthritis and fractures.
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WC Rheumatology
SC Rheumatology
GA 143ZB
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TI Correlation of meniscal T2*with multiphoton microscopy, and change of articular cartilage T2 in an ovine model of meniscal repair
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE MRI; Meniscus; Cartilage; UTE
ID healthy-subjects; knee; time; mri; bone; osteoarthritis; thickness; sheep; joint
AB Objective: To correlate meniscal T2* relaxation times using ultra-short echo time (UTE) magnetic resonance imaging (MRI) with quantitative microscopic methods, and to determine the effect of meniscal repair on post-operative cartilage T2 values. Design: A medial meniscal tear was created and repaired in the anterior horn of one limb of 28 crossbred mature ewes. MR scans for morphological evaluation, meniscal T2* values, and cartilage T2 values were acquired at 0, 4 and 8 months post-operatively for the Tear and Non-Op limb. Samples of menisci from both limbs were analyzed using multiphoton microscopy (MPM) analysis and biomechanical testing. Results: Significantly prolonged meniscal T2* values were found in repaired limbs than in control limbs, $P < 0.0001$. No regional differences of T2* were detected for either the repaired or control limbs in the anterior horn. Repaired limbs had prolonged cartilage T2 values, primarily anteriorly, and tended to have lower biomechanical force to failure at 8 months than Non-Op limbs. MPM autofluorescence and second harmonic generation data correlated with T2* values at 8 months ($rho = -0.48$, $P = 0.06$). Conclusions: T2* mapping is sensitive to detecting temporal and zonal differences of meniscal structure and composition. Meniscal MPM and cartilage T2 values indicate changes in tissue integrity in the presence of meniscal repair. (C) 2013 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
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BP 1083
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WC Orthopedics; Rheumatology
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TI Degenerative changes at the lumbar spine-implications for bone mineral density measurement in elderly women
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE BMD; Degenerative changes; Diagnosis; DXA; Lumbar spine; Osteoporosis
ID x-ray absorptiometry; osteoporotic fractures; postmenopausal women; men; site; disc; osteoarthritis; densitometry; prevalence; arthrosis
AB Degenerative changes of the lumbar spine may lead to misinterpretation of bone mineral density (BMD) measurements and cause underdiagnosis of osteoporosis. This longitudinal study of 1,044 women, 75 years at inclusion and followed for 10 years, shows that identification of apparent degenerative changes on the dual energy X-ray absorptiometry (DXA) scan can increase the proportion diagnosed. In the elderly, degenerative manifestations in the lumbar spine may result in falsely elevated BMD values, consequently missing a large proportion of those with osteoporosis. Our aim was to determine the distribution and impact of degenerative changes on lumbar spine DXA over time and its clinical implications. Participants were 1,044 women from the population-based Osteoporosis Risk Assessment cohort. All women were 75 years old at invitation and followed up after 5 years (n = 715) and 10 years (n = 382). Degenerative changes were evaluated visually on the DXA image for each vertebra L1 to L4 (intraobserver precision kappa values of 0.66-0.70). At baseline, apparent degenerative changes were more frequent in the inferior segments of the lumbar spine [5 % (L1), 15 % (L2), 26 % (L3), and 36 % (L4)] and increased over time. At 10 years, the prevalences were 20 % (L1), 39 % (L2), 59 % (L3), 72 % (L4), resulting in a significant increase in overall BMD. In women without apparent degenerative changes, BMD remained stable between 75 and 85 rather than an expected bone loss. At baseline, 37 % had osteoporosis (BMD < -2.5) at L1-L4; exclusion of women with apparent degenerative changes increased this proportion to 47 %. Using L1-L2, which was less prone to degenerative changes, 46 % of women were classified as osteoporotic regardless of degenerative changes. Degenerative changes were very common in elderly women, accelerated disproportionately over time, were increasingly frequent from vertebrae L1 to L4, and had significant impact on diagnosing osteoporosis. This suggests that routine reporting of spine BMD at L1-L2 would add valuable information for reassessment and monitoring.
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TC 95
Z9 113
U1 1
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PU SPRINGER LONDON LTD
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JI Osteoporosis Int.
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AF Sen, Keiiku
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Nakayama, Setsuko
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TI Management of the occiput posterior presentation: A single institute experience
SO JOURNAL OF OBSTETRICS AND GYNAECOLOGY RESEARCH
LA English
DT Article
DE cesarean section; manual rotation; obstetric labor complications; persistent occiput posterior; posture change
ID transverse positions; labor
AB Aim: We have examined the risk factors and management processes of the persistent occiput posterior (pOP) position by analyzing medical records from our hospital. Material and Methods: Medical records and delivery notes from January 2007 to December 2009 were reviewed and 103 patients were identified as having the pOP position during active labor. A total of 1054 patients who had occiput anterior (OA) deliveries were used as control. Results: There was no significant difference in population background between the pOP and control groups. Fifty-eight (56%) cases of pOP were identified before the birth of the fetal head whereas 45 were found to be in pOP at the birth. Among these cases identified as pOP before the birth, 30 (52%) patients underwent an attempt to rotate pOP to OA manually. A total of 14 (47%) attempts were successful and delivered OA vaginally. Of 16 cases whose attempts failed, five (31%) had cesarean delivery and 11 had vaginal OP delivery. The overall cesarean rate in this group was 16.7%. Twenty-eight patients who did not have any corrective intervention had a significantly higher rate of cesarean section (60.7%, P < 0.001 by ?2 analysis). The advanced head station and the wider dilatation resulted in a successful manual rotation. Conclusions: Attempts to correct pOP by manual rotation have better results when the head is in the mid-pelvis. Also, posture change reduces cesarean section rate. The current data suggest attempts to correct pOP to OA reduce cesarean section rate.
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NR 10
TC 9
Z9 12
U1 0
U2 1
PU WILEY-BLACKWELL
PI HOBOKEN
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J9 J OBSTET GYNAECOL RE
JI J. Obstet. Gynaecol. Res.
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PT J
AU Lee, JY
Harvey, WF
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AF Lee, Ji Y.
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TI Relationship of Bone Mineral Density to Progression of Knee Osteoarthritis
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID radiographic osteoarthritis; subchondral bone; hip; osteoporosis; risk; risedronate; symptoms; incident; fracture; women
AB Objective To evaluate the longitudinal relationship between bone mineral density (BMD) and BMD changes and the progression of knee osteoarthritis (OA), as measured by cartilage outcomes. Methods We used observational cohort data from the Vitamin D for Knee Osteoarthritis trial. Bilateral femoral neck BMD values as well as knee magnetic resonance imaging (MRI) scans in each subject were obtained at baseline and subsequently at 12 months and 24 months. The change in total cartilage volume and tibial and femoral cartilage thickness was measured by manual cartilage segmentation of 2 sequential knee MRI scans in each subject. Multivariable linear regression models were used to examine the associations of baseline BMD and BMD change with the cartilage outcomes, adjusting for baseline age, sex, body mass index, malalignment, and vitamin D treatment. Model fit and assumptions were validated. Results A total of 127 subjects were eligible for analysis. Longitudinal BMD loss was associated with loss of cartilage volume (= 1.25 per 0.1 gm/cm2, P = 0.02) and loss of tibial cartilage thickness (= 0.028, P = 0.03). BMD loss of a magnitude greater than the least significant change (<-4.7%) was associated with 1.02% cartilage volume loss per year (P = 0.005), 0.014 mm femoral cartilage thickness loss (P = 0.04), and 0.021 mm tibial cartilage thickness

loss per year (P = 0.009). There were no significant associations between baseline BMD and any of the cartilage outcomes. Conclusion Longitudinal BMD loss is associated with progressive cartilage loss in knees with OA. Further work to clarify the basis of this relationship could reveal novel therapeutic targets for knee OA.
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NR 32
TC 37
Z9 47
U1 0
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PU WILEY
PI HOBOKEN
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J9 ARTHRITIS RHEUM-US
JI Arthritis Rheum.
PD JUN 15
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WC Rheumatology
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PT J
AU Lotz, M
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TI Value of biomarkers in osteoarthritis: current status and perspectives
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Review
DE Osteoarthritis; Outcomes research; Inflammation
ID synovial-fluid levels; c-reactive protein; biochemical markers; knee osteoarthritis; radiographic osteoarthritis; rheumatoid-arthritis; ctx-ii; biological markers;

aggrecan fragments; proteomic analysis
AB Osteoarthritis affects the whole joint structure with progressive changes in cartilage, menisci, ligaments and subchondral bone, and synovial inflammation. Biomarkers are being developed to quantify joint remodelling and disease progression. This article was prepared following a working meeting of the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis convened to discuss the value of biochemical markers of matrix metabolism in drug development in osteoarthritis. The best candidates are generally molecules or molecular fragments present in cartilage, bone or synovium and may be specific to one type of joint tissue or common to them all. Many currently investigated biomarkers are associated with collagen metabolism in cartilage or bone, or aggrecan metabolism in cartilage. Other biomarkers are related to non-collagenous proteins, inflammation and/or fibrosis. Biomarkers in osteoarthritis can be categorised using the burden of disease, investigative, prognostic, efficacy of intervention, diagnostic and safety classification. There are a number of promising candidates, notably urinary C-terminal telopeptide of collagen type II and serum cartilage oligomeric protein, although none is sufficiently discriminating to differentiate between individual patients and controls (diagnostic) or between patients with different disease severities (burden of disease), predict prognosis in individuals with or without osteoarthritis (prognostic) or perform so consistently that it could function as a surrogate outcome in clinical trials (efficacy of intervention). Future avenues for research include exploration of underlying mechanisms of disease and development of new biomarkers; technological development; the omics' (genomics, metabolomics, proteomics and lipidomics); design of aggregate scores combining a panel of biomarkers and/or imaging markers into single diagnostic algorithms; and investigation into the relationship between biomarkers and prognosis.
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PT J
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TI Isolated GH Deficiency due to a GHRH Receptor Mutation Causes Hip Joint Problems and Genu Valgum, and Reduces Size but not Density of Trabecular and Mixed Bone
SO JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM
LA English
DT Article
ID growth-factor-i; hormone-receptor; mineral density; radiographic osteoarthritis; young-adults; igf-i; prevalence; collagen; serum; children
AB Context: The GH/IGF-I axis is important for bone growth, but its effects on joint function are not completely understood. Adult-onset GH-deficient individuals have often reduced bone mineral density (BMD). However, there are limited data on BMD in adult patients with untreated congenital isolated GH-deficient (IGHD). We have shown that adult IGHD individuals from the Itabaianinha, homozygous for the c.57 + 1G>A GHRHR mutation, have reduced bone stiffness, but BMD and joint status in this cohort are unknown. Objective: The goal is to study BMD, joint function, and osteoarthritis score in previously untreated IGHD adults harboring the c.57 + 1G>A GHRHR mutation. Design: This is a cross-sectional study. Methods: Areal BMD by dual-energy X-ray absorptiometry was measured in 25 IGHD and 23 controls (CO). Volumetric BMD (vBMD) was calculated at the lumbar spine and total hip. Joint function was assessed by goniometry of elbow, hips, and knees. X-rays were used to measure the anatomic axis of knee and the severity of osteoarthritis, using a classification for osteophytes (OP) and joint space narrowing (JSN). Results: Genu valgum was more prevalent in IGHD than CO. The osteoarthritis knees OP score was similar in both groups, and knees JSN score showed a trend to be higher in IGHD. The hips OP score and JSN score were higher in IGHD. Areal BMD was lower in IGHD than CO, but vBMD was similar in the two groups. Range of motion was similar in elbow, knee, and hip in IGHD and CO. Conclusions: Untreated congenital IGHD due to a GHRHR mutation causes hip joint problems and genu valgum, without apparent clinical significance, reduces bone size, but does not reduce vBMD of the lumbar spine and hip.
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TI Epidemiological Survey of Quantitative Ultrasound in Risk Assessment of Falls in Middle-Aged and Elderly People
SO PLOS ONE
LA English
DT Article
ID dwelling older-adults; hip fracture; multifactorial intervention; prediction; women; osteoporosis; fragility; calcaneus; density; outdoor
AB The risk assessment of falls is important, but still unsatisfactory and time-consuming. Our objective was to assess quantitative ultrasound (QUS) in the

risk assessment of falls. Our study was designed as epidemiological cross-sectional study occurring from March 2009 to February 2010 by community survey at a medical center. The participants were collected from systemic sample of 1,200 community-dwelling people (Male/Female = 524/676) 40 years old and over in Yunlin County, Mid-Taiwan. Structural questionnaires including socioeconomic status, living status, smoking and drinking habits, exercise and medical history were completed. Quantitative ultrasound (QUS) at the non-dominant distal radial area (QUS-R) and the left calcaneal area (QUS-C) were measured. The overall prevalence of falls was 19.8%. In men, the independently associated factors for falls were age (OR: 1.04; 95%CI: 1.01 similar to 1.06), fracture history (OR: 1.89; 95%CI: 1.12 similar to 3.19), osteoarthritis history (OR: 3.66; 95%CI: 1.15 similar to 11.64) and speed of sound (OR: 0.99; 95%CI: 0.99 similar to 1.00; p<0.05) by QUS-R. In women, the independently associated factors for falls were current drinking (OR: 3.54; 95%CI: 1.35 similar to 9.31) and broadband ultrasound attenuation (OR: 0.98; 95%CI: 0.97 similar to 0.99; p<0.01) by QUS-C. The cutoffs at -2.5<T-score<-1 derived using QUS-R (OR: 2.85; 95%CI: 1.64 similar to 4.96; p<0.01) in men or T-score <=-2.5 derived using QUS-C (OR: 2.72; 95%CI: 1.42 similar to 5.21; p<0.01) in women showed an independent association with falls. The lowest T-score derived using either QUS-R or QUS-C was also revealed as an independent factor for falls in both men (OR: 2.13; 95%CI: 1.03 similar to 4.43; p<0.05) and women (OR: 2.36; 95%CI: 1.13 similar to 4.91; p<0.05). Conclusions: Quantitative ultrasounds, measured either at the radial or calcaneal area, are convenient tools by which to assess the risk of falls in middle-aged and elderly people.
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PU PUBLIC LIBRARY SCIENCE
PI SAN FRANCISCO
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WC Multidisciplinary Sciences
SC Science & Technology - Other Topics

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TI Health economics in the field of osteoarthritis: An Expert's consensus paper from the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO)
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE Review; Cost-effectiveness; Cost-utility; Osteoarthritis; Arthroplasty; Economics; Methods
ID quality-of-life; evidence based recommendations; cost-effectiveness analysis; eular-standing-committee; total joint arthroplasty; total knee arthroplasty; task-force; rheumatoid-arthritis; total hip; selective inhibitors
AB Objectives: There is an important need to evaluate therapeutic approaches for osteoarthritis (OA) in terms of cost-effectiveness as well as efficacy. Methods: The ESCEO expert working group met to discuss the epidemiological and economic evidence that justifies the increasing concern of the impact of this disease and reviewed the current state-of-the-art in health economic studies in this field. Results: OA is a debilitating disease; it is increasing in frequency and is associated with a substantial and growing burden on society, in terms of both burden of illness and cost of illness. Economic evaluations in this field are relatively rare, and those that do exist, show considerable heterogeneity of methodological approach (such as indicated population, comparator, decision context and perspective, time horizon, modeling and outcome measures used). This heterogeneity makes comparisons between studies problematic. Conclusions: Better adherence to guidelines for economic evaluations is needed. There was strong support for the definition of a reference case and for what might constitute "standard optimal care" in terms of best clinical practice, for the control arms of interventional studies. (C) 2013 The Authors. Published by Elsevier HS Journals, Inc. All rights reserved.
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FU Amgen; Pfizer; Novartis; Servier; SMB; GSK; Alliance for Better Bone Health; MSD; Eli Lilly; Medtronic; Roche; NPS; IBSA; Merck Sharp Dohme; Nutraveris; Rottapharm; Theramex; Bioiberica S.A.; Abbott; AstraZeneka; Hospira; MSD/Schering-Plough; Nicox; Pfizer/Wyeth; UCB; Diakonhjemmet Hospital from Abbott; BMS; Lilly; Nycomed; Nestle; Danone; Negma; Wyeth; GlaxoSmithKline; Merckle; Genevrier; Teijin; Teva; Ebewee Pharma; Zodiac; Analis; Novo-Nordisk; Bristol Myers Squibb; Medical Research Council [U1475000001, MC_UU_12011/1, MC_UP_A620_1014] Funding Source: researchfish; National Institute for Health Research [NF-SI-0508-10082] Funding Source: researchfish
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PT J
AU Wang, YW
Peng, R
Ma, RL
AF Wang, Yuewen
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Ma, Ruilian
TI Epidemiological Investigation of Osteoarthritis in Middle-Aged Mongolian and Senior Residents of the Inner Mongolia Autonomous Region
SO IRANIAN RED CRESCENT MEDICAL JOURNAL
LA English
DT Article
DE Osteoarthritis; Physical Examination; Hypertension
ID quality-of-life; knee osteoarthritis; follow-up; hip; progression; population; kellgren; lesions; impact; cohort
AB Background: To investigate the prevalence and characteristics of osteoarthritis (OA) in Mongolian middle-aged and senior residents of the Inner Mongolia

autonomous region, compared with the prevalence of OA in different regions, to understand the OA-associated factors and provide theoretical evidences for intervention and prevention. Objectives: Thereby the prevalence, distribution characteristics and correlative factors of OA in Mongolian middle-aged and senior residents in the Inner Mongolia autonomous region were investigated in this study. Materials and Methods: Rural and urban residents in Hohhot, Baotou and Erdos were selected using stratified, multi-stage and cluster random sampling. 2000 residents aging over 45 filled out questionnaires, underwent specialized physical and X-ray examinations. The factors affecting OA were analyzed by the multivariate unconditional logistic regression. Results: Obtained total of 1877 questionnaires were completed. 93% of the residents were unaware of OA-related issues. The prevalence of radiological OA and clinical OA (neck OA: 36.72%; waist OA: 44.02%; knee OA: 12.43%; hand OA: 6.83%) were 62.17% and 56.15%, respectively. Urban residents were more subjected to cervical spine (chi(2) = 8.92, P = 0.005) and less to lumbar spine disease (chi(2) = 10.32, P = 0.004) compared to rural ones. The prevalence of OA in knees and hands of females (chi(2) = 8.65, P = 0.003) was significantly higher than males (chi(2)= 4.37, P= 0.042). The prevalence of OA in postmenopausal females was slightly higher than males (chi(2) = 3.86, P = 0.052), with no statically significant difference. The risks of OA obviously increased with age. The residents with hypertension, diabetes and atherosclerosis were more subjected to OA. Conclusions: The prevalence of OA in Mongolian middle- aged and senior residents in part of the Inner Mongolia autonomous region was similar to the other ethnic groups. The prevalence of OA was affected by age, gender, location, hypertension, diabetes, atherosclerosis and osteoporosis. The residents need further educations about OA prevention and treatment.
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AU Zhu, SS
Chen, K
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Zhang, N
Jiang, RL
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AF Zhu, Songsong
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TI Alendronate protects against articular cartilage erosion by inhibiting subchondral bone loss in ovariectomized rats
SO BONE
LA English
DT Article
DE Osteoporosis; Osteoarthritis; Alendronate; Subchondral bone; Cartilage; Ovariectomy
ID cruciate ligament transection; knee osteoarthritis; strontium ranelate; controlled-trial; model; osteoporosis; progression; estrogen; increases; severity
AB Osteoporosis (OP) and osteoarthritis (OA) are major health problems in the increasing elderly population, particularly in postmenopausal women, but their relationship remains unclear. The present study investigated whether alendronate (ALN), a potent inhibitor of bone resorption, could protect articular cartilage from degeneration in a combined animal model of OP and OA induced by ovariectomy (OVX). Seventy-eight seven-month-old female Sprague-Dawley rats were assigned into five experimental groups: (1) sham-operated with vehicle treatment, (2) sham-operated with ALN treatment, (3) OVX with vehicle treatment, (4) ALN treatment starting at OVX, and (5) ALN treatment starting at eight weeks after OVX. Histological and micro-CT analyses, together with urine collagen degradation markers, indicated that early ALN treatment completely prevented both subchondral bone loss and cartilage surface erosion induced by OVX. Although late ALN treatment also inhibited subchondral bone loss and significantly reduced cartilage erosion in the OVX rats, these tissues did not completely recover even after 10-weeks of ALN treatment. Quantitative RT-PCR analyses showed that the

protective effect of ALN correlated with increased ratio of OPG/RANKL in both subchondral bone and cartilage. Moreover, whereas OVX caused upregulation of expression of matrix metalloproteinases MMP-13 and MMP-9 in the articular cartilage and chondrocytes in the interface between the articular cartilage and subchondral bone, respectively, early ALN treatment blocked whereas late ALN treatment attenuated the upregulation of these catabolic enzymes in the corresponding tissues. Together, these data indicate that the subchondral bone loss plays an important role in OA pathogenesis in the combined OP and OA model and suggest that treatment timing is an important factor for the effectiveness of anti-resorptive drug therapy of combined OP and OA. (C) 2013 Elsevier Inc. All rights reserved.
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NR 41
TC 85
Z9 94
U1 0
U2 45
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PI NEW YORK
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EI
J9 BONE
JI Bone
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IS 2
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EP 349
DI 10.1016/j.bone.2012.12.044
PG 10
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 101GR
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PT J
AU Tveit, M
Rosengren, BE
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AF Tveit, Magnus
Rosengren, Bjorn E.
Nyquist, Fredrik
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Karlsson, Magnus K.
TI Former Male Elite Athletes Have Lower Incidence of Fragility Fractures Than Expected
SO MEDICINE AND SCIENCE IN SPORTS AND EXERCISE
LA English
DT Article
DE FORMER ATHLETES; FRACTURES; OSTEOPOROSIS; PHYSICAL ACTIVITY; SPORT
ID bone-mineral density; physical-activity; exercise intervention; hip-fractures; risk-factors; mass; size; men; osteoarthritis; tennis
AB TVEIT, M., B. E. ROSENGREN, F. NYQUIST, J. NILSSON, and M. K. KARLSSON. Former Male Elite Athletes Have Lower Incidence of Fragility Fractures Than Expected. Med. Sci. Sports Exerc., Vol. 45, No. 3, pp. 405-410, 2013. Purpose: Physical activity during growth is associated with high peak bone mass and may, as a result, prevent osteoporosis later in life. It is therefore possible that athletic

activity during youth could lower the risk of fragility fractures in old age. Although this is currently unclear and based on evaluations of surrogate skeletal end point variables in former athletes, we hypothesized that this is not the case. Methods: In a retrospective matched controlled cohort study design, we calculated the lifetime incidence of fractures from the results of a mailed questionnaire sent to 709 former male elite athletes with a mean age of 69 yr (range = 50-93 yr) who had given up regular sports activity a mean of 34 yr (range = 1-63 yr) earlier, and to 1368 matched controls. Estimates of time to first fracture were analysed using Poisson regression, and for analyses of covariance, Cox Regression was used. Data are presented as rate ratios (RR) with 95% confidence interval (CI). Results: After retirement from sports, the former athletes had an RR of 0.70 (0.52-0.93) for any fracture, an RR of 0.50 (0.27-0.89) for any fragility fracture, and an RR of 0.29 (0.09-0.74) for distal radius fractures. When adjusting for occupation, smoking, alcohol, disease, and medication the hazard ratio (HR) of any fracture after an active career was 0.73 (95% CI = 0.54-0.99) and the hazard ratio of any fragility fracture after age 50 yr was 0.63 (95% CI = 0.35-1.16). Conclusions: In men, elite sports during adolescence are associated with a lower fracture risk after career end. The former athletes were overall healthier, which may have influenced the results.
C1 [Tveit, Magnus; Rosengren, Bjorn E.; Nyquist, Fredrik; Nilsson, Jan-Ake; Karlsson, Magnus K.] Lund Univ, Dept Orthopaed, Skane Univ Hosp, Clin & Mol Osteoporosis Res Unit, SE-20502 Malmo, Sweden.
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NR 36
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Z9 17
U1 0
U2 17
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
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WC Sport Sciences
SC Sport Sciences
GA 094MT
UT WOS:000315268700001
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PT J
AU Kitahara, H
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TI Associations of vertebral deformities and osteoarthritis with back pain among Japanese women: the Hizen-Oshima study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article

DE Back pain; Epidemiology; Osteoporosis; Vertebral deformity; Vertebral osteoarthritis
ID quality-of-life; lumbar disc degeneration; radiographic features; fractures; osteoporosis; prevalence; epidemiology; disability; men
AB We examined the spinal distribution of the types of vertebral deformities and the associations of vertebral deformities and osteoarthritis with back pain in Japanese women. Midthoracic and upper lumbar vertebrae were more susceptible to deformity. Vertebral deformity and osteoarthritis were frequent and were associated with back pain. Vertebral fractures due to osteoporosis and osteoarthritis are both common and significant health problems in aged people. However, little is known about the descriptive epidemiology of the individual deformity types and the relative clinical impact in women in Japan. Lateral radiographs were obtained from 584 Japanese women ages 40 to 89 years old. Deformities were defined as vertebral heights of more than 3 standard deviations (SDs) below the normal mean. Osteoarthritis was defined as Kellgren-Lawrence (KL) grade 2 or higher. Information on upper or low back pain during the previous month was collected by questionnaire. We compared the spinal distribution of the three types of vertebral deformities (wedge, endplate, and crush) typical of fractures and examined the associations of number and type of vertebral deformities and osteoarthritis with back pain. Fifteen percent of women had at least one vertebral deformity and 74% had vertebral osteoarthritis. The prevalence of upper or low back pain was 30.1%. Deformities were most common in the midthoracic and upper lumbar regions and wedge was the frequent type, followed by endplate and crush. Multiple logistic regression analysis showed that the odds of back pain was 3.0 (95% CI 1.5-6.3) times higher for women with a single wedge deformity and 3.2 (95% CI 1.0--0.6) times higher for women with two or more wedge deformities, compared to women with no wedge deformity. Vertebral osteoarthritis was associated with back pain (OR 1.8, 95% CI 1.1-2.9), independent of other covariates including age and deformities. Our results in this group of Japanese women are similar to and consistent with results reported previously in other populations of Japanese and Caucasians.
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TC 13
Z9 16
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U2 12
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI
J9 OSTEOPOROSIS INT
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EP 915
DI 10.1007/s00198-012-2038-2
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Klontzas, ME
   Akoumianakis, ID
   Vagios, I
   Karantanas, AH
AF Klontzas, Michail E.
   Akoumianakis, Ioannis D.
   Vagios, Ilias
   Karantanas, Apostolos H.
TI MR imaging findings of medial tibial crest friction
SO EUROPEAN JOURNAL OF RADIOLOGY
LA English
DT Article
DE Medial tibial condyle; Friction syndrome; MR imaging/diagnosis; Bone marrow edema; Medial knee pain
ID spontaneous osteonecrosis; knee pain; asymptomatic knees; stress-fracture;

meniscal tears; marrow edema; prevalence; osteoarthritis; osteoporosis; diagnosis
AB Objective: Medial tibial condyle bone marrow edema (BME), associated with soft tissue edema (STe) surrounding the medial collateral ligament, was incidentally observed in MRI examinations of young and athletic individuals. The aim of the present study was to 1. Prospectively investigate the association between these findings and coexistence of localized pain, and 2. Explore the possible contribution of the tibial morphology to its pathogenesis. Methods: The medial tibial condyle crest was evaluated in 632 knee MRI examinations. The angle and depth were measured by two separate evaluators. The presence of STe and BME was recorded. A third evaluator blindly assessed the presence of pain at this site. Results: BME associated with STe was found in 24 patients (with no history of previous trauma, osteoarthritis, tumor or pes anserine bursitis). The mean crest angle was 151.3 degrees (95%CI 147.4-155.3 degrees) compared to 159.4 degrees (95%CI 158.8-160 degrees) in controls (Mann-Whitney test, P < 0.0001). MRI findings were highly predictive of localized pain (sensitivity 92% specificity 99%, Fisher's exact test, P < 0.0001). Conclusion: Friction at the medial tibial condyle crest is a painful syndrome. MRI is a highly specific and sensitive imaging modality for its diagnosis.
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NR 28
TC 10
Z9 12
U1 0
U2 3
PU ELSEVIER IRELAND LTD
PI CLARE
PA ELSEVIER HOUSE, BROOKVALE PLAZA, EAST PARK SHANNON, CO, CLARE, 00000, IRELAND
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PT J
AU Oelzner, P
Franke, S
Hofmann, G
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AF Oelzner, P.
Franke, S.
Hofmann, G.
Wolf, G.
TI Active Vitamin D prevents anti-osteogenic effect of AGEs on human osteoblasts
SO OSTEOLOGIE
LA English
DT Article
DE AGEs; vitamin D; osteoblasts; mRNA expression
ID glycation end-products; nf-kappa-b; d-receptor; gene-expression; rheumatoid-arthritis; disease-activity; d deficiency; bone; osteoporosis; associations
AB Objective: To investigate whether 1,25-dihydroxyvitamin D-3 (1,25D(3)) is able to prevent advanced glycation end products (AGE)-induced alterations of osteoblasts (OB). Methods: Human OB were isolated and cultured from bone tissue of ten patients with knee osteoarthritis and joint replacement. Cells from passages three to seven were treated with control bovine serum albumin (Co-BSA), AGE-BSA or AGE-BSA supplemented with 1,25D(3) in two different concentrations (medium concentrations: 5 mg/ml AGE-BSA and Co-BSA, respectively; 100 pmol/l and 500 pmol/l 1,25D(3)). mRNA and protein expression of bone alkaline phosphatase (bALP), collagen type 1 (Col1) and osteocalcin (OC) were investigated by real-time PCR and Western Blot-analysis, respectively. Results: AGE-BSA reduced mRNA expression of bALP, Col1 and OC in comparison to Co-BSA significantly. Addition of 1,25D(3) in both concentrations completely prevented the AGE-BSA-induced suppression and resulted in a further increase of mRNA and protein expression of bALP, Col1 and OC. Discussion: 1,25D(3) in a physiological concentration prevents anti-osteogenic effects of AGEs on human OB. Therefore, 1,25D(3) treatment should be beneficial in diseases associated with AGE accumulation, impaired bone formation and vitamin D deficiency such as senile osteoporosis and rheumatoid arthritis.
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U2 4
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PI STUTTGART
PA RUDIGERSTR 14, D-70469 STUTTGART, GERMANY
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J9 OSTEOLOGIE
JI Osteologie
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TI How to define responders in osteoarthritis
SO CURRENT MEDICAL RESEARCH AND OPINION
LA English
DT Review
DE Magnetic resonance imaging; Osteoarthritis; Pain; Responder; Structure-modifying drug; X-ray
ID total joint replacement; patient reported outcm; total knee arthroplasty; total hip-arthroplasty; double-blind; glucosamine sulfate; biochemical markers; cartilage loss; chondroitins 4; risk-factors
AB Background: Osteoarthritis is a clinical syndrome of failure of the joint accompanied by varying degrees of joint pain, functional limitation, and reduced quality of life due to deterioration of articular cartilage and involvement of other joint structures. Scope: Regulatory agencies require relevant clinical benefit on symptoms and structure modification for registration of a new therapy as a disease-modifying osteoarthritis drug (DMOAD). An international Working Group of the European Society on Clinical and Economic Aspects of Osteoporosis and

Osteoarthritis (ESCEO) and International Osteoporosis Foundation was convened to explore the current burden of osteoarthritis, review current regulatory guidelines for the conduct of clinical trials, and examine the concept of responder analyses for improving drug evaluation in osteoarthritis. Findings: The ESCEO considers that the major challenges in DMOAD development are the absence of a precise definition of the disease, particularly in the early stages, and the lack of consensus on how to detect structural changes and link them to clinically meaningful endpoints. Responder criteria should help identify progression of disease and be clinically meaningful. The ideal criterion should be sensitive to change over time and should predict disease progression and outcomes such as joint replacement. Conclusion: The ESCEO considers that, for knee osteoarthritis, clinical trial data indicate that radiographic joint space narrowing >0.5mm over 2 or 3 years might be a reliable surrogate measure for total joint replacement. On-going research using techniques such as magnetic resonance imaging and biochemical markers may allow the identification of these patients earlier in the disease process.
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BP 719
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SC General & Internal Medicine; Research & Experimental Medicine
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AU Shen, Y
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Shen, Lei
TI Postmenopausal women with osteoporosis and osteoarthritis show different microstructural characteristics of trabecular bone in proximal tibia using high-resolution magnetic resonance imaging at 3 tesla
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
ID age-related-changes; distal radius; computed-tomography; mineral density; cancellous bone; biomechanical property; inverse relationship; femoral-neck; iliac crest; in-vivo
AB Background: Osteoporosis (OP) and osteoarthritis (OA) are two common musculoskeletal disorders that affect the quality of life in aged people. An inverse relationship between OP and OA was proposed four decades ago. However, the difference in microstructure of the trabecular bone of these two disorders by high-resolution MRI (HR-MRI) has not been compared. The primary objective of the study is to explain the actual relationship between OA and OP based on

differences between bone microstructure of these two diseases. The secondary objectives are to find out the significance of Euler number and its relationship with other structural parameters, and important role of HR-MRI to reveal the microstructure of trabecular bone directly. Methods: Totally, 30 women with OP and 30 women with OA (n = 60) were included in this study. Primary OA of hip, knee, as well as spinal arthrosis were diagnosed according to plain X-ray film findings. Osteoporosis was defined based on the latest criteria of World Health Organization (WHO). Structural and textural parameters derived from HR-MRI images of proximal tibia were calculated and compared with special software. Results: There were significant differences in apparent bone volume fraction, trabecular thickness, mean roundness, Euler number, entropy and inverse different moment between OP and OA patients. In OP group, apparent trabecular separation (Tb.Sp), inertia, absolute value and contrast were positively correlated with Euler number, whereas apparent trabecular number (Tb.N), mean trabecular area, inverse difference and inverse different moment were negatively correlated. Apparent trabecular bone volume fraction (BV/TV), mean trabecular area, mean trabecular perimeter and mean skeleton length negatively correlated with Euler number in OA group. Inverse different moment was the texture parameter, which influenced bone mineral density (BMD) of femoral neck, meanwhile contrast influenced BMD of both great trochanter and Ward's triangle in OP group. While in OA group, Euler number was the exclusive parameter, which affected BMD of femoral neck and Ward's triangle. Conclusions: We found significant differences in microstructure parameters derived from HR-MRI images between postmenopausal women with OP and OA. It convincingly supports the hypothesis that there might be an inverse relationship between OP and OA.
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TI Baboons as a Model to Study Genetics and Epigenetics of Human Disease
SO ILAR JOURNAL
LA English
DT Article
DE cardiovascular disease; diabetes; genomics resources; hypertension; intrauterine growth restriction; metabolic syndrome; obesity; osteoporosis
ID maternal nutrient restriction; quantitative trait locus; sodium-lithium countertransport; ldl-cholesterol concentration; cross-species replication; ester transfer protein; bone-mineral density; messenger-rna levels; genome-wide scan; pedigreed baboons
AB A major challenge for understanding susceptibility to common human diseases is determining genetic and environmental factors that influence mechanisms underlying variation in disease-related traits. The most common diseases afflicting the US population are complex diseases that develop as a result of defects in multiple genetically controlled systems in response to environmental challenges. Unraveling the etiology of these diseases is exceedingly difficult because of the many genetic and environmental factors involved. Studies of complex disease genetics in humans are challenging because it is not possible to control pedigree structure and often not practical to control environmental conditions over an extended period of time. Furthermore, access to tissues relevant to many diseases from healthy individuals is quite limited. The baboon is a well-established research

model for the study of a wide array of common complex diseases, including dyslipidemia, hypertension, obesity, and osteoporosis. It is possible to acquire tissues from healthy, genetically characterized baboons that have been exposed to defined environmental stimuli. In this review, we describe the genetic and physiologic similarity of baboons with humans, the ability and usefulness of controlling environment and breeding, and current genetic and genomic resources. We discuss studies on genetics of heart disease, obesity, diabetes, metabolic syndrome, hypertension, osteoporosis, osteoarthritis, and intrauterine growth restriction using the baboon as a model for human disease. We also summarize new studies and resources under development, providing examples of potential translational studies for targeted interventions and therapies for human disease.
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TI Age-related differences in the biological parameters of vertebral cancellous bone from Chinese women
SO CHINESE MEDICAL JOURNAL
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DT Article
DE microstructure; biological parameters; collagen fibrils; biomechanics; micro-CT; scanning electron microscopy
ID trabecular bone; postmenopausal women; gender; microarchitecture; microstructure; mass; osteoarthritis; stiffness; estrogen; fracture
AB Background With aging, the human fracture risk gradually increase. This is mainly due to the corresponding changes of the biomechanical parameters of human bone presents with aging. We measured the microstructural parameters of lumbar bone from women in several age groups by micro-computed tomography and scanning electron microscopy. We observed changes in lumbar cancellous bone mineral density and in biomechanical parameters with aging to elucidate the relationship between age and risk of fracture. We provide theoretical support for human pathology, fracture risk increased with age and the individualized of each age group. Methods Thirty-two fresh L3 vertebral bodies were donated from 32 women, aged 20-59 years and were divided into four age groups: 20 to 29 years (group A); 30 to 39 years (group B); 40 to 49 years (group C); and 50 to 59 years (group D). Conventional lumbar separation was performed by removing soft tissue and subsidiary structures, leaving only the vertebral body. The vertebral body was cut into halves along the median sagittal plane, maintaining the upper and lower end-plates of each half, and used for biomechanical, morphological, and density measurements. Results Comparing group A to B, the rod-like trabecular thickness (Tb.Th) decreased; the trabecular spacing (Tb.Sp) increased; the plate-like Tb.Th decreased; bone mineral density, tissue mineral density, bone volume fraction, and bone surface fraction decreased, and the elastic modulus and the ultimate stress

decreased (all changes P<0.05). Similar significant (P<0.05) trends were obtained when comparing group C to D. With aging, the collagen cross-linking capacity declined, the thickness of the collagen fibrils was variable (ranging from almost the same to loose, sparse, or disordered), and the finer collagen fibrils between the thick filaments were disorganized. Conclusions In women aged 20 to 59 years, the rod-like and plate-like Tb.Th of the vertebral body decreased, while Tb.Sp increased. Additionally, the density, elastic modulus, and ultimate stress of the cancellous bone decreased with age. These associated changes in bone microstructure, density, and biomechanics with age may lead to an increasing risk of osteoporosis and fracture.
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TI Profiles of vitamin D insufficiency and deficiency in Japanese men and women: association with biological, environmental, and nutritional factors and coexisting disorders: the ROAD study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Epidemiology; Population-based study; Prevalence; Risk factor; Vitamin D deficiency; Vitamin D insufficiency
ID serum 25-hydroxyvitamin-d levels; ultraviolet-b; d inadequacy; prevention; hyperparathyroidism; osteoporosis; fractures; risk
AB Assessments of serum 25-hydroxyvitamin D levels in 1,683 Japanese from a population-based cohort revealed prevalences of vitamin D insufficiency and deficiency were 81.3 and 1.2 %, respectively. Vitamin D deficiency was significantly associated with female sex, examined month, current smoking, lack of regular walking, higher intact parathyroid hormone (iPTH), and poor daily vitamin D intake. To clarify the characteristics of subjects with vitamin D insufficiency and deficiency among men and women in the general Japanese population. We initiated research on osteoarthritis/osteoporosis against disability (ROAD), a large-scale population-based cohort study, in 2005-2007. Blood examination was performed to measure serum 25-hydroxyvitamin D (25D) and iPTH levels and biochemical markers of bone turnover in 1,683 participants (595 men, 1,088 women). Participants completed an interviewer-administered questionnaire, measurements of bone mineral density, and x-ray examination. Vitamin D deficiency and insufficiency were defined by serum 25D levels < 10 and a parts per thousand yen10 but < 30 ng/mL, respectively. The prevalence of vitamin D insufficiency and

deficiency was 81.3 and 1.2 %, respectively. Multinominal logistic regression analyses using potentially confounding variables revealed vitamin D insufficiency was significantly associated with age (+1 year, relative risk ratio, 0.98; 95 % confidence interval, 0.96-0.99), gender (women vs. men, 2.28; 1.59-3.30), residing areas (coastal area vs. mountainous area, 0.58; 0.41-0.81), examined month (October, November, December vs. January, 0.51; 0.34-0.76), and serum levels of iPTH (+1 pg/mL, 1.02; 1.01-1.03). Vitamin D deficiency was significantly characterised by female sex (20.5; 3.1-136.7), examined month (0.28; 0.09-0.95), current smoking habit (6.39; 1.78-23.0), lack of regular outside walking (3.96; 1.34-11.7), higher iPTH (1.02; 1.01-1.03) and poor daily vitamin D intake (+10 mu g/day, 0.48; 0.24-0.93). A high prevalence of vitamin D insufficiency and a low prevalence of vitamin D deficiency were found in Japanese men and women, and the characteristics of vitamin D status were clarified.
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U1 0
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WC Endocrinology & Metabolism
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PT J
AU Zupan, J
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TI Osteoarthritic versus osteoporotic bone and intra-skeletal variations in normal bone: Evaluation with μCT and bone histomorphometry
SO JOURNAL OF ORTHOPAEDIC RESEARCH
LA English
DT Article
DE osteoarthritis; osteoporosis; controls; mu CT; histomorphometry
ID trabecular bone; postmenopausal women; hip osteoarthritis; orchiectomized rat;

cancellous bone; fracture; microarchitecture; association; index; femur
AB Several studies have shown that in contrast to osteoporosis (OP), osteoarthritis (OA) is characterized by high bone mineral density (BMD). Bone strength not only depends on mineral content as determined by dual X-ray absorptiometry (DXA), but also on bone microarchitecture. We studied intertrochanteric bone from normal controls and OA and OP patients by bone histomorphometry (BHM) and microcomputed tomography (mu CT) as well as DXA in order to first, test the differences between OA and OP comparing both groups to healthy controls, second, to assess variations between three different skeletal sites in controls and third, to determine the level of agreement between mu CT, BHM, and DXA. Analysis was performed on 115 samples from OA and OP patients, and controls. We found significant differences between OA and OP samples in structural parameters and in the osteoid fraction ($p<0.05$). The majority of the intra-skeletal differences were shown between lumbar spine and femoral head samples ($p<0.05$). Significant agreements were found between mu CT and BHM and DXA ($r=0.320.45$, $p<0.05$). Our findings suggest differences in intertrochanteric bone between OA and OP, the age-related intra-skeletal variations and a correlation between microscopic and macroscopic bone evaluation methods. (c) 2013 Orthopaedic Research Society Published by Wiley Periodicals, Inc. J Orthop Res 31:10591066, 2013
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PT J
AU Wan, YH
AF Wan, Yihong
TI Bone marrow mesenchymal stem cells: Fat on and blast off by FGF21
SO INTERNATIONAL JOURNAL OF BIOCHEMISTRY & CELL BIOLOGY
LA English
DT Article
DE Bone marrow mesenchymal stem cell; Osteoblast; Adipocyte; FGF21; PPAR gamma
ID gamma; osteoclastogenesis; differentiation; rosiglitazone; osteoblast; catenin; tissue; chondrocytes; progenitors; cartilage
AB Bone marrow mesenchymal stem cells (BMMSCs) are multipotent marrow stromal cells with the ability to differentiate into a variety of cell types required for tissue regeneration including osteoblasts and chondrocytes. Thus, they hold tremendous potential as powerful therapeutic strategies for the prevention and treatment of degenerative disorders including osteoporosis and osteoarthritis. The differentiation of BMMSCs into competing lineages such as osteoblasts and marrow adipocytes is regulated by various environmental cues and intrinsic signaling pathways. Here I highlight recent advances in the understanding of BMMSC function and regulation, including the interaction between BMMSCs with the hematopoietic/immune system, and the identification of novel modulators of BMMSC differentiation such as the metabolic hormone fibroblast growth factor 21 (FGF21). These new findings will further elucidate the dynamic regulation of BMMSCs in the pathophysiological control of skeletal homeostasis, and facilitate the clinical applications of BMMSCs in regenerative medicine. (c) 2013 Elsevier Ltd. All rights reserved.

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AF Terracciano, C.
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TI Differential features of muscle fiber atrophy in osteoporosis and osteoarthritis

SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Akt; Muscle atrophy; Osteoarthritis; Osteoporosis; Sarcopenia; Type II fibers
ID bone-mineral density; signaling pathways; sarcopenia; hip; mechanisms; diagnosis; mass; fractures; arthritis; women
AB We demonstrated that osteoporosis is associated with a preferential type II muscle fiber atrophy, which correlates with bone mineral density and reduced levels of Akt, a major regulator of muscle mass. In osteoarthritis, muscle atrophy is of lower extent and related to disease duration and severity. Osteoarthritis (OA) and osteoporosis (OP) are associated with loss of muscle bulk and power. In these diseases, morphological studies on muscle tissue are lacking, and the underlying mechanisms of muscle atrophy are not known. The aim of our study was to evaluate the OP- or OA-related muscle atrophy and its correlation with severity of disease. Muscle levels of Akt protein, a component of IGF-1/PI3K/Akt pathway, the main regulator of muscle mass, have been determined. We performed muscle biopsy in 15 women with OP and in 15 women with OA (age range, 60-85 years). Muscle fibers were counted, measured, and classified by ATPase reaction. By statistical analysis, fiber-type atrophy was correlated with bone mineral density (BMD) in the OP group and with Harris Hip Score (HHS) and disease duration in the OA group. Akt protein levels were evaluated by Western blot analysis. Our findings revealed in OP a preferential type II fiber atrophy that inversely correlated with patients' BMD. In OA, muscle atrophy was of lower extent, homogeneous among fiber types and related to disease duration and HHS. Moreover, in OP muscle, the Akt level was significantly reduced as compared to OA muscles. This study shows that in OP, there is a preferential and diffuse type II fiber atrophy, proportional to the degree of bone loss, whereas in OA, muscle atrophy is connected to the functional impairment caused by the disease. A reduction of Akt seems to be one of the mechanisms involved in OP-related muscle atrophy.
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AU Bobinac, D
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AF Bobinac, D.
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TI Microstructural alterations of femoral head articular cartilage and subchondral bone in osteoarthritis and osteoporosis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Osteoporosis; Cartilage alterations; Subchondral cortical bone; Subchondral trabecular bone
ID cancellous bone; mechanical-property; mri; morphology; plate
AB Objective: Explore whether osteoporosis (OP) in humans influences the morphological status of the articular cartilage and the subchondral bone. Explore the relationship between the macroscopic aspect of the articular surface and the rate of microscopic changes of both the cartilage and the subchondral bone in OP and osteoarthritis (OA). Methods: Femoral heads after total hip replacement were obtained from patients with OP or hip OA (OP, n = 56; OA, n = 12). Cartilage degeneration was assessed using the Mankin grading system whereas subchondral

bone was evaluated using histomorphometry and Micro-computed Tomography (mu CT) scanning system. Thickness of the cartilage layers and subchondral cortical bone (SCB) was measured. Results: Samples with higher total Mankin score have significantly reduced cartilage thickness. Mankin score differed between all OP specimens. In OP samples with lower Mankin scores the thickness of SCB shows a trend of an increase caused by increased levels of bone remodeling. In OP samples with higher Mankin scores we observed thinning of SCB. Structural indices of subchondral trabecular bone (STB) were significantly lower in OP than in OA samples. Conclusion: Thinning of SCB, found in OP samples with higher Mankin scores could be related with the progression of the cartilage degeneration indicating an early-stage OA. Increased levels of bone remodeling and evidently changed morphology of subchondral bone found in OP samples with lower Mankin score indicated that bony bed level must have a role in the progression of the cartilage degeneration. (c) 2013 Published by Elsevier Ltd on behalf of Osteoarthritis Research Society International.
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TI Friend or foe: high bone mineral density on routine bone density scanning, a review of causes and management
SO RHEUMATOLOGY
LA English
DT Review
DE DXA; BMD; high bone mass; osteopetrosis; osteoarthritis
ID c-associated osteosclerosis; autosomal-dominant osteopetrosis; idiopathic skeletal hyperostosis; albers-schonberg-disease; energy x-ray; buschke-ollendorff-syndrome; camurati-engelmann-disease; latency-associated peptide; domain-specific mutations; clcn7 gene-mutations
AB A finding of high BMD on routine DXA scanning is not infrequent and most commonly reflects degenerative disease. However, BMD increases may also arise secondary to a range of underlying disorders affecting the skeleton. Although low BMD increases fracture risk, the converse may not hold for high BMD, since elevated BMD may occur in conditions where fracture risk is increased, unaffected

or reduced. Here we outline a classification for the causes of raised BMD, based on identification of focal or generalized BMD changes, and discuss an approach to guide appropriate investigation by clinicians after careful interpretation of DXA scan findings within the context of the clinical history. We will also review the mild skeletal dysplasia associated with the currently unexplained high bone mass phenotype and discuss recent advances in osteoporosis therapies arising from improved understanding of rare inherited high BMD disorders.
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Z9 100
U1 0
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PA GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND
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JI RHEUMATOLOGY
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PT J
AU Oka, H
Akune, T
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Nakamura, K
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TI The mid-term efficacy of intra-articular hyaluronic acid injections on joint structure: a nested case control study
SO MODERN RHEUMATOLOGY
LA English
DT Article
DE Hyaluronic acid; Nested case control study; Joint structure; Knee pain
ID individual radiographic features; randomized clinical-trial; knee osteoarthritis; sodium hyaluronate; hylan g-f-20; double-blind; triamcinolone hexacetonide; molecular-weight; pain; hyalgan(r)
AB Objective Intra-articular (IA) injection of hyaluronic acid (HA) has been shown to relieve osteoarthritis (OA)-related pain and improve joint structure within a 1-year period. We examined the mid-term (2-year) efficacy of IA-HA in Japanese subjects by using a large-scale population-based cohort of the Research on Osteoarthritis/Osteoporosis Against Disability study. Methods We performed a nested case control study of 60 case control pairs matched for age (within 1 year), sex, Kellgren and Lawrence grade, and history of knee pain. The mean follow-up period after IA-HA series was 2.9 years in case patients. We examined the association of IA-HA with knee radiographic severity and knee pain. To estimate radiographic severity of OA, six distinct features-joint space area and the minimum joint space width at medial and lateral sides, osteophyte area, and tibiofemoral angle-were measured using a fully automatic computer-assisted program. Results Comparison of the radiographic parameters between case patients and controls showed that the medial and lateral joint space areas were significantly bigger in case patients than in controls. After constructing a multi-variate logistic regression model to examine the correlation of knee pain, IA-HA, and radiographic features, we found that unlike radiographic features, IA-HA was protectively associated with the presence of pain. Conclusion IA-HA might effectively improve joint structure and relieve pain in patients with knee OA.
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TI Physical performance, bone and joint diseases, and incidence of falls in Japanese men and women: a longitudinal cohort study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Falls; Longitudinal study; Osteoarthritis; Pain; Walking speed
ID dwelling elderly-people; knee osteoarthritis; radiographic osteoarthritis; osteoporotic fractures; older-adults; risk-factors; lumbar spondylosis; recurrent falls; back-pain; community
AB This study examined whether physical performance and bone and joint diseases were risk factors for falls in 745 men and 1,470 women from the Research on Osteoarthritis/osteoporosis Against Disability (ROAD) study (mean, 69.7 years). Slower walking speed was a risk factor for falls in men and women. Knee pain was a risk factor for falls in women. The objective of the present study was to clarify the incidence of falls by sex and age and to determine whether physical performance and bone and joint diseases are risk factors for falls in men and women using a large-scale population-based cohort of the ROAD. A total of 745 men and 1,470

women were analyzed in the present study (mean age, 68.5 years). A questionnaire assessed the number of falls during 3 years of follow-up. Grip strength and walking speed were measured at baseline. Knee and lumbar spine radiographs were read by Kellgren-Lawrence (KL) grade; radiographic knee osteoarthritis and lumbar spondylosis were defined as KL = 3 or 4. Knee and lower back pain were estimated by an interview. During a mean follow-up of 3 years, 141 (18.9 %) men and 362 (24.6 %) women reported at least one fall. Slower walking speed was a risk factor for falls in men (0.1 m/s decrease; odds ratio [OR], 1.15; 95 % confidence interval [CI], 1.09-1.23) and women (0.1 m/s decrease; OR, 1.05; 95 % CI, 1.01-1.10). Knee pain was also a risk factor for falls (OR, 1.38; 95 % CI, 1.03-1.84) in women, but lower back pain was not. We examined the incidence and risk factors for falls in men and women. Slower walking speed was a risk factor for falls in men and women. Knee pain was a risk factor for falls in women.
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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WC Endocrinology & Metabolism
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AU Mebarek, S
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Le Duy Do
Bandorowicz-Pikula, Joanna
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TI Phospholipases of Mineralization Competent Cells and Matrix Vesicles: Roles in Physiological and Pathological Mineralizations
SO INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES
LA English
DT Review
DE bone; cartilage; osteoarthritis; osteoporosis; phospholipases; rheumatoid arthritis; sphingomyelinase; osteoblasts; osteoclasts; chondrocytes; Smooth muscle cells; matrix vesicle; mineralization; vascular calcification
ID protein-kinase-c; osteoblast-like cells; platelet-activating-factor; nf-kappa-b; phosphatidylcholine-specific phospholipase; fibroblast-growth-factor; tumor-necrosis-factor; group-ii phospholipase-a2; arachidonic-acid release; catalytically inactive protein
AB The present review aims to systematically and critically analyze the current knowledge on phospholipases and their role in physiological and pathological mineralization undertaken by mineralization competent cells. Cellular lipid metabolism plays an important role in biological mineralization. The physiological mechanisms of mineralization are likely to take place in tissues other than in bones and teeth under specific pathological conditions. For instance, vascular calcification in arteries of patients with renal failure, diabetes mellitus or atherosclerosis recapitulates the mechanisms of bone formation. Osteoporosis-a bone resorbing disease-and rheumatoid arthritis originating from the inflammation in the synovium are also affected by cellular lipid metabolism. The focus is on the lipid metabolism due to the effects of dietary lipids on bone health. These and other phenomena indicate that phospholipases may participate in bone remodelling as evidenced by their expression in smooth muscle cells, in bone forming osteoblasts, chondrocytes and in bone resorbing osteoclasts. Among various enzymes involved, phospholipases A(1) or A(2), phospholipase C, phospholipase D, autotaxin and sphingomyelinase are engaged in membrane lipid remodelling during early stages of mineralization and cell maturation in mineralization-competent cells. Numerous experimental evidences suggested that phospholipases exert their action at various stages of mineralization by affecting intracellular signaling and cell differentiation. The lipid metabolites-such as arachidonic acid, lysophospholipids, and sphingosine-1-phosphate are involved in cell signaling and inflammation reactions. Phospholipases are also important members of the cellular machinery engaged in

matrix vesicle (MV) biogenesis and exocytosis. They may favour mineral formation inside MVs, may catalyse MV membrane breakdown necessary for the release of mineral deposits into extracellular matrix (ECM), or participate in hydrolysis of ECM. The biological functions of phospholipases are discussed from the perspective of animal and cellular knockout models, as well as disease implications, development of potent inhibitors and therapeutic interventions.
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NR 667
TC 50
Z9 57
U1 0
U2 51
PU MDPI
PI BASEL
PA ST ALBAN-ANLAGE 66, CH-4052 BASEL, SWITZERLAND

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EI 1422-0067
J9 INT J MOL SCI
JI Int. J. Mol. Sci.
PD MAR 15
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BP 5036
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DI 10.3390/ijms14035036
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WC Biochemistry & Molecular Biology; Chemistry, Multidisciplinary
SC Biochemistry & Molecular Biology; Chemistry
GA 112RH
UT WOS:000316609800038
PM 23455471
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ER

PT J
AU Pecina, M
Ivkovic, J
Cicyara-Pecina, T
Ivkovic, A
AF Pecina, Marko
Ivkovic, Jana
Cicyara-Pecina, Tatjana
Ivkovic, Alan
TI Orthogeriatrics - considerations in caring for older orthopaedic patient
SO PERIODICUM BIOLOGORUM
LA English
DT Article
DE geriatrics; aging physiology; orthopaedics
ID adult-acquired flatfoot; calcaneal osteotomy; bone-density; osteoarthritis; knee; osteoporosis; pain; metaanalysis; replacement; deficiency
AB Patients over the age of 65 are the fastest growing segment of the population, and it is estimated that it comprises 12.5% of the entire population in the developed countries. Advances in medicine, science and healthy lifestyles have promoted substantially increased lifespans, as well as better quality of life with more physical activity. On the other hand, aging is associated with a variety of physiologic changes that affect orthopedic care. Due to natural involution processes older adults may not have the physiologic reserves necessary to promote healing or to prevent or recover from complications. Degenerative diseases and

injuries sustained from trauma in combination with physiologic changes and comorbidity in the aged pose a significant health problem in older adults and a major treatment challenge for an orthopaedic surgeon. This review summarizes some of these unique challenges in care for older orthopaedic patient.
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NR 44
TC 0
Z9 1
U1 0
U2 9
PU PERIODICUM BIOLOGORUM
PI ZAGREB
PA HRVATSKO PRIRODOSLOVNO DRUSTVO ILICA 16/111, 41000 ZAGREB, CROATIA
SN 0031-5362
EI
J9 PERIOD BIOL
JI Period. Biol.
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DI
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WC Biology
SC Life Sciences & Biomedicine - Other Topics
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ER

PT J
AU Tang, L
Cheng, GL
Xu, ZH
AF Tang, Li
Cheng, Guo-Lin
Xu, Zhong-Hua
TI Association between Estrogen Receptor α Gene (ESR1) PvuII (C/T) and XbaI (A/G) Polymorphisms and Hip Fracture Risk: Evidence from a Meta-Analysis
SO PLOS ONE
LA English
DT Article
ID bone-mineral density; osteoporosis; women; cancer; osteoarthritis; heterogeneity; disease; reduce
AB Background and Objective: Genetic factors are important in the pathogenesis of fractures. Notably, estrogen receptor alpha(ESR1) has been suggested as a possible candidate gene for hip fractures; however, published studies of ESR1 gene polymorphisms have been hampered by small sample sizes and inconclusive or ambiguous results. The aim of this meta-analysis is to investigate the associations between two novel common ESR1 polymorphisms (intron 1 polymorphisms PvuII-rs2234693: C > T and XbaI-rs9340799: A > G) and hip fracture. Methods: Crude odds ratios (ORs) with 95% confidence intervals (CIs) were used to evaluate the strength of the association. Results: Five case-control and three cohort studies were assessed, including a total of 1,838 hip fracture cases and 14,972 healthy controls. This meta-analysis revealed that the PvuII T allele is a highly significant risk factor for hip fracture susceptibility, with an effect magnitude similar in male and pre-menopausal and post-menopausal female patients. In stratified analysis based on ethnicity, the PvuII T allele remained significantly correlated with increased risk of hip fracture in Caucasian populations; this correlation, however, was not found in Asian populations. Unlike the PvuII polymorphism, we did not find significant differences in the XbaI (A > G) polymorphism allele or genotype distributions of hip fracture patients and controls. We also found no obvious association between the XbaI polymorphism and hip fracture in any of the racial or gender subgroups. Conclusion: Our findings show that the ESR1 PvuII T allele may increase the risk of hip fracture and that the XbaI polymorphism is not associated with hip fracture.
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Z9 15
U1 0
U2 13
PU PUBLIC LIBRARY SCIENCE
PI SAN FRANCISCO
PA 1160 BATTERY STREET, STE 100, SAN FRANCISCO, CA 94111 USA
SN 1932-6203
EI
J9 PLOS ONE
JI PLoS One
PD DEC 18
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VL 8
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BP
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WC Multidisciplinary Sciences

SC Science & Technology - Other Topics
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PT J
AU Griffiths, RI
O'Malley, CD
Herbert, RJ
Danese, MD
AF Griffiths, Robert I.
O'Malley, Cynthia D.
Herbert, Robert J.
Danese, Mark D.
TI Misclassification of incident conditions using claims data: impact of varying the period used to exclude pre-existing disease
SO BMC MEDICAL RESEARCH METHODOLOGY
LA English
DT Article
DE Incidence; Prevalence; Misclassification; Look back; Medical claims; Medicare
ID medicare claims; elderly population; adverse events; united-states; mortality; breast; beneficiary; prevalence; fractures
AB Background: Estimating the incidence of medical conditions using claims data often requires constructing a prevalence period that predates an event of interest, for instance the diagnosis of cancer, to exclude those with pre-existing conditions from the incidence risk set. Those conditions missed during the prevalence period may be misclassified as incident conditions (false positives) after the event of interest. Using Medicare claims, we examined the impact of selecting shorter versus longer prevalence periods on the incidence and misclassification of 12 relatively common conditions in older persons. Methods: The source of data for this study was the National Cancer Institute's Surveillance, Epidemiology, and End Results cancer registry linked to Medicare claims. Two cohorts of women were included: 33,731 diagnosed with breast cancer between 2000 and 2002, who had >= 36 months of Medicare eligibility prior to cancer, the event of interest; and 101,649 without cancer meeting the same Medicare eligibility criterion. Cancer patients were followed from 36 months before cancer diagnosis (prevalence period) up to 3 months after diagnosis (incidence period). Non-cancer patients were followed for up to 39 months after the beginning of Medicare eligibility. A sham date was inserted after 36 months to separate the prevalence and incidence periods. Using 36 months as the gold standard, the prevalence period was then shortened in 6-month increments to examine the impact on the number of conditions first detected during the incidence period. Results: In the breast cancer cohort,

shortening the prevalence period from 36 to 6 months increased the incidence rates (per 1,000 patients) of all conditions; for example: hypertension 196 to 243; diabetes 34 to 76; chronic obstructive pulmonary disease 29 to 46; osteoarthritis 27 to 36; congestive heart failure 20 to 36; osteoporosis 22 to 29; and cerebrovascular disease 13 to 21. Shortening the prevalence period has less impact on those without cancer. Conclusions: Selecting a short prevalence period to rule out pre-existing conditions can, through misclassification, substantially inflate estimates of incident conditions. In incidence studies based on Medicare claims, selecting a prevalence period of >= 24 months balances the need to exclude pre-existing conditions with retaining the largest possible cohort.
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NR 25
TC 44
Z9 48
U1 0
U2 5
PU BIOMED CENTRAL LTD
PI LONDON
PA 236 GRAYS INN RD, FLOOR 6, LONDON WC1X 8HL, ENGLAND
SN 1471-2288
EI
J9 BMC MED RES METHODOL
JI BMC Med. Res. Methodol.
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DI 10.1186/1471-2288-13-32
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WC Health Care Sciences & Services
SC Health Care Sciences & Services
GA 111WU
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PT J

AU Ng, XY
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Yoong, Jon
Thumboo, Julian
TI Disease patterns of rheumatology outpatients seen in a tertiary hospital serving a multi- ethnic, urban Asian population in Singapore
SO INTERNATIONAL JOURNAL OF RHEUMATIC DISEASES
LA English
DT Article
DE Asia; hospital; outpatient clinics; rheumatic diseases; Singapore
ID national database; arthritis; association; mortality; register
AB AimsTo describe the spectrum of diseases seen in an outpatient setting in the Singapore General Hospital, the largest tertiary referral centre in Singapore. MethodsIn this cross-sectional study, medical records of patients scheduled for an appointment at the rheumatology specialist outpatient clinics over a 4-month period (10 August 2010-31 December 2010) were reviewed. Primary diagnoses documented by the attending physician at the latest visit were recorded. ResultsAmong 4180 patients (29.5% male; mean [SD] age: 53.5 [15.1] years; 77.0% Chinese, 8.0% Malay, 8.8% Indian and 6.2% others), the spectrum of diseases seen was as follows [disease - definite n (%), probable n (%)]: Arthritis: rheumatoid arthritis - 958 (22.9%), 68 (1.6%); osteoarthritis - 452 (10.8%), 39 (0.9%); crystal arthritis - 417 (10.0%), 18 (0.4%); spondyloarthritis - 227 (5.4%), 61 (1.5%); psoriatic arthritis - 158 (3.8%), 9 (0.2%); other inflammatory arthritis - 153 (3.7%), 94 (2.2%); Connective tissues diseases: systemic lupus erythematosus - 412 (9.9%), 26 (0.6%); vasculitis - 105 (2.5%), 22 (0.5%); Sjogren's syndrome - 81 (1.9%), 32 (0.8%); overlap syndromes - 73 (1.8%); scleroderma - 50 (1.2%), 4 (0.1%); undifferentiated connective tissue diseases - 45 (1.1%), 106 (2.5%); myositis - 41 (1.0%), 12 (0.3%); antiphospholipid syndrome - 22 (0.5%), 7 (0.2%); polymyalgia rheumatica - 16

(0.4%); Others: soft tissue rheumatism - 155 (3.7%); osteoporosis - 61 (1.5%); other non-rheumatologic conditions - 189 (4.5%); other rheumatologic conditions - 67 (1.6%). ConclusionRheumatoid arthritis, osteoarthritis and crystal arthritis were the three most common rheumatological diseases seen in a tertiary referral centre serving a multi-ethnic urban Asian population in Singapore.
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NR 21
TC 12
Z9 14
U1 0
U2 4
PU WILEY
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PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 1756-1841
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J9 INT J RHEUM DIS
JI Int. J. Rheum. Dis.
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IS 3
BP 273
EP 278
DI 10.1111/1756-185x.12016
PG 6
WC Rheumatology
SC Rheumatology
GA AF2CU
UT WOS:000334521000006
PM 23981747
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ER

PT J
AU Delgado-Calle, J
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Riancho, Jose A.
TI Genome-wide profiling of bone reveals differentially methylated regions in osteoporosis and osteoarthritis
SO ARTHRITIS AND RHEUMATISM
LA English
DT Article
ID dna methylation; alkaline-phosphatase; postmenopausal women; mineral density; gene-expression; chondrocytes; cartilage; growth; cells; hip
AB Objective To determine genome-wide methylation profiles of bone from patients with hip osteoarthritis (OA) and those with osteoporotic (OP) hip fractures. Methods Trabecular bone pieces were obtained from the central part of the femoral head of 27 patients with hip fractures and 26 patients with hip OA. DNA was isolated, and methylation was explored with Illumina methylation arrays. RNA was extracted, pooled, and deep-sequenced to obtain the whole transcriptome. Differentially methylated regions were identified, and connections between genes with differentially methylated regions were explored by pathway and text-mining analyses. Results After quality control, methylation of 23,367 CpG sites (13,463 genes) was analyzed. There was a genome-wide inverse relationship between methylation and gene expression in both patient groups. Comparison of OP and OA bones revealed 241 CpG sites, located in 228 genes, with significant differences in methylation (false discovery rate <0.05). Of them, 217 were less methylated in OP than in OA. The absolute methylation differences were >5% in 128 CpG sites and >10% in 45 CpG sites. The differentially methylated genes were enriched for association with bone traits in the genome-wide association study catalog. Pathway analysis and text-mining analysis with Gene Relationships Across Implicated Loci software revealed enrichment in genes participating in glycoprotein metabolism or cell differentiation, and particularly in the homeobox superfamily of transcription factors. Conclusion Genome-wide methylation profiling of bone samples revealed differentially methylated regions in OP and OA. These regions were enriched in genes associated with cell differentiation and skeletal embryogenesis, such as those in the homeobox superfamily, suggesting the existence of a developmental component in the predisposition to these disorders.
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NR 50
TC 117
Z9 137
U1 1
U2 29
PU WILEY
PI HOBOKEN
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SN 0004-3591
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J9 ARTHRITIS RHEUM-US

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IS 1
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WC Rheumatology
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GA 062RD
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PT J
AU Jing, D
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TI Pulsed Electromagnetic Fields Improve Bone Microstructure and Strength in Ovariectomized Rats through a Wnt/Lrp5/β-Catenin Signaling-Associated

Mechanism
SO PLOS ONE
LA English
DT Article
ID induced osteoporosis; knee osteoarthritis; fracture repair; rank; mass; osteoclastogenesis; stimulation; osteoblasts; metabolism; disorders
AB Growing evidence has demonstrated that pulsed electromagnetic field (PEMF), as an alternative noninvasive method, could promote remarkable in vivo and in vitro osteogenesis. However, the exact mechanism of PEMF on osteopenia/osteoporosis is still poorly understood, which further limits the extensive clinical application of PEMF. In the present study, the efficiency of PEMF on osteoporotic bone microarchitecture and bone quality together with its associated signaling pathway mechanisms was systematically investigated in ovariectomized (OVX) rats. Thirty rats were equally assigned to the Control, OVX and OVX+PEMF groups. The OVX+PEMF group was subjected to daily 8-hour PEMF exposure with 15 Hz, 2.4 mT (peak value). After 10 weeks, the OVX+PEMF group exhibited significantly improved bone mass and bone architecture, evidenced by increased BMD, Tb.N, Tb.Th and BV/TV, and suppressed Tb.Sp and SMI levels in the MicroCT analysis. Three-point bending test suggests that PEMF attenuated the biomechanical strength deterioration of the OVX rat femora, evidenced by increased maximum load and elastic modulus. RT-PCR analysis demonstrated that PEMF exposure significantly promoted the overall gene expressions of Wnt1, LRP5 and b-catenin in the canonical Wnt signaling, but did not exhibit obvious impact on either RANKL or RANK gene expressions. Together, our present findings highlight that PEMF attenuated OVX-induced deterioration of bone microarchitecture and strength in rats by promoting the activation of Wnt/LRP5/b-catenin signaling rather than by inhibiting RANKL-RANK signaling. This study enriches our basic knowledge to the osteogenetic activity of PEMF, and may lead to more efficient and scientific clinical application of PEMF in inhibiting osteopenia/osteoporosis.
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U2 30
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J9 PLOS ONE
JI PLoS One
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WC Multidisciplinary Sciences
SC Science & Technology - Other Topics
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TI The effects of physical activity on apoptosis and lubricin expression in articular cartilage in rats with glucocorticoid-induced osteoporosis
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Articular cartilage; Glucocorticoids; Lubricin; Caspase 3; Physical activity
ID temporomandibular-joint disc; superficial zone; synovial-fluid; chondrocytes; bone; osteoarthritis; protein; cells; immunolocalization; proteoglycan
AB Glucocorticoids are considered the most powerful anti-inflammatory and immunomodulating drugs. However, a number of side-effects are well documented in different diseases, including articular cartilage, where increases or decreases in the synthesis of hormone-dependent extracellular matrix components are seen. The objective of this study has been to test the effects of procedures or drugs affecting bone metabolism on articular cartilage in rats with prednisolone-induced osteoporosis and to evaluate the outcomes of physical activity with treadmill and vibration platform training on articular cartilage. The animals were divided into 5 groups, and bone and cartilage evaluations were performed using whole-body scans and histomorphometric analysis. Lubricin and caspase-3 expression were evaluated by immunohistochemistry, Western blot analysis and biochemical analysis. These results confirm the beneficial effect of physical activity on the articular cartilage. The effects of drug therapy with glucocorticoids decrease the expression of lubricin and increase the expression of caspase-3 in the rats, while

after physical activity the values return to normal compared to the control group. Our findings suggest that it might be possible that mechanical stimulation in the articular cartilage could induce the expression of lubricin, which is capable of inhibiting caspase-3 activity, preventing chondrocyte death. We can assume that the physiologic balance between lubricin and caspase-3 could maintain the integrity of cartilage. Therefore, in certain diseases such as osteoporosis, mechanical stimulation could be a possible therapeutic treatment. With our results we can propose the hypothesis that physical activity could also be used as a therapeutic treatment for cartilage disease such as osteoarthritis.
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CR Almeida M, 2011, J BIOL CHEM, V286, P44326, DOI 10.1074/jbc.M111.283481
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NR 56
TC 73
Z9 91
U1 0
U2 24
PU SPRINGER JAPAN KK
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PA SHIROYAMA TRUST TOWER 5F, 4-3-1 TORANOMON, MINATO-KU, TOKYO, 105-6005, JAPAN
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J9 J BONE MINER METAB
JI J. Bone Miner. Metab.
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WC Endocrinology & Metabolism; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Research & Experimental Medicine
GA 149CG

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PT J
AU Pallante-Kichura, AL
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AF Pallante-Kichura, Andrea L.
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TI Bone cysts after osteochondral allograft repair of cartilage defects in goats suggest abnormal interaction between subchondral bone and overlying synovial joint tissues
SO BONE
LA English
DT Article
DE Osteochondral allografts; Bone cysts; Micro-computed tomography; Animal model
ID term-follow-up; knee osteoarthritis; stored allografts; femoral condyles; hip; microstructure; association; storage; lesions; people
AB The efficacy of osteochondral allografts (OCAs) may be affected by osseous support of the articular cartilage, and thus affected by bone healing and remodeling in the OCA and surrounding host. Bone cysts, and their communication pathways, may be present in various locations after OCA insertion and reflect distinct pathogenic mechanisms. Previously, we analyzed the effect of OCA storage (FRESH, 4 degrees C/14d, 4 degrees C/28d, FROZEN) on cartilage quality in fifteen adult goats after 12 months in vivo. The objectives of this study were to further analyze OCAs and contralateral non-operated (Non-Op) CONTROLS from the medial femoral condyle to (1) determine the effect of OCA storage on local subchondral bone (ScB) and trabecular bone (TB) structure, (2) characterize the location and structure of bone cysts and channels, and (3) assess the relationship between cartilage and bone properties, (1) Overall bone structure after OCAs was altered compared to Non-Op, with OCA samples displaying bone cysts, ScB channels, and ScB roughening. ScB BV/TV in FROZEN OCAs was lower than Non-Op and other OCAs. TB Bwry in FRESH, 4 degrees C/14d, and 4 degrees C/28d OCAs did not vary compared to Non-Op, but BsTry was lower. (2) OCAs contained "basal" cysts, localized to deeper regions, some "subchondral" cysts, localized near the bone-cartilage interface, and some ScB channels. TB surrounding basal cysts exhibited higher Bwry than Non-Op. (3) Basal cysts occurred (a) in isolation, (b) with subchondral cysts and ScB channels, (c) with ScB channels, or (d) with

subchondral cysts, ScB channels, and ScB erosion. Deterioration of cartilage gross morphology was strongly associated with abnormal mu CT bone structure. Evidence of cartilage-bone communication following OCA repair may favorfluid intrusion as a mechanism for subchondral cyst formation, while bone resorption at the graft-host interface without affecting overall bone and cartilage structure may favor bony contusion mechanism for basal cyst formation. These findings suggest that cysts occurring after OCAs may result from aberrant mechanobiology due to (1) altered compartmentalization that normally separates overlying cartilage and subchondral bone, either from distinct ScB channels or more general ScB plate deterioration, and (2) bone resorption at the basal graft-host interface. (C) 2013 Elsevier Inc. All rights reserved.
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NR 50
TC 34
Z9 46
U1 0
U2 22
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA
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J9 BONE
JI Bone
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 235TC
UT WOS:000325742600034
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ER

PT J
AU Esenyel, M
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Esenyel, CZ
AF Esenyel, Meltem
Icagasioglu, Afitap
Esenyel, Cem Zeki
TI Effects of calcitonin on knee osteoarthritis and quality of life
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE Osteoporosis; Osteoarthritis; Calcitonin treatment; Rescue analgesic
ID salmon-calcitonin; articular chondrocytes; cartilage degradation; postmenopausal women; biochemical markers; turkish version; ii degradation; bone turnover; index; osteoporosis
AB There has been a recent interest in calcitonin as a potential treatment for osteoarthritis, based on its metabolic activities in both bone turnover and cartilage. The aim of this study was to evaluate the effects of nasal form calcitonin on knee osteoarthritis and quality of life in women who receive calcitonin treatment for postmenopausal osteoporosis. Two hundred and twenty postmenopausal women, aged between 55 and 65 years with knee pain and knee osteoarthritis, graded II-III by using Kellgren-Lawrence radiographic scoring system, were included. Western Ontario and McMaster Universities (WOMAC) osteoarthritis index, the quality of life questionnaire of the European Foundation for Osteoporosis (QALEFFO-41) and visual analog scale were used for the algofunctional assessments. Need of rescue analgesic was recorded. Pain ($P < 0.001$), stiffness ($P < 0.05$), functional capability ($P < 0.05$) and total score of WOMAC ($P < 0.05$) revealed statistically significant improvements after 3 months of the treatment and remained consistent throughout 1 year of the treatment period. Participants experienced significant reductions in WOMAC perceptions of pain (-53 %), joint stiffness (-44 %) and limitations in physical function (-49 %) at the end of 1 year of calcitonin treatment. Need of rescue analgesic intake was reported to have decreased approximately by 60 % at the end of the 1-year treatment period. QUALEFFO_41 scores improved: 37.6 (baseline), 30.9 (3 months), 28.0 (6 months) and 24.4 (1 year). In conclusion, nasal calcitonin treatment provided dual action on osteoporosis and osteoarthritis with significant improvements in quality of life and algofunctional results in knee osteoarthritis.
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Z9 26
U1 0
U2 14
PU SPRINGER HEIDELBERG
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PA TIERGARTENSTRASSE 17, D-69121 HEIDELBERG, GERMANY
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WC Rheumatology
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PT J
AU Holland, JC
Brennan, O
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Lee, TC
AF Holland, J. C.
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TI Examination of osteoarthritis and subchondral bone alterations within the stifle joint of an ovariectomised ovine model
SO JOURNAL OF ANATOMY
LA English
DT Article
DE bone mineral density; bone turnover; osteoarthritis; osteoporosis; ovariectomy; remodelling
ID articular-cartilage; mineral density; animal-models; biomechanical property; knee arthroplasty; cancellous bone; united-states; femoral-head; osteoporosis; estrogen
AB The exact relationship between osteoporosis and osteoarthritis is still a matter for debate for many. The ovariectomised ewe is frequently used as a model for osteoporosis, resulting in significant alterations in bone morphometry and turnover in both trabecular and subchondral bone after 1year. This study examines whether ovariectomy has any impact on development of osteoarthritis within the ovine stifle joint at the same time point. In addition, we investigate whether there are any significant correlations present between articular cartilage degeneration and alterations in microstructural parameters or turnover rates in the underlying bone. Twenty-two sheep were examined in this study; 10 of the sheep underwent ovariectomy and 12 were kept as controls. Five distinctive fluorochrome dyes were administered intravenously at 12-week intervals to both groups, to label sites of bone turnover. All animals were then sacrificed 12months postoperatively. Although most specimens showed some evidence of osteoarthritis, no measurable difference between the two study groups was detected. Osteoarthritis was associated with a thinning of the subchondral plate, specifically the subchondral cortical bone; however, whereas previous studies have suggested a link between trabecular thinning and osteoarthritis, this was not confirmed. No correlation was found between osteoarthritis and bone turnover rates of either the subchondral trabecular bone or bone plate. In conclusion, despite the fact that ovariectomy results in marked morphological and structural changes in the ovine stifle joint at 1-year postoperatively, no evidence was found to suggest that it plays a direct role in the aetiology of osteoarthritis.
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TI Treatment of osteoporosis in men
SO BONE
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DT Review
DE Bone mineral density; Fracture risk; Gonadal hormone status; Treatment; T-score
ID bone-mineral density; parathyroid-hormone 1-34; yearly zoledronic acid; postmenopausal women; fracture risk; hip fracture; elderly-men; randomized-trial; strontium ranelate; older men
AB Aspects of osteoporosis in men, such as screening and identification strategies, definitions of diagnosis and intervention thresholds, and treatment options (both approved and in the pipeline) are discussed. Introduction: Awareness of osteoporosis in men is improving, although it remains under-diagnosed and under-treated. A European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO) workshop was convened to discuss osteoporosis in men and to provide a report by a panel of experts (the authors). Methods: A debate with an expert panel on preselected topics was conducted. Results and conclusions: Although additional fracture data are needed to endorse the clinical care of osteoporosis in men, consensus views were reached on diagnostic criteria and intervention thresholds. Empirical data in men display similarities with data acquired in women, despite pathophysiological differences, which may not be clinically relevant. Men should receive treatment at a similar 10-year fracture probability as in women. The design of mixed studies may reduce the lag between comparable treatments for osteoporosis in women becoming available in men. (C) 2012 Elsevier Inc. All rights reserved.
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TI Technique for bone volume measurement from human femur head samples by classification of micro-CT image histograms
SO ANNALI DELL ISTITUTO SUPERIORE DI SANITA
LA English
DT Article
DE microtomography; osteoarthritis, osteoporosis; bone morphometry; image processing
ID trabecular bone; cancellous bone; resolution; osteoporosis
AB Introduction. Micro-CT analysis is a powerful technique for a non-invasive evaluation of the morphometric parameters of trabecular bone samples. This elaboration requires a previous binarization of the images. A problem which arises from the binarization process is the partial volume artifact. Voxels at the external surface of the sample can contain both bone and air so thresholding operates an incorrect estimation of volume occupied by the two materials. Aim. The aim of this study is the extraction of bone volumetric information directly from the image histograms, by fitting them with a suitable set of functions. Methods. Nineteen trabecular bone samples were extracted from femoral heads of eight patients subject to a hip arthroplasty surgery. Trabecular bone samples were acquired using micro-CT Scanner. Hystograms of the acquired images were computed and fitted by Gaussian-like functions accounting for: a) gray levels produced by the bone x-ray absorption, b) the portions of the image occupied by air and c) voxels that contain a mixture of bone and air. This latter contribution can be considered such as an estimation of the partial volume effect. Results. The comparison of the proposed technique to the bone volumes measured by a reference instrument such as by a helium pycnometer show the method as a good way for an accurate bone volume calculation of trabecular bone samples.
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NR 26
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Z9 23
U1 0
U2 12

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PA VIA SAN GIOVANNI VALDARNO 8, ROME, 00198, ITALY
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EI
J9 ANN I SUPER SANITA
JI Ann. Ist. Super. Sanita
PD JUN 15
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IS 3
BP 300
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DI 10.4415/ANN_13_03_11
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WC Public, Environmental & Occupational Health
SC Public, Environmental & Occupational Health
GA 261WZ
UT WOS:000327696600011
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PT J
AU Kazakia, GJ
Kuo, D
Schooler, J
Siddiqui, S
Shanbhag, S
Bernstein, G
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Ries, M
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Ries, M.
Li, X.

TI Bone and cartilage demonstrate changes localized to bone marrow edema-like lesions within osteoarthritic knees
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Knee; Marrow lesion; Edema; Subchondral bone; Histopathology; CT; MRI; FTIR; Tissue quality
ID cancellous bone; trabecular bone; femoral-head; mineralization; osteoporosis; association; tomography; thickness; turnover; pain
AB Objective: Our objective is to understand the biological and mechanical pathways linking cartilage, bone, and marrow changes in the progression of osteoarthritis (OA). The aim of the present study was to evaluate bone structure and composition within bone marrow edema-like lesion (BMEL) regions associated with knee OA. Methods: Tibial plateau specimens (n = 18) were collected from 10 subjects with knee OA during total knee arthroplasty (TKA). Magnetic resonance (MR) imaging was used to identify BMEL and quantify metrics of cartilage composition. Micro-computed tomography (mu CT) and high-resolution peripheral quantitative computed tomography (HR-pQCT) were used to quantify density and microstructure of the subchondral trabecular bone. Fourier transform infrared (FTIR) spectroscopy was used to quantify tissue composition. Results: Trabecular bone within BMEL was higher in volume fraction, with more and thicker trabeculae that were more plate-like in structure compared to unaffected regions. BMEL trabecular tissue composition had decreased phosphate and carbonate content. Marrow infiltration by a fibrous collagen network and evidence of increased bone remodeling were present. Structural and compositional changes were specifically localized to regions underlying cartilage degradation. Conclusion: These results support the paradigm of focal interactions among bone, marrow, and cartilage in the progression of knee OA. Quantitative evaluation of tissue changes and interactions may aid in the understanding of disease pathophysiology and provide imaging markers for disease progression. (C) 2012 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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FU UCSF Department of Radiology and Biomedical Imaging Pilot Grant Program; NIH [K01 AR056734, K25 AR053633, R21AR056773, RO1 AG17762]
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NR 37
TC 55
Z9 65
U1 1
U2 20
PU ELSEVIER SCI LTD
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PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584
EI
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD JAN 15
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WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA 083QL
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PT J
AU Jansen, JA
Haddad, FS
AF Jansen, J. A.
Haddad, F. S.
TI High prevalence of vitamin D deficiency in elderly patients with advanced osteoarthritis scheduled for total knee replacement associated with poorer preoperative functional state
SO ANNALS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND
LA English
DT Article
DE Vitamin D; Deficiency; 25-hydroxyvitamin; Osteoarthritis; Knee; Replacement; Arthroplasty
ID bone-mineral density; serum-levels; osteoporosis; female; women
AB Vitamin D deficiency has been reported previously in patients with osteoarthritis undergoing total hip arthroplasty. We found a high prevalence of vitamin D deficiency in elderly patients with advanced knee osteoarthritis scheduled for total knee replacement and also a significant association with a lower preoperative functional state. A review of the literature is given on vitamin D deficiency in patients with knee osteoarthritis and the association with lower outcome scores after arthroplasty is discussed.
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10.1007/BF00393884
NR 18
TC 54
Z9 64
U1 1
U2 5
PU ROYAL COLL SURGEONS ENGLAND
PI LONDON
PA 35-43 LINCOLN'S INN FIELDS, LONDON WC2A 3PN, ENGLAND
SN 0035-8843
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J9 ANN ROY COLL SURG
JI Ann. R. Coll. Surg. Engl.
PD NOV 15
PY 2013
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WC Surgery
SC Surgery
GA 261PN
UT WOS:000327677200007
PM 24165338
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PT J
AU Domiciano, DS

Figueiredo, CP
Lopes, JB
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Fuller, P
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AF Domiciano, Diogo S.
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TI Vertebral Fracture Assessment by Dual X-Ray Absorptiometry: A Valid Tool to Detect Vertebral Fractures in Community-Dwelling Older Adults in a Population-Based Survey
SO ARTHRITIS CARE & RESEARCH
LA English
DT Article
ID morphometric radiography; postmenopausal women; osteoporosis; deformity; risk; men; densitometry; mortality; spine; osteoarthritis
AB Objective Vertebral fractures are associated with higher morbidity and mortality. Since 70% of vertebral fractures are clinically silent, a radiologic image of the spine has to be acquired for the diagnosis. The aim of this study was to compare the performance of Vertebral Fracture Assessment (VFA) by dual x-ray absorptiometry (DXA) with radiographs to identify vertebral fractures in community-dwelling older adults. Methods A total of 429 older adults (ages 65 years) were enrolled in this cohort. VFA by DXA measurements were evaluated by 2 expert rheumatologists by consensus, and spine radiographs were analyzed according to the semiquantitative method by an expert radiologist. The correlation between VFA and spine radiographs to identify vertebral fractures was analyzed by kappa scores. Results The prevalence of vertebral fractures in VFA and radiographs was 29.1% and 29.4%, respectively ($P = 0.99$). The frequency of unavailable vertebrae was significantly lower in spinal radiographs than in VFA (0.9% and 5.6%, respectively; $P < 0.001$), particularly in T4T6. According to VFA, 5,013 vertebrae (96%) were identified as normal and 144 (2.7%) had grade 1, 58 (1.1%) had grade 2, and 12 (0.2%) had

grade 3 fractures. The sensitivity of VFA was 72.9% and the specificity was 99.1% to identify vertebral fractures. The sensitivity increased to 92% and the specificity increased to 99.9% when excluding grade 1 deformities. A good correlation between VFA and radiographs (= 0.74) was observed, and the exclusion of grade 1 resulted in even better agreement (= 0.84). Conclusion In community-dwelling older adults, VFA and radiographs had comparable performances in identifying vertebral fractures, particularly if mild deformities are excluded. Therefore, this methodology is a feasible and promising alternative to improve the management of patients with a high risk of osteoporotic fractures.
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NR 39
TC 37
Z9 43
U1 1
U2 6
PU WILEY-BLACKWELL
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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EI
J9 ARTHRIT CARE RES
JI Arthritis Care Res.
PD MAY 15
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VL 65
IS 5
BP 809
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DI 10.1002/acr.21905
PG 7
WC Rheumatology
SC Rheumatology
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UT WOS:000318114700019
PM 23212896
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PT J
AU Thomsen, JS
Straarup, TS
Danielsen, CC
Oxlund, H
Brüel, A
AF Thomsen, J. S.
Straarup, T. S.
Danielsen, C. C.
Oxlund, H.
Bruel, A.
TI No effect of risedronate on articular cartilage damage in the Dunkin Hartley guinea pig model of osteoarthritis
SO SCANDINAVIAN JOURNAL OF RHEUMATOLOGY
LA English
DT Article
ID bone-mineral density; subchondral bone; knee osteoarthritis; biochemical markers; alendronate; turnover; progression; osteoporosis; degradation; inhibition
AB Objectives: To investigate whether treatment with a bisphosphonate would influence the subchondral bone plate stiffness and the development of cartilage damage in Dunkin Hartley guinea pigs, which develop osteoarthritis (OA) spontaneously. Method: Fifty-six 3-month-old male Dunkin Hartley guinea pigs were randomized into a baseline group and six groups receiving either the bisphosphonate risedronate (30 mu g/kg) or vehicle five times a week for 6, 12, or 24 weeks. The medial condyle of the right stifle joint was investigated by histology, using the Osteoarthritis Research Society International (OARSI) score, along with static and dynamic histomorphometry. The subchondral bone plate of the left tibia was tested mechanically with indentation testing. Degradation products of C-terminal telopeptides of type II collagen (CTX-II) were measured in serum. Results: The OARSI score did not differ between risedronate-treated and control animals at any time point. The fraction of bone surfaces covered with osteoclasts (Oc.S/BS) was significantly suppressed in risedronate-treated animals at all time points, as were the fractions of mineralizing surfaces (MS/BS) and osteoid-covered surfaces (OS/BS), and also serum CTX-II. This was accompanied by a significant increase in the epiphyseal content of calcified tissue and in the thickness of the subchondral bone plate. However, this did not result in a stiffer subchondral bone at any time point. Discussion: The risedronate treatment inhibited osteoclastic resorption of calcified cartilage in the primary spongiosa under the epiphyseal growth plate, explaining the risedronate-mediated decrease in CTX-II. Moreover,

the serum CTX-II level was not related to the OA-induced articular cartilage degradation seen in this model. Conclusions: Risedronate did not influence the OARSI score and subchondral plate stiffness, but decreased serum CTX-II in Dunkin Hartley guinea pigs.
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NR 60
TC 12
Z9 16
U1 0
U2 5
PU TAYLOR & FRANCIS LTD
PI ABINGDON
PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
SN 0300-9742
EI 1502-7732
J9 SCAND J RHEUMATOL
JI Scand. J. Rheumatol.
PD JUN 15
PY 2013
VL 42
IS 5
BP 408
EP 416
DI 10.3109/03009742.2013.774046
PG 9
WC Rheumatology
SC Rheumatology
GA 217EY
UT WOS:000324341000013
PM 23527881
DA 2026-02-10
ER

PT J
AU Corrado, A
Neve, A
Cantatore, FP
AF Corrado, Addolorata
Neve, Anna
Cantatore, Francesco Paolo
TI Expression of vascular endothelial growth factor in normal, osteoarthritic and osteoporotic osteoblasts
SO CLINICAL AND EXPERIMENTAL MEDICINE
LA English
DT Article

DE VEGF; Osteoblasts; Osteoarthritis; Osteoporosis
ID subchondral bone; 1,25-dihydroxyvitamin d-3; cells; vegf; angiogenesis
AB To evaluate vascular endothelial growth factor (VEGF) mRNA expression and protein synthesis in primary human osteoblast cultures from healthy, osteoporotic and osteoarthritic subjects. Normal primary human osteoblast cultures were obtained from healthy subjects undergoing surgery for the reduction in traumatic fractures. Pathological osteoblasts were obtained from patients undergoing to total hip replacement for osteoporotic hip fracture or advanced osteoarthritis. VEGF mRNA expression and protein synthesis were evaluated in cultured cells, by semiquantitative real-time PCR and ELISA, respectively, both under basal conditions than after vitamin D-3 stimulation. Osteoarthritic osteoblasts showed a significantly higher VEGF expression compared to the normal and OP osteoblasts, both under basal conditions than in the presence of vitamin D-3, whereas no difference was found between osteoporotic and normal osteoblast. Vitamin D-3 significantly enhanced VEGF expression in normal and pathological osteoblasts. This preliminary study supports the hypothesis that VEGF is involved in the pathogenic mechanisms underlying the bone alterations typical of osteoarthritis and confirms the crucial role of vitamin D-3 supplementation in metabolic bone diseases.
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NR 16
TC 42
Z9 48
U1 0
U2 8
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 1591-8890
EI
J9 CLIN EXP MED
JI Clin. Exper. Med.
PD FEB 15
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VL 13
IS 1
BP 81
EP 84
DI 10.1007/s10238-011-0170-5
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WC Medicine, Research & Experimental
SC Research & Experimental Medicine
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PT J
AU Ishii, Y
Noguchi, H
Takeda, M
Sato, J
Yamamoto, N
Wakabayashi, H
Kanda, J
Toyabe, S
AF Ishii, Yoshinori
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Yamamoto, Noriaki
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Kanda, Junkichi
Toyabe, Shin-ichi
TI Distribution of vitamin K2 in subchondral bone in osteoarthritic knee joints
SO KNEE SURGERY SPORTS TRAUMATOLOGY ARTHROSCOPY
LA English
DT Article
DE Vitamin K2; High-performance liquid chromatography; Subchondral bone; Osteoarthritis knee joint; Total knee arthroplasty
ID fermented soybean natto; ovariectomized rats; postmenopausal women; mineral density; k status; cartilage; menaquinone-7; phylloquinone; osteoporosis; tissue
AB Vitamin K may have multiple effects on articular cartilage and subchondral bone that could modulate the pathogenesis of osteoarthritis (OA). The purpose of this study was to evaluate the distribution of vitamin K2 in harvested bones obtained during total knee arthroplasty in knee OA patients. High-performance liquid chromatography was used to measure vitamin K2 in harvested bones obtained during 58 TKA procedures. Vitamin K2 levels were analysed in the medial (FM) and lateral (FL) femoral condyles and in the medial (TM) and lateral (TL) tibial condyles. There was significantly more vitamin K2 in the lateral femoral and tibial condyles than in the corresponding medial condyles (FL vs. FM, $p < 0.0001$; TL vs. TM, $p < 0.0001$). There was significantly more vitamin K2 in the FL than in the TL ($p = 0.003$), and in the FM, vitamin K2 levels were higher than those of the TM, although this was not significant (n.s.). There were no significant differences in vitamin K2 levels in men versus women nor was there a significant correlation with age. This study suggested that vitamin K2 might affect bone turnover since medial condyles showing advanced OA had lower vitamin K2 levels, while lateral condyles showing less advanced OA contained more vitamin K2. Gender and age were not correlated with vitamin K2 localization. All cases had Grade IV OA, and this study suggested that OA grade might be important in controlling the vitamin K2 levels in human bones.
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NR 33
TC 6

Z9 8
U1 1
U2 13
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0942-2056
EI
J9 KNEE SURG SPORT TR A
JI Knee Surg. Sports Traumatol. Arthrosc.
PD AUG 15
PY 2013
VL 21
IS 8
BP 1813
EP 1818
DI 10.1007/s00167-012-2239-4
PG 6
WC Orthopedics; Sport Sciences; Surgery
SC Orthopedics; Sport Sciences; Surgery
GA 190KK
UT WOS:000322338500013
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PT J
AU Dvir-Ginzberg, M
   Steinmeyer, J
AF Dvir-Ginzberg, Mona
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TI Towards elucidating the role of SirT1 in osteoarthritis
SO FRONTIERS IN BIOSCIENCE-LANDMARK
LA English
DT Article
DE Ageing; osteoarthritis; OA; Histone Modifying Enzymes; Silent Information Regulator 2 Type 1; Sirt1; Inflammation; Review
ID interleukin-1-beta-induced nitric-oxide; articular chondrocytes; histone deacetylase; candidate genes; cartilage; expression; aggrecan; matrix; proteoglycan; apoptosis
AB Osteoarthritis (OA) is a degenerative joint disease particularly affecting the elderly population. Although several genetic features have been characterized as risk factors for OA susceptibility, a growing body of evidence indicates that epigenetic effectors may also modulate gene expression and thus contribute to OA

pathology. One such epigenetic regulator of particular relevance to OA is Silent Information Regulator 2 type 1 (SirT1) which has been linked to aging and caloric intake, Consistently, SirT1 has been also connected with various age-associated diseases such as diabetes type II, Alzheimers and osteoporosis. Recent reports show that OA is linked to changes in SirT1 activity or levels within cartilage. In human chondrocytes, SirT1 plays a role in cartilage extracellular matrix (ECM) synthesis and promotes cell survival, even under proinflammatory stress. It appears that SirT1 fine tunes many cellular biochemical processes through its capacity to interact and modify various histone and non-histone proteins. Taken together these investigations demonstrate that SirT1 is involved in cartilage biology and could potentially serve as novel drug target in treating OA even at its premature stages, thereby possibly reversing mechanical-stress induced cartilage degeneration.
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FU Marie Curie European IRG reintegration grant
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WC Biochemistry & Molecular Biology; Cell Biology
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PT J
AU Christodoulou, S
Goula, T
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AF Christodoulou, S.
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TI Vitamin D and Bone Disease
SO BIOMED RESEARCH INTERNATIONAL
LA English
DT Review
ID stress-fractures; mineral density; d supplementation; postmenopausal women; parathyroid function; calcium-absorption; osteoporosis; association; osteoarthritis; rickets
AB Vitamin D is important for normal development and maintenance of the skeleton. Hypovitaminosis D adversely affects calcium metabolism, osteoblastic activity, matrix ossification, bone remodeling and bone density. It is well known that Vit. D deficiency in the developing skeleton is related to rickets, while in adults is related to osteomalacia.. e causes of rickets include conditions that lead to hypocalcemia and/or hypophosphatemia, either isolated or secondary to vitamin D deficiency. In osteomalacia, Vit. D deficiency leads to impairment of the mineralisation phase of bone remodeling and thus an increasing amount of the skeleton being replaced by unmineralized osteoid. The relationship between Vit. D and bone mineral density and osteoporosis are still controversial while new evidence suggests that Vit. D may play a role in other bone conditions such as osteoarthritis and stress fractures. In order to maintain a "good bone health" guidelines concerning the recommended dietary intakes should be followed and screening for Vit. D deficiency in individuals at risk for deficiency is required, followed by the appropriate action.
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Z9 129
U1 0
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PU HINDAWI LTD

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WC Biotechnology & Applied Microbiology; Medicine, Research & Experimental
SC Biotechnology & Applied Microbiology; Research & Experimental Medicine
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AU Bultink, IEM
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AF Bultink, Irene E. M.
   Lems, Willem F.
TI Osteoarthritis and Osteoporosis: What Is the Overlap?
SO CURRENT RHEUMATOLOGY REPORTS
LA English
DT Article
DE Adipokines; Anti-osteoporotic drugs; Bisphosphonates; Body mass index; Bone mineral density; Bone remodelling; Calcitonin; Cartilage; Cathepsin K inhibitors; Estrogen; Fracture; Inflammation; Obesity; Osteoarthritis; Osteoporosis; Strontium ranelate; Subchondral bone; Teriparatide; Overlap
ID body-mass index; strontium ranelate; subchondral bone; knee osteoarthritis; salmon-calcitonin; cartilage degradation; postmenopausal women; ctx-ii; articular chondrocytes; estrogen
AB Osteoarthritis (OA) and osteoporosis (OP) are highly prevalent health problems, associated with considerable morbidity. In the past, attention was focused on a supposed inverse relationship between OA and OP, since both disorders usually affect the elderly, but were regarded to rarely coexist in a single person. However, recent studies have revealed several factors which contribute to the pathogenesis of both disorders. These insights might contribute to the development of shared

new treatment options in the near future. Increased subchondral bone loss is a characteristic feature of OP and the early stage of OA, and this finding is the rationale for studies on the effect of anti-osteoporotic drugs in OA. In addition, inflammation and unfavourable body composition have been recognized as contributing factors for both disorders. Underweight is a risk factor for OP, while obesity stimulates the development of OA, by mechanical overloading of weight-bearing joints but also by supposed unfavourable effects of adipokines.
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FU Merck; Sharp Dohme; Eli Lilly and Company; Servier Laboratories; Amgen
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Z9 84
U1 0
U2 7
PU SPRINGER
PI NEW YORK
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J9 CURR RHEUMATOL REP
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TI Association of lumbar disc degeneration with osteoporotic fractures; the Rotterdam study and meta-analysis from systematic review
SO BONE
LA English
DT Article
DE Lumbar disc degeneration; Osteoporotic fractures; Bone Mineral Density; Disc space narrowing; Vertebral fractures
ID bone-mineral density; quality-of-life; postmenopausal women; vertebral fractures; risk-factors; back-pain; incident; osteoarthritis; spine; men
AB Objective: To investigate the relation between lumbar disc degeneration (LDD) and all type of osteoporotic (OP) fractures including vertebral. Methods: This study is part of the Rotterdam study, a large prospective population-based cohort study among men and women aged 55 years and over. In 2819 participants spine radiographs were scored for LDD (osteophytes and disc space narrowing (DSN)) from L1 till Si, using the Lane atlas. Osteoporotic (OP) fracture data were collected and verified by specialists during 12.8 years. We considered two types of vertebral fractures (VFx): Clinical VFx (symptomatic fractures recorded by medical practitioners) and Radiographic VFx (using the McCloskey-Kanis method). Meta-analysis of published studies reporting an association of LDD features and VFx was performed. Differences in Bone Mineral Density (BMD) between participants with and without LDD features were analyzed using ANOVA. Risk of OP-fractures was analyzed using Cox regression. Results: In a total of 2385

participants, during 12.8 years follow-up, 558 suffered an OP-fracture. Subjects with LDD had an increased OP fracture risk compared to subjects without LDD (HR: 129, CI: 1.04-1.60). LDD-cases have between 03 and 0.72 standard deviations more BMD than non-cases in all analyzed regions including total body BMD and skull BMD (P < 0.001). Only males with LDD had increased risk for OP-fractures compared to males without LDD (adjusted-HR: 1.80, 95%CI 1.20-2.70, P = 0.005). The risk was also higher for VFx in males (HR: 1.64, CI: 1.03-2.60, P: 0.04). The association LDD-OP-fractures in females was lower and not significant (adjusted-HR: 1.08, 95%CI: 0.82-1.41). Meta-analyses showed that the risk of VFx in subjects with LDD has been studied only in women and there is not enough evidence to confidently analyze the relationship between LDD-features (DSN or/and OPH) and VFx due to low power and heterogeneity in phenotype definition in the collected studies. Conclusions: Male subjects with LDD have a higher osteoporotic fracture risk, in spite of systemically higher BMD. (C) 2013 Elsevier Inc. All rights reserved.
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PT J
AU Rizzoli, R
Boonen, S
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AF Rizzoli, R.
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Kanis, J. A.
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Weryha, G.
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TI Vitamin D supplementation in elderly or postmenopausal women: a 2013 update of the 2008 recommendations from the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO)
SO CURRENT MEDICAL RESEARCH AND OPINION
LA English

DT Review
DE Bone health; Guidance; Osteoporosis; Supplementation; Vitamin D
ID circulating 25-hydroxyvitamin d; d deficiency; pooled analysis; fracture risk; d inadequacy; calcium; mortality; prevention; population; frailty
AB Background: Vitamin D insufficiency has deleterious consequences on health outcomes. In elderly or postmenopausal women, it may exacerbate osteoporosis. Scope: There is currently no clear consensus on definitions of vitamin D insufficiency or minimal targets for vitamin D concentrations and proposed targets vary with the population. In view of the potential confusion for practitioners on when to treat and what to achieve, the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO) convened a meeting to provide recommendations for clinical practice, to ensure the optimal management of elderly and postmenopausal women with regard to vitamin D supplementation. Findings: Vitamin D has both skeletal and extra-skeletal benefits. Patients with serum 25-hydroxyvitamin D (25-(OH)D) levels <50 nmol/L have increased bone turnover, bone loss, and possibly mineralization defects compared with patients with levels >50 nmol/L. Similar relationships have been reported for frailty, nonvertebral and hip fracture, and all-cause mortality, with poorer outcomes at <50 nmol/L. Conclusion: The ESCEO recommends that 50 nmol/L (i.e. 20 ng/mL) should be the minimal serum 25-(OH)D concentration at the population level and in patients with osteoporosis to ensure optimal bone health. Below this threshold, supplementation is recommended at 800 to 1000 IU/day. Vitamin D supplementation is safe up to 10,000 IU/day (upper limit of safety) resulting in an upper limit of adequacy of 125 nmol/L 25-(OH)D. Daily consumption of calcium-and vitamin-D-fortified food products (e.g. yoghurt or milk) can help improve vitamin D intake. Above the threshold of 50 nmol/L, there is no clear evidence for additional benefits of supplementation. On the other hand, in fragile elderly subjects who are at elevated risk for falls and fracture, the ESCEO recommends a minimal serum 25-(OH)D level of 75 nmol/L (i.e. 30 ng/mL), for the greatest impact on fracture.
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PT J
AU Gunardi, AJ
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AF Gunardi, A. J.
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TI Associations between measures of adiposity over 10 years and patella cartilage in population-based asymptomatic women
SO INTERNATIONAL JOURNAL OF OBESITY
LA English
DT Article
DE body mass index; adiposity; patella; magnetic resonance imaging
ID knee cartilage; geelong-osteoporosis; radiographic osteoarthritis; body-composition; defects; adults; volume; healthy; cohort; prevalence
AB OBJECTIVE: Osteoarthritis (OA) most commonly affects the patellofemoral compartment of the knee, and is a major cause of pain and disability. Structural changes that evolve prior to the onset of symptoms can be visualised using magnetic resonance imaging (MRI). There is little known information about the role of adiposity on the early structural changes in the patella cartilage in younger, asymptomatic adult females. METHODS: One hundred and sixty asymptomatic women (20-49 years) participating in the Geelong Osteoporosis Study underwent knee MRI (2006-8). Weight and body mass index (BMI) were measured 10 years prior (1994-7, baseline) and at the time of MRI (current), with change over the period calculated (current-baseline). Relationships between measures of adiposity and patella cartilage volume and defects were examined. RESULTS: After adjustment for age and patella bone volume, there was a reduction of 13 ml (95% confidence interval (95% CI), -25.7, -0.55) in patella cartilage volume for every 1

unit increase in current BMI, and a reduction of 27 ml (95% CI - 52.6, - 1.5) per BMI unit increase over 10 years (P = 0.04 for both). No significant association was observed between baseline BMI and patella cartilage volume (P = 0.16). Increased baseline and current weight and BMI were associated with increased prevalence of patella cartilage defects (all P<0.001). CONCLUSIONS: Adiposity and weight gain during midlife are associated with detrimental structural change at the patella in young to middle-aged healthy non-osteoarthritic women. Maintaining a healthy weight and avoiding weight gain in younger asymptomatic women may be important in the prevention of patellofemoral OA.
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JI Int. J. Obes.
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TI Hip structural analysis: a comparison of DXA with CT in postmenopausal Japanese women
SO SPRINGERPLUS
LA English
DT Article
DE Hip structural analysis; CT-based finite-element method; Bone strength; QCT
ID proximal femur; fracture risk; diagnostic-criteria; femoral-neck; bone; strength; prediction; osteoporosis; geometry; osteoarthritis
AB Geometry of the proximal femur is one determinant of fracture risk, and can be analyzed by a simple method using dual-energy X-ray absorptiometry (DXA). The aim of the present study was to investigate the accuracy of hip structural analysis (HSA) using clinical data in postmenopausal Japanese women. A total of 184 postmenopausal women aged 51-88 years (mean, 70.5 +/- 8.7 years) who underwent artificial joint replacement surgery for osteoarthrosis of the hip or knee joint were included. Computed tomography (CT) data from preoperative assessment were utilized for analysis of proximal femoral geometry (CT-HSA) using QCTPro Software (Mindways Software Inc., Austin, TX) and compared with HSA results based on DXA (DXA-HSA). The results of femoral geometry were further compared with a CT-based finite-element method (CT/FEM). There was moderate to high correlation between DXA-HSA and CT-HSA ($r = 0.60$-0.90, $p<0.001$), except for the buckling ratio in the intertrochanteric region. Moreover, the correlation of HSA with CT/FEM was similar between DXA-HSA and CT-HSA. The present results suggest that the geometry of proximal femoral cross sections can be reasonably

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Z9 31
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PT J
AU Scanlan, SF
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AF Scanlan, Sean F.

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TI The relationship between peak knee extension at heel-strike of walking and the location of thickest femoral cartilage in ACL reconstructed and healthy contralateral knees
SO JOURNAL OF BIOMECHANICS
LA English
DT Article
DE ACL reconstruction; Knee kinematics; Osteoarthritis; Walking; Cartilage
ID cruciate ligament reconstruction; articular-cartilage; high prevalence; soccer players; gait mechanics; level walking; osteoarthritis; joint; kinematics; motion
AB Reports that knee cartilage health is sensitive to kinematic changes, combined with reports of extension loss following ACL reconstruction, underscores the importance of restoring ambulatory knee extension in the context of preventing premature osteoarthritis. The purpose of this study was to test the relationship between individual variations in peak knee extension at heel-strike of walking and the anterior-posterior location of thickest cartilage in the medial and lateral femoral condyles of healthy contralateral and ACL reconstructed knees. In vivo gait analysis and knee MR images were collected from 29 subjects approximately 2 years after unilateral ACL reconstruction. Knee extension was measured at heel-strike of walking and 3-D femoral cartilage thickness models were reconstructed from MR images. The ACL reconstructed knees had significantly reduced knee extension (-1.5 +/- 4.2 degrees) relative to the contralateral knees (-4.6 +/- 3.4 degrees) at heel-strike of walking but did not have side-to-side differences in the anterior-posterior location or magnitude of thickest medial and lateral femoral cartilage. The anterior-posterior location of the thickest medial femoral cartilage was correlated with knee extension at heel-strike in both the healthy contralateral ($R^2=0.356$, $p<0.001$) and reconstructed ($R^2=0.234$, $p=0.008$) knees. These results suggest that ACL reconstruction can impair terminal extension at periods of ambulatory loading known to be related to cartilage morphology in healthy joints. The fact that the femoral cartilage thickness distribution had not changed at 2 years post-op, even in the subset of subjects with extension loss, suggests that loads may be shifted to thinner cartilage regions, which could have important implications on long-term joint health. (C) 2013 Elsevier Ltd. All rights reserved.
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AU Wu, CL
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AF Wu, C-L
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Guilak, F.
TI Diet-induced obesity alters the differentiation potential of stem cells isolated from bone marrow, adipose tissue and infrapatellar fat pad: the effects of free fatty acids
SO INTERNATIONAL JOURNAL OF OBESITY
LA English
DT Article
DE ASC; Hoffa's fat pad; osteoarthritis; inflammation; chondrogenesis; adipokines
ID toll-like receptors; progenitor cells; chondrogenic differentiation; in-vivo; proliferation; osteoarthritis; osteoporosis; macrophages; mechanisms; disease
AB INTRODUCTION: Obesity is a major risk factor for several musculoskeletal conditions that are characterized by an imbalance of tissue remodeling. Adult stem cells are closely associated with the remodeling and potential repair of several mesodermally derived tissues such as fat, bone and cartilage. We hypothesized that obesity would alter the frequency, proliferation, multipotency and immunophenotype of adult stem cells from a variety of tissues. MATERIALS AND METHODS: Bone marrow-derived mesenchymal stem cells (MSCs), subcutaneous adipose-derived stem cells (sqASCs) and infrapatellar fat pad-derived stem cells (IFP cells) were isolated from lean and high-fat diet-induced obese mice, and their cellular properties were examined. To test the hypothesis that changes in stem cell properties were due to the increased systemic levels of free fatty acids (FFAs), we further investigated the effects of FFAs on lean stem cells in vitro. RESULTS: Obese mice showed a trend toward increased prevalence of MSCs and sqASCs in the

stromal tissues. While no significant differences in cell proliferation were observed in vitro, the differentiation potential of all types of stem cells was altered by obesity. MSCs from obese mice demonstrated decreased adipogenic, osteogenic and chondrogenic potential. Obese sqASCs and IFP cells showed increased adipogenic and osteogenic differentiation, but decreased chondrogenic ability. Obese MSCs also showed decreased CD105 and increased platelet-derived growth factor receptor alpha expression, consistent with decreased chondrogenic potential. FFA treatment of lean stem cells significantly altered their multipotency but did not completely recapitulate the properties of obese stem cells. CONCLUSIONS: These findings support the hypothesis that obesity alters the properties of adult stem cells in a manner that depends on the cell source. These effects may be regulated in part by increased levels of FFAs, but may involve other obesityassociated cytokines. These findings contribute to our understanding of mesenchymal tissue remodeling with obesity, as well as the development of autologous stem cell therapies for obese patients.
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AU Biver, E
Hardouin, P
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TI The "bone morphogenic proteins" pathways in bone and joint diseases: Translational perspectives from physiopathology to therapeutic targets
SO CYTOKINE & GROWTH FACTOR REVIEWS
LA English
DT Review
DE Bone morphogenic proteins; Signaling pathways; Osteoporosis; Fracture healing; Osteoarthritis
ID growth-factor-beta; stimulates osteoblast differentiation; fibrodysplasia ossificans progressiva; single nucleotide polymorphisms; human articular chondrocytes; mesenchymal stem-cells; ia receptor bmpria; formation in-vitro; osteogenic protein-1; signal-transduction
AB A large body of evidence supports an important role of bone morphogenic proteins (BMPs) pathways in skeletal development in the embryo. BMPs are also involved in skeletal homeostasis and diseases in the adult. They were first identified as major bone anabolic agents and recent advances indicate that they also regulate osteoclastogenesis and joint components via multiple cross-talks with other signaling pathways. This review attempts to integrate these data in the pathogenesis of bone and joints diseases, such as osteoporosis, fracture healing, osteoarthritis, inflammatory arthritis, or bone metastasis. The use of recombinant BMPs in bone tissue engineering and in the treatment of skeletal diseases, or future therapeutic strategies targeting BMPs signal and its regulators, will be discussed based on these considerations. (C) 2012 Elsevier Ltd. All rights reserved.
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TI Nicotine-induced retardation of chondrogenesis through down-regulation of IGF-1 signaling pathway to inhibit matrix synthesis of growth plate chondrocytes in fetal rats
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ID pituitary-adrenal axis; cigarette-smoking; factor-i; prenatal overexposure; binding proteins; maternal smoking; skeletal growth; over-exposure; bone; dexamethasone
AB Previous studies have confirmed that maternal tobacco smoking causes intrauterine growth retardation (IUGR) and skeletal growth retardation. Among a multitude of chemicals associated with cigarette smoking, nicotine is one of the leading candidates for causing low birth weights. However, the possible mechanism of delayed chondrogenesis by prenatal nicotine exposure remains unclear. We investigated the effects of nicotine on fetal growth plate chondrocytes in vivo and in vitro. Rats were given 2.0 mg/kg . d of nicotine subcutaneously from gestational days 11 to 20. Prenatal nicotine exposure increased the levels of fetal blood corticosterone and resulted in fetal skeletal growth retardation. Moreover, nicotine exposure induced the inhibition of matrix synthesis and down-regulation of insulin-like growth factor 1 (IGF-1) signaling in fetal growth plates. The effects of nicotine on growth plates were studied in vitro by exposing fetal growth plate chondrocytes to 0, 1, 10, or 100 mu M of nicotine for 10 days. Nicotine inhibited matrix synthesis and down-regulated IGF-1 signaling in chondrocytes in a concentration-dependent manner. These results suggest that prenatal nicotine exposure induces delayed chondrogenesis and that the mechanism may involve the down-regulation of IGF-1 signaling and the inhibition of matrix synthesis by growth plate chondrocytes. The present study aids in the characterization of delayed chondrogenesis caused by prenatal nicotine exposure, which might suggest a candidate mechanism for intrauterine origins of osteoporosis and osteoarthritis. (C) 2013 Elsevier Inc. All rights reserved.
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PT J
AU Capuani, S
Piccirilli, E
Di Pietro, G
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Tarantino, U
AF Capuani, Silvia
Piccirilli, Eleonora
Di Pietro, Giulia
Celi, Monica
Tarantino, Umberto
TI Microstructural differences between osteoporotic and osteoarthritic femoral cancellous bone: an in vitro magnetic resonance micro-imaging investigation
SO AGING CLINICAL AND EXPERIMENTAL RESEARCH
LA English
DT Article
DE NMR; T-2; Osteoporosis; Osteoarthritis; Femur; Micro-imaging
ID diffusion; architecture
AB Recently has been highlighted that topological properties of trabecular microstructure and microarchitectural deterioration of bone tissue are important factors in determining bone strength and its resistance to fracture. Magnetic resonance (MR) techniques allow investigation of both trabecular networks and bone marrow providing precious information on the physiological and functional changes associated with osteoporosis. The aim of the present work was to show the ability of MR micro-imaging investigation to describe cancellous bone status as related to its trabecular bone density and quality. For this purpose we measured in vitro, at high magnetic field (9.4T), the MR parameter T-2(APP) of cancellous bone samples extracted from femoral head of osteoporotic and osteoarthritic women as classified by dual energy X ray absorptiometry bone mineral density. We assessed T-2(APP) associations with T-scores, Harris Hip score and age. Results show that T-2(APP) is able to discriminate between osteoarthritic and osteoporotic bone samples. Moreover, the micro-imaging T-2(APP) investigation has highlighted a different trabecular bone density in cancellous bone specimens of osteoarthritic patients only, which is higher in subchondral compared to metaphysis section of

each sample.
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Manenti G, 2013, BONE, V55, P7, DOI 10.1016/j.bone.2013.03.004
Tarantino U, 2012, ARCH OSTEOPOROS, V7, P0
NR 13
TC 10
Z9 10
U1 0
U2 12
PU SPRINGER
PI NEW YORK
PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
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WC Geriatrics & Gerontology
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PT J
AU Di Pietro, M
Schiavoni, G
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TI Chlamydia pneumoniae and osteoporosis-associated bone loss: a new risk factor?
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE C. pneumoniae; Osteoporosis; sRANKL/OPG; IL-6; IL-1; TNF-alpha
ID atherosclerosis; infection; pathogens; cytokines; cells
AB We found an association between the presence of Chlamydia pneumoniae DNA both in osteoporotic bone tissue and peripheral blood mononuclear cells (PBMCs) and the increase in circulating resorptive cytokines. Our study was designed to determine whether C. pneumoniae infection may be involved in osteoporosis-associated bone loss. The study included 59 women undergoing hip joint replacement surgery for femoral neck fracture: 32 with osteoporosis and 27 with osteoarthritis. A total of 118 tissue specimens (59 bone tissues, 59 PBMCs) were examined for C. pneumoniae DNA by real-time polymerase chain reaction

(PCR). Serum levels of soluble receptor activator of nuclear factor kappa B ligand (sRANKL), osteoprotegerin (OPG), interleukin (IL)-1 beta, tumor necrosis factor-alpha, and IL-6 were also measured. C. pneumoniae DNA was detected in osteoporotic bone tissue whereas it was not found in non-osteoporotic bone tissue ($p < 0.05$). A significantly higher rate of C. pneumoniae DNA ($p < 0.05$) was found in PBMCs of osteoporotic patients than in those of osteoarthritis patients. Among osteoporotic patients, serum sRANKL, IL-1, and IL-6 concentrations as well as sRANKL/OPG ratio significantly differ between patients with bone tissue and PBMCs positive to C. pneumoniae and C. pneumoniae-negative patients. The association between the presence of C. pneumoniae DNA, both in bone tissue and PBMCs, and the increase in sRANKL/OPG ratio as well as in IL-1 beta and IL-6 levels observed in osteoporotic patients suggests C. pneumoniae infection as a new risk factor for osteoporosis.
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NR 24
TC 20
Z9 20
U1 0
U2 3
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J

AU Nishii, T
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AF Nishii, Takashi
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TI Alendronate treatment for hip osteoarthritis: prospective randomized 2-year trial
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Alendronate; Hip osteoarthritis; Randomized controlled trial; Structure-modifying effects; Symptom-modifying effects
ID knee osteoarthritis; biochemical markers; cartilage degradation; bone; risedronate; progression; arthritis; symptoms; pain; associations
AB We examined the clinical efficacy of alendronate treatment for hip osteoarthritis using multiple outcome measures. Fifty patients with symptomatic hip osteoarthritis were enrolled in this prospective trial. The patients were randomly assigned to an alendronate group (35 mg/week alendronate and 600 mg/day calcium lactate) or a control group (600 mg/day calcium lactate) for 2 years. The groups were compared with regard to the following five parameters. The primary outcome measures are the following: (1) the Western Ontario and McMaster Universities (WOMAC) osteoarthritis pain score and the visual analog score (VAS). The secondary outcome measures are the following: (2) joint space width (JSW) measured on radiographs using a semiautomatic computer software, (3) the biochemical markers urinary N-telopeptide of type I collagen (NTX-I) and C-terminal cross-linking telopeptide of type II collagen (CTX-II), (4) dual-energy X-ray absorptiometry of the hip and lumbar spine, and (5) bone marrow edema on magnetic resonance images. The alendronate group showed pain improvement trends in VAS and WOMAC scores, whereas the control group showed worsening of pain. The alendronate group showed significant improvement in WOMAC pain scores after 12 months ($p = 0.031$) but no significant prevention of structural osteoarthritis progression, defined as a decrease in JSW > 0.30 mm or conversion to total hip arthroplasty. There was significantly larger decrease in the biochemical markers and significantly increased bone density in the alendronate group. Alendronate treatment by standard dose for osteoporosis showed clinical efficacy for decreasing pain but failed to show preventive effects for structural progression of hip osteoarthritis.
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FU Osaka Foundation for the Prevention of Cancer and Cardiovascular Disease; Ministry of Education, Science and Culture of Japan; Grants-in-Aid for Scientific Research [25293322] Funding Source: KAKEN
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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WC Rheumatology
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PT J
AU Zupan, J
Jeras, M
Marc, J
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Jeras, Matjaz
Marc, Janja
TI Osteoimmunology and the influence of pro-inflammatory cytokines on osteoclasts

SO BIOCHEMIA MEDICA
LA English
DT Review
DE osteoimmunology; cytokines; osteoclasts; RANKL; osteoporosis
ID tumor-necrosis-factor; nf-kappa-b; collagen-induced arthritis; nitric-oxide synthase; bone-mineral-density; growth-factor-beta; t-cell production; loss in-vivo; receptor activator; interferon-gamma
AB Bone and immune system are functionally interconnected. Immune and bone cells derive from same progenitors in the bone marrow, they share a common microenvironment and are being influenced by similar mediators. The evidence on increased bone resorption associated with inappropriate activation of T cells such as during inflammation, is well established. However, the molecular mechanisms beyond this clinical observation have begun to be intensively studied with the advancement of osteoimmunology. Now days, we have firm evidence on the influence of numerous proinflammatory cytokines on bone cells, with the majority of data focused on osteoclasts, the bone resorbing cells. It has been shown that some proinflammatory cytokines could possess osteoclastogenic and/or anti-osteoclastogenic properties and can target osteoclasts directly or via receptor activator of nuclear factor kappa B (RANK)/RANK ligand(RANKL)/osteoprotegerin (OPG) system. Several studies have reported opposing data regarding (anti) osteoclastogenic properties of these cytokines. Therefore, the first part of this review is summarizing current evidence on the influence of pro-inflammatory cytokines on osteoclasts and thus on bone resorption. In the second part, the evidence on the role of pro-inflammatory cytokines in osteoporosis and osteoarthritis is reviewed to show that unravelling the mechanisms beyond such complex bone diseases, is almost impossible without considering skeletal and immune systems as an indivisible integrated system.
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AU Bonnick, SL
AF Bonnick, Sydney L.
TI Dual-energy X-Ray Absorptiometry: Interpreting Reports and Serial Measurements
SO CLINICAL OBSTETRICS AND GYNECOLOGY
LA English
DT Article
DE DXA; dual-energy x-ray absorptiometry; precision; monitoring; least significant change; LSC; regions of interest; ROIs; standard scores
ID bone-density; osteoporosis; women; hip; osteoarthritis; risk; men
AB Physicians and other health care providers requesting dual-energy x-ray bone density studies must be able to critically review and interpret such studies. This requires an understanding of the computerized result components of the studies and how such data can be applied in clinical practice. The timing and interpretation of serial bone density studies is governed by the concepts of precision and least significant change. These statistical concepts are well within the purview of the practicing physician. Serial bone density studies cannot be interpreted without prior knowledge of the precision and least significant change of the test.
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TI Osteoporosis and shoulder osteoarthritis: incidence, risk factors, and surgical implications
SO JOURNAL OF SHOULDER AND ELBOW SURGERY
LA English
DT Article
DE Osteoporosis; Shoulder osteoarthritis; Risk factors; Shoulder CT scan; Hounsfield units; Implant size
ID bone-mineral density; primary implant stability; hip; women; knowledge; fracture; men; turnover; older
AB Background: Patients with osteoarthritis undergoing shoulder arthroplasty may suffer from osteoporosis. The purpose of this study was to determine whether computed tomography (CT)-derived Hounsfield unit (HU) measurements correlate with bone mineral density (BMD) and whether these data could predict implant size and fixation choice. Materials and methods: The study analyzed preoperative dual energy x-ray absorptiometry and shoulder CT scans for 230 patients who underwent total shoulder arthroplasty. Hip BMD and T scores and HU attenuation in the humerus were correlated. HU cutoff values were developed to aid in differentiating patients whose BMD values were within normal reference ranges from patients with osteopenia or osteoporosis. Risk factors associated with low BMD were correlated, and the effect of BMD on humeral stem size, and fixation method was investigated. Results: Significant correlations between HU and hip BMD and T score were identified ($P < .001$). HU value ranges were identified that may alert the surgeon of metabolic bone disease. Significant correlation ($P < 0.05$) was found between low BMD and certain osteoporosis risk factors. Age at time of surgery was a predictor of cemented stem fixation ($P = .024$). Patients with a lower BMD were statistically more likely to receive a larger-diameter humeral stem ($P = .016$). Conclusions: Orthopedic surgeons may be able to use data obtained from shoulder CT scans to predict the need for larger stem size or cement fixation during shoulder arthroplasty. In combination with the risk factor profile, these data may be useful in predicting the need for an osteoporosis workup and treatment. Level of evidence: Level III, Study of Nonconsecutive Patients, Diagnostic Study. (C) 2013 Journal of Shoulder and Elbow Surgery Board of Trustees.
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TI Leptin in Joint and Bone Diseases: New Insights
SO CURRENT MEDICINAL CHEMISTRY
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DE Cartilage; chondrocyte; bone; inflammation; leptin; rheumatic diseases; synovium
ID infrapatellar fat pad; sympathetic-nervous-system; diet-induced obesity; body-mass index; rheumatoid-arthritis; adipose-tissue; weight-loss; knee osteoarthritis; synovial-fluid; chondrocyte differentiation
AB Leptin is an adipokine with pleiotropic actions that regulates food intake, energy metabolism, inflammation and immunity, and also participates in the complex mechanism that regulates skeleton biology, both at bone and cartilage level. Leptin is increased in obesity and contributes to the "low-grade inflammatory state" of obese subjects causing a cluster of metabolic aberrations that affects joints and bone. In this review, we report the most recent research advances about the role of leptin in bone and cartilage function and its implication in inflammatory and degenerative joint diseases, such as osteoarthritis, rheumatoid arthritis and osteoporosis.
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Pancreatitis; Paradontosis ;Parkinson; Polycystic Ovary Disease; Rheumatoid Disease; Schizophrenia; Stress; Stroke; Uveitis
ID glycation end-products; induced bacterial translocation; blood-brain-barrier; nf-kappa-b; mechanical bowel preparation; randomized controlled-trial; early enteral nutrition; critically-ill patients; fermented oatmeal soup; vitamin-d levels
AB The microbiota of Westerners is significantly reduced in comparison to rural individuals living a similar lifestyle to our Paleolithic forefathers but also to that of other free-living primates such as the chimpanzee. The great majority of ingredients in the industrially produced foods consumed in the West are absorbed in the upper part of small intestine and thus of limited benefit to the microbiota. Lack of proper nutrition for microbiota is a major factor under-pinning dysfunctional microbiota, dysbiosis, chronically elevated inflammation, and the production and leakage of endotoxins through the various tissue barriers. Furthermore, the over-comsumption of insulinogenic foods and proteotoxins, such as advanced glycation and lipoxidation molecules, gluten and zein, and a reduced intake of fruit and vegetables, are key factors behind the commonly observed elevated inflammation and the endemic of obesity and chronic diseases, factors which are also likely to be detrimental to microbiota. As a consequence of this lifestyle and the associated eating habits, most barriers, including the gut, the airways, the skin, the oral cavity, the vagina, the placenta, the blood-brain barrier, etc., are increasingly permeable. Attempts to recondition these barriers through the use of so called 'probiotics', normally applied to the gut, are rarely successful, and sometimes fail, as they are usually applied as adjunctive treatments, e.g. in parallel with heavy pharmaceutical treatment, not rarely consisting in antibiotics and chemotherapy. It is increasingly observed that the majority of pharmaceutical drugs, even those believed to have minimal adverse effects, such as proton pump inhibitors and anti-hypertensives, in fact adversely affect immune development and functions and are most likely also deleterious to microbiota. Equally, it appears that probiotic treatment is not compatible with pharmacological treatments. Eco-biological treatments, with plant-derived substances, or phytochemicals, e.g. curcumin and resveratrol, and pre-, pro- and synbiotics offers similar effects as use of biologicals, although milder but also free from adverse effects. Such treatments should be tried as alternative therapies; mainly, to begin with, for disease prevention but also in early cases of chronic diseases. Pharmaceutical treatment has, thus far, failed to inhibit the tsunami of endemic diseases spreading around the world, and no new tools are in sight. Dramatic alterations, in direction of a paleolithic-like lifestyle and food habits, seem to be the only alternatives with the potential to control the present escalating crisis. The present review focuses on human studies, especially those of clinical relevance. (C) 2012 Elsevier Ltd. All rights reserved.
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PT J
AU Overman, RA
Borse, M
Gourlay, ML
AF Overman, Robert A.

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Gourlay, Margaret L.
TI Salmon Calcitonin Use and Associated Cancer Risk
SO ANNALS OF PHARMACOTHERAPY
LA English
DT Review
DE calcitonin; cancer; drug safety; fracture; osteoporosis; pharmacovigilance; salmon calcitonin
ID postmenopausal bone loss; established osteoporosis; controlled-trials; clinical-trials; oral calcitonin; dose-response; women; prevention; osteoarthritis; fractures
AB Objective: To evaluate the strength of evidence supporting a possible association between salmon calcitonin (SCT) use and cancer incidence. Data Sources: Searches of MEDLINE/PubMed, MEDLINE/OVID, and EMBASE (January 1973 to September 20 I 3) were performed using the key search terms salmon calcitonin, humans, nasal calcitonin, and (for EM BASE only) randomized controlled trial. We also performed a manual review of data reviewed by the US Food and Drug Administration (FDA) committee in 2013. Study Selection and Data Extraction: All articles identified from the data sources were evaluated and all information deemed relevant was included for this review. Data Synthesis: Intranasal and injectable SCT are FDA-approved for the treatment of postmenopausal osteoporosis. After a safety signal suggested a possible link between SCT use and prostate cancer, the European Medicines Agency and FDA regulatory agencies conducted analyses of SCT randomized controlled trial data to assess cancer-related adverse events and to readdress the approval status of SCT. Eighteen studies were found that compared nasal or oral SCT and placebo. In 15 of the 18 studies, the percentage of malignancy was greater in the SCT arm. The studies varied in quality, outcomes, and length. Most of the studies had poor-quality methods to assess new cancer cases. Conclusions: Current evidence may suggest an association between SCT use and cancer incidence based on studies with poor-quality cancer assessment methods. However, considering the lack of demonstrated efficacy of SCT to reduce fractures, clinicians should consider discontinuing its use for osteoporosis treatment regardless of the FDA's final approval decision.
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CR Andrews NA, 2013, IBMS BONEKEY, V10, P0

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Z9 72
U1 0
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PU SAGE PUBLICATIONS INC
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PT J
AU Morris, MJ
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AF Morris, Michael J.
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Berend, Keith R.
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TI Clinical Results of Patellofemoral Arthroplasty
SO JOURNAL OF ARTHROPLASTY
LA English
DT Article
DE knee arthroplasty; patellofemoral arthroplasty
ID total knee arthroplasty; arthritis; prosthesis; design
AB Isolated patellofemoral arthritis can be a disabling condition that can be challenging to treat. Patients with symptoms recalcitrant to conservative measures are considered for total or partial knee arthroplasty. This retrospective study reports the results of patellofemoral arthroplasty at a single center using a variety of implant designs. Thirty patients (37 knees) with isolated patellofemoral disease treated with patellofemoral arthroplasty with a minimum of one year follow-up were evaluated. The majority of patients were female (83%) and the underlying diagnosis was osteoarthritis in 98% of knees. Reported follow-up averaged 31 months. Average Knee Society Pain, Functional, and Clinical Scores improved from pre-op to most recent follow-up. Two complications (5.4%) required intervention. One patient was converted to a total knee arthroplasty secondary to patella instability. (C) 2013 Published by Elsevier Inc.
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AU Matuszewski, L
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AF Matuszewski, Lukasz
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TI Effect of implanted bisphosphonate-enriched cement on the trabecular microarchitecture of bone in a rat model using micro-computed tomography
SO INTERNATIONAL ORTHOPAEDICS
LA English
DT Article
ID in-vitro; pamidronate; fixation; histomorphometry; osteoarthritis; osteoporosis; osteoclasts; allograft; surface
AB Bisphosphonates (BPs) are antiresorptive drugs typically used to inhibit bone resorption. The latest reports show that BPs play an important role in not only achieving better bone mineral density but also in improving bone microarchitecture. The mechanism of action of the BPs is complex and multifactorial. We tried to determine whether there are any changes in the microarchitectural bone structure during local use of BP (Pamifos 60). The aim of this study was to see if BP-enriched cement used in rat models had positive effects on bone formation. Research was performed on 40 adult male Wistar rats that were divided into four groups: two control groups and two experimental groups. Rats in the experimental groups were implanted with BP-enriched cement into the bone, while the control group rats were implanted with clean bone cement (without BP). Micro-computed tomography was applied for the investigation of trabecular microarchitecture of the proximal physis of the tibial bone in all animals three and six weeks after surgery. In all microCT images variables such as bone volume

density (BV/TV), trabecular thickness (TbTh), trabecular separation (TbSp) and trabecular number (TbN) were used to describe trabecular bone morphometry. The major finding of this study is that using BP-enriched cement results in distinct changes in bone microarchitecture. We showed that local use of pamidronate (Pamifos 60) in orthopaedic cement had a positive effect on bone formation. It significantly changed three variables. We noticed increasing bone volume fraction and trabecular thickness together with decreasing trabecular separation. In this paper we demonstrate the efficacy of using BP-enriched cement in vitro in the tibiae of rats. Our most significant finding based on micro-CT picture analysis allows us to start further work on more suitable applications of BP-enriched cement in humans. We believe that future successful experiments will facilitate potential use of BP-enriched cement in clinical applications.

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TC 11
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PI NEW YORK
PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
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AU Wen, CY
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Lu, W. W.
Chiu, K. Y.
TI Bone loss at subchondral plate in knee osteoarthritis patients with hypertension and type 2 diabetes mellitus
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Subchondral plate; Microstructure; Hypertension; Type 2 diabetes mellitus
ID blood-pressure; risk-factors; osteoblasts; disease; cartilage; hip; osteoporosis; chondrocytes; association; progression
AB Objectives: This study aimed to characterize subchondral bone damages of knee osteoarthritis (OA) patients in presence of the comorbidities, i.e., hypertension and type 2 diabetes mellitus (T2DM). Methods: A total of 43 patients with advanced stage of primary knee OA were recruited, and tibial plateau specimens were collected during surgery with informed consent. The specimens were processed for

microCT and histological examination to assess the severity of subchondral bone damages. The presence of the comorbid disease, e.g., hypertension and T2DM, and the data on covariates, such as the age, gender and body mass index (BMI), were taken into account in a multi-variable linear regression model to explore the potential effect of the comorbidities on subchondral bone damages in knee OA after adjusting the covariates. Results: As compared to 15 subjects without the comorbidities, significant bone loss was observed at subchondral plate in 28 knee OA patients with hypertension and T2DM, in terms of the lower bone mineral density (BMD) (P = 0.034) and higher porosity (P = 0.032) on the medial portion of tibial plateau. After adjusting the age, gender and BMI, the presence of hypertension or T2DM was included in a regression model to explain in part the decreased BMD (r(2) = 0.551, P = 0.004) and increased porosity (r(2) = 0.545, P = 0.003) at subchondral plate in knee OA. Conclusion: Our findings suggest the biological link between bone loss at subchondral bone plate in knee OA and the comorbid diseases, i.e., hypertension and T2DM, which prompt the needs for a large-scale cohort study to confirm the causality. (C) 2013 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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PT J
AU Reginster, JY
Badurski, J
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AF Reginster, Jean-Yves
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Chapurlat, Roland
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TI EXTENDED REPORT Efficacy and safety of strontium ranelate in the treatment of knee osteoarthritis: results of a double-blind, randomised placebo-controlled trial
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID postmenopausal women; glucosamine sulfate; chondroitin sulfate; subchondral bone; progression; 2-year; osteoporosis; radiographs; promotes; sequence
AB Background Strontium ranelate is currently used for osteoporosis. The international, double-blind, randomised, placebo-controlled Strontium ranelate Efficacy in Knee OsteoarthrItis triAl evaluated its effect on radiological progression of knee osteoarthritis. Methods Patients with knee osteoarthritis (Kellgren and Lawrence grade 2 or 3, and joint space width (JSW) 2.5-5 mm) were randomly allocated to strontium ranelate 1 g/day (n = 558), 2 g/day (n = 566) or placebo (n = 559). The primary endpoint was radiographical change in JSW (medial tibiofemoral compartment) over 3 years versus placebo. Secondary endpoints included radiological progression, Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score, and knee pain. The trial is registered (ISRCTN41323372). Results The intention-to-treat population included 1371 patients. Treatment with strontium ranelate was associated with smaller degradations in JSW than placebo (1 g/day: -0.23 (SD 0.56) mm; 2 g/day: -0.27 (SD 0.63) mm; placebo: -0.37 (SD 0.59) mm); treatment-placebo differences were 0.14 (SE 0.04), 95% CI 0.05 to 0.23, $p < 0.001$ for 1 g/day and 0.10 (SE 0.04), 95% CI 0.02 to 0.19, $p = 0.018$ for 2 g/day. Fewer radiological progressors were observed with strontium ranelate ($p < 0.001$ and $p = 0.012$ for 1 and 2 g/day). There were greater reductions in total WOMAC score ($p = 0.045$), pain subscore ($p = 0.028$), physical function subscore ($p = 0.099$) and knee pain ($p = 0.065$) with strontium ranelate 2 g/day. Strontium ranelate was well tolerated. Conclusions Treatment with strontium ranelate 1 and 2 g/day is associated with a significant effect on structure in patients with knee osteoarthritis, and a beneficial effect on symptoms for strontium ranelate 2 g/day.
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PT J
AU Pelletier, JP
Kapoor, M
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AF Pelletier, Jean-Pierre
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Lajeunesse, Daniel
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TI Strontium ranelate reduces the progression of experimental dog osteoarthritis by inhibiting the expression of key proteases in cartilage and of IL-1β in the synovium
SO ANNALS OF THE RHEUMATIC DISEASES
LA English

DT Article
ID nitric-oxide synthase; subchondral bone; knee; recommendations; osteoporosis; osteoblasts; resorption; reduction; collagen
AB Objective To explore the disease-modifying effect, under therapeutic conditions, of strontium ranelate (SrRan) on the progression of joint structural changes and on the major pathophysiological pathways in an experimental osteoarthritis dog model. Methods Dogs underwent sectioning of the anterior cruciate ligament, and 4 weeks after surgery received oral treatment of SrRan 25, 50 or 75 mg/kg per day, or placebo for 12 weeks. Methods included macroscopy, picrosirius red staining, histology, subchondral bone histomorphometry, quantitative PCR, and ELISA for CTX-II level in serum. Strontium plasma and synovial fluid levels were also measured. Results At steady state, strontium blood exposures were within the clinical therapeutic range of osteoarthritis patients and correlated with strontium concentrations in synovial fluid. SrRan treatment significantly reduced the osteoarthritis cartilage lesions at all doses tested ($p <= 0.05$). Significantly better preservation of the collagen network was also found in SrRan-treated dogs at 50 and 75 mg/kg per day ($p=0.03$). The osteoarthritis subchondral bone thickening observed in osteoarthritis-placebo dogs was significantly reduced by SrRan at 50 mg/kg per day ($p=0.02$). The increased gene expression levels of MMP-1, MMP-13 and cathepsin K in osteoarthritis cartilage were all significantly reduced by SrRan at 75 mg/kg per day ($p <= 0.03$) as were, in osteoarthritis synovium, IL-1 beta at 50 and 75 mg/kg per day ($p=0.05$) and MMP-3 at all doses tested ($p <= 0.02$). The serum level of CTX-II was reduced ($p <= 0.04$) by SrRan at 16 weeks in dogs treated with 50 and 75 mg/kg per day. Conclusions This study is the first to demonstrate in vivo in an animal model that SrRan reduced the progression of osteoarthritis structural changes. The inhibition of several key proteases as well as IL-1 beta may have contributed to the beneficial effect of SrRan.
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CR Alexandersen P, 2011, CLIMACTERIC, V14, P236, DOI 10.3109/13697137.2010.507887
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PT J
AU Pit, SW
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Passey, M
AF Pit, S. W.
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TI Partial and complete retirement due to ill-health among mature age Australians
SO PUBLIC HEALTH
LA English
DT Article
DE Retirement; Middle aged; Chronic disease; Rural area
ID labor-force participation; gradual retirement; older workers; population; employment; impact; cancer; rates
AB Objectives: An ageing population requires governments to keep older people working longer and delay early retirement. This paper investigates the extent to

which common health problems and geographical location are associated with full and partial early retirement among mature-age Australians. Study design: Cross sectional. Methods: Multinomial logistic regression analysis of self-reported data of 21,719 women and 16,393 men from the 45 and Up Study. Outcome measure: retirement status. Results: Women who reported ever having been told by a doctor that they had a stroke, cancer (except melanoma and skin and breast cancer), osteoarthritis, depression, osteoporosis, thrombosis, or anxiety were more likely to be fully retired due to ill-health compared to those without these health problems. Those who reported ever having been told by a doctor that they had depression, breast cancer or osteoarthritis were more likely to be partially retired due to ill-health than those without these health problems. Men who reported ever having been told by a doctor that they had cancer, heart disease, anxiety or depression were more likely to be fully or partially retired due to ill-health than those without these health problems. Men who reported having had a stroke, diabetes, thyroid problems, osteoarthritis or osteoporosis were more likely to be fully retired due to ill-health compared to those without these health problems. Men and women living outside major cities were more likely to be fully retired due to ill-health. Men from outer regional areas were also more likely to be partially retired due to ill-health. Conclusions: To reduce early retirement due to ill-health, health practitioners, governments and employers should address targeted health problems, particularly in areas outside capital cities. (C) 2012 The Royal Society for Public Health. Published by Elsevier Ltd. All rights reserved.
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CR *AIHW, 2008, CANC SER AIHW, V46, P0
Unknown -, 2009, J OCCUPATIONAL ENV M, V51, P0
Unknown -, 2008, AUSTR WORKH PROGR, V0, P0
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AU Thawait, SK
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AF Thawait, Shrey K.
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TI A systematic approach to magnetic resonance imaging evaluation of epiphyseal lesions
SO MAGNETIC RESONANCE IMAGING
LA English
DT Article
DE Epiphyseal lesions; Subchondral insufficiency fracture; Osteochondral lesion; Transient osteoporosis; Giant cell tumor; Clear cell chondrosarcoma; Eosinophilic granuloma; Osteomyelitis; Avascular necrosis; Magnetic resonance imaging; Chemical shift imaging; Diffusion weighted imaging
ID clear-cell chondrosarcoma; radiologic-pathological correlation; subchondral insufficiency fracture; bone-marrow involvement; tumor-like conditions; femoral-head; chemical-shift; osteochondritis-dissecans; eosinophilic granuloma; avascular necrosis
AB Magnetic Resonance Imaging (MRI) is the preferred modality of choice to image epiphyseal lesions. It provides excellent soft tissue resolution and extent of disease. A wide spectrum of tumor and tumor like lesions can involve the epiphysis. Early and accurate diagnosis as well as appropriate management of epiphyseal lesions is critical as these conditions may lead to disabling complications such as, limb length discrepancy, angular or joint surface deformities and secondary osteoarthritis. In this article, we discuss the role of conventional sequences, such as T1W, fluid sensitive T2W and intravenous (IV) Gadolinium enhanced sequences as well as the additional value of problem solving MRI sequences such as, chemical shift and diffusion weighted imaging. Based on the imaging findings on various MRI sequences and lesion characteristics, a systematic approach directed to the diagnoses of epiphyseal lesions is presented and discussed. MRI features of clinically and biopsy proven examples of the epiphyseal lesions, such as osteomyelitis, intra-osseous abscess, infiltrative malignancy, metastases, transient osteoporosis, subchondral insufficiency fracture, avascular necrosis, osteochondral fracture, osteochondritis dissecans, eosinophilic granuloma and geode are demonstrated. Using this systematic approach, the reader will be able to better characterize epiphyseal lesions with a potential to positively affect patient management. (C) 2013 Elsevier Inc. All rights reserved.
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AU Hirano, K
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TI The influence of locomotive syndrome on health-related quality of life in a community-living population
SO MODERN RHEUMATOLOGY
LA English
DT Article
DE Locomotive syndrome; Lumbar spine; Musculoskeletal disease; Quality of life; Visual analogue scale
ID pain evaluation questionnaire; low-back-pain; postmenopausal women; vertebral fractures; european foundation; spinal mobility; natural-history; osteoarthritis; knee; osteoporosis
AB The Japanese Orthopaedic Association (JOA) has proposed the term "locomotive syndrome" (LS) to designate a condition in individuals with musculoskeletal disease in high-risk groups who are highly likely to require nursing care. The present study investigated the influence of LS on the quality of life (QOL)

of a community-living population. A total of 386 subjects a parts per thousand yen 50 years of age were enrolled in the study. Those whose scores on the 25-question Geriatric Locomotive Function Scale were a parts per thousand yen16 were defined as having LS. Participants answered the JOA Back Pain Evaluation Questionnaire (JOABPEQ) and visual analogue scales (VAS) for low back pain, leg pain, leg numbness, and left and right knee pain; the Roland Morris Disability Questionnaire (RDQ); and the Short Form 36 (SF-36). We compared the scores on the three QOL measures between subjects diagnosed with and without LS. There were 62 people defined as having LS. Subjects with LS scored significantly lower on the JOABPEQ and SF-36 than those without LS. They also had significantly higher scores on the five VASs and the RDQ compared with those without LS. We found that LS strongly impacted QOL and the scores from the VASs. LS appears to be a useful concept for screening subjects who are experiencing a lowered QOL due to musculoskeletal diseases, especially degenerative lumbar diseases and knee osteoarthritis.
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FU Japanese Ministry of Health, Labor, and Welfare [15390455, 20390397]; Japan Orthopaedics and Traumatology Foundation, Inc. [244]; Grants-in-Aid for Scientific Research [15390455, 20390397] Funding Source: KAKEN
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PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
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AU Ficai, A
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TI Collagen hydrolysate based collagen/hydroxyapatite composite materials
SO JOURNAL OF MOLECULAR STRUCTURE
LA English
DT Article
DE pH influence; Collagen hydrolysate; Scaffold; Bone grafts; Composite material
ID in-vitro; hydroxyapatite; bone; scaffolds; nanocomposites; stimulation; temperature; gelatin; ph
AB The aim of this study was to study the influence of collagen hydrolysate (HAS) on the formation of ternary collagen-hydrolysate/hydroxyapatite composite materials (COLL-HAS/HA). During the precipitation process of HA, a large amount of brushite is resulted at pH = 7 but, practically pure HA is obtained at pH >= 8. The FTIR data reveal the duplication of the most important collagen absorption bands due to the presence of the collagen hydrolysate. The presence of collagen hydrolysate is beneficial for the management of bone and joint disorders such as osteoarthritis and osteoporosis. (C) 2012 Elsevier B.V. All rights reserved.
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J9 J MOL STRUCT
JI J. Mol. Struct.
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WC Chemistry, Physical
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PT J
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TI Impact of pH on the Stability and the Cross-Reactivity of Ochratoxin A and Citrinin
SO TOXINS
LA English
DT Article
DE mycotoxin; ochratoxin; citrinin; analysis; immunoaffinity; wheat; wine
ID immunoaffinity column cleanup; liquid-chromatography; simultaneous extraction; mycotoxin production; cereals; cooccurrence; rice; food; wine;

aflatoxin-b1
AB Mycotoxins are secondary metabolites produced by several fungi contaminating crops. In several countries, the maximum permitted levels of mycotoxins are found in foodstuffs and feedstuffs. The common strategy of mycotoxin analysis involves extraction, clean-up and quantification by chromatography. In this paper, we analyzed the reasons of underestimation of ochratoxin A (OTA) content in wine, and overestimation of OTA in wheat, depending on the pH of the clean-up step and the simultaneous presence of citrinin (CIT). We demonstrated that the increase of pH by adding polyethylene glycol (PEG) to wine led to an underestimation of OTA by conversion of OTA into open ring ochratoxin A OP-OA. In comparing three methods of extraction and clean-up for the determination of OTA and CIT in wheat(i) an inter-laboratory validated method for OTA in cereals using immunoaffinity column clean-up (IAC) and extraction by acetonitrile/water; (ii) a validated method using IAC and extraction with 1% bicarbonate Na; and (iii) an in-house validated method based on acid liquid/liquid extractionwe observed an overestimation of OTA after immunoaffinity clean-up when CIT is also present in the sample, whereas an underestimation was observed when OTA was alone. Under neutral and alkaline conditions, CIT was partially recognized by OTA antibodies.
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NR 57
TC 42
Z9 48
U1 2
U2 53
PU MDPI
PI BASEL
PA ST ALBAN-ANLAGE 66, CH-4052 BASEL, SWITZERLAND
SN
EI 2072-6651
J9 TOXINS
JI Toxins

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BP 2324
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DI 10.3390/toxins5122324
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WC Food Science & Technology; Toxicology
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TI Aging, obesity, and multimorbidity in women 50 years or older: a population-based study
SO MENOPAUSE-THE JOURNAL OF THE NORTH AMERICAN MENOPAUSE SOCIETY
LA English
DT Article
DE Multimorbidity; Women; Obesity; Aging
ID chronic diseases; health-care; self-report; prevalence; disability; agreement; education; patterns; impact
AB Objective: This study aims to evaluate multimorbidity and its associated factors in Brazilian women aged 50 years or older. Methods: This is a cross-sectional, population-based study using self-reports. A total of 622 women aged 50 years or older were included. Multimorbidity was defined as two or more of the following morbidities: hypertension, osteoarthritis, cataracts, diabetes mellitus, osteoporosis, glaucoma, chronic bronchitis or asthma, urinary incontinence, cancer, myocardial infarction, stroke, and pulmonary emphysema. Sociodemographic, clinical, and

behavioral factors were evaluated. Data were analyzed using chi(2) test and Fisher's exact test, and Poisson multiple regression analysis was performed. Prevalence ratios and their 95% CIs were calculated. Results: In this sample, 15.8% of participants reported no morbidities, whereas 26% reported having one morbid condition and 58.2% reported multimorbidity. With respect to morbidities, 55.9% of women reported having hypertension, 33.8% reported having osteoarthritis, 24.5% reported having cataracts, 22.7% reported having diabetes, 21.3% reported having osteoporosis, 9.9% reported having glaucoma, 9.2% reported having bronchitis, 8.9% reported having urinary incontinence, and 6.8% reported having cancer, whereas 4.8% reported having had a myocardial infarction, 2.7% reported having had a stroke, and 1.8% reported having pulmonary emphysema. Multiple regression analysis showed that for each additional year of life, women increased their likelihood of multimorbidity by 3% (95% CI, 1.02-1.04). Furthermore, for each point increase (kg/m(2)) in their body mass index, women also increased their likelihood of multimorbidity by 3% (95% CI, 1.02-1.04). Conclusions: Multimorbidity is principally associated with aging and obesity.
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NR 46
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U1 0
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PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
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J9 MENOPAUSE
JI Menopause-J. N. Am. Menopause Soc.
PD AUG 15
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WC Obstetrics & Gynecology
SC Obstetrics & Gynecology
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PT J
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TI Risk factors for falls in a longitudinal population-based cohort study of Japanese men and women: The ROAD Study
SO BONE
LA English
DT Article
DE Falls; Longitudinal study; Pain; Osteoarthritis; Physical performance
ID dwelling elderly-people; osteoporotic fractures; physical performance; back-pain; knee osteoarthritis; vertebral fractures; lumbar spondylosis; muscle strength; association; balance
AB The objective of this study was to clarify the associations of physical performance and bone and joint diseases with single and multiple falls in Japanese men and women using a population-based longitudinal cohort study known as Research on Osteoarthritis/osteoporosis Against Disability (ROAD). A total of 452 men and 896 women were analyzed in the present study (mean age, 63.9 years). A questionnaire was used to assess the number of falls during the 3-year follow-up. Grip strength, 6-m walking time, and chair stand time were measured at baseline. Knee osteoarthritis (OA) and lumbar spondylosis were defined as Kellgren Lawrence = 2, 3 or 4. Vertebral fracture (VFx) was assessed with the Japanese Society of Bone and Mineral Research criteria. Osteoporosis was defined by bone mineral density using dual energy X-ray absorptiometry based on World Health Organization criteria. Knee and lower back pain were estimated by an interview. During a 3-year follow-up, 79 (17.4%) men and 216 (24.1%) women reported at least one fall, and 54(11.9%) men and 111 (12.4%) women reported multiple falls. Knee pain was a risk factor for multiple falls in women, but not in men. VFx tended to be associated with multiple falls in women, but not in men. A longer 6-m walking time was a risk factor for multiple falls in women, whereas a longer chair stand time was a risk factor for multiple falls in men. We found gender differences in risk factors for falls. (C) 2012 Elsevier Inc. All rights reserved.
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NR 48
TC 46
Z9 52
U1 0
U2 12
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA
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EI
J9 BONE
JI Bone
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PT J
AU Kanawa, M
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AF Kanawa, Masami
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Pan, Haiou
Kato, Yukio
TI Age-dependent decrease in the chondrogenic potential of human bone marrow mesenchymal stromal cells expanded with fibroblast growth factor-2
SO CYTOTHERAPY
LA English
DT Article
DE aging; bone marrow; chondrocytes; differentiation; mesenchymal stromal cells
ID stem-cells; donor variation; differentiation; osteoarthritis; osteoporosis; cultures; consequences; progenitors; expansion; number
AB Background aims. Human bone marrow mesenchymal stromal cells are useful in regenerative medicine for various diseases, but it remains unclear whether the aging of donors alters the multipotency of these cells. In this study, we examined age-related changes in the chondrogenic, osteogenic and adipogenic potential of mesenchymal stromal cells from 17 donors (25-81 years old), including patients with or without systemic vascular diseases. Methods. All stem cell lines were

expanded with fibroblast growth factor-2 and then exposed to differentiation induction media. The chondrogenic potential was determined from the glycosaminoglycan content and the SOX9, collagen type 2 alpha 1 (COL2A1) and aggrecan (AGG) messenger RNA levels. The osteogenic potential was determined by monitoring the alkaline phosphatase activity and calcium content, and the adipogenic potential was determined from the glycerol-3-phosphate dehydrogenase activity and oil red 0 staining. Results. Systemic vascular diseases, including arteriosclerosis obliterans and Buerger disease, did not significantly affect the trilineage differentiation potential of the cells. Under these conditions, all chondrocyte markers examined, including the SOX9 messenger RNA level, showed age-related decline, whereas none of the osteoblast or adipocyte markers showed age-dependent changes. Conclusions. The aging of donors from young adult to elderly selectively decreased the chondrogenic potential of mesenchymal stromal cells. This information will be useful in stromal cell based therapy for cartilage-related diseases.
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FU Ministry of Education, Science and Culture of Japan; RIKEN National BioResource Project; Grants-in-Aid for Scientific Research [25670762, 23390423] Funding Source: KAKEN
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NR 37
TC 48
Z9 53
U1 0
U2 14
PU INFORMA HEALTHCARE
PI LONDON
PA TELEPHONE HOUSE, 69-77 PAUL STREET, LONDON EC2A 4LQ, ENGLAND
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EI
J9 CYTOTHERAPY
JI Cytotherapy
PD SEP 15
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IS 9
BP 1062
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PG 11
WC Cell & Tissue Engineering; Biotechnology & Applied Microbiology; Cell Biology; Hematology; Medicine, Research & Experimental
SC Cell Biology; Biotechnology & Applied Microbiology; Hematology; Research & Experimental Medicine
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UT WOS:000323141300004
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AU Moon, SJ
Hong, YS
Ju, JH
Kwok, SK
Park, SH
Min, JK
AF Moon, Su-Jin
Hong, Yeon-Sik
Ju, Ji Hyeon

Kwok, Seung-Ki
Park, Sung-Hwan
Min, Jun-Ki
TI Increased Levels of Interleukin 34 in Serum and Synovial Fluid Are Associated with Rheumatoid Factor and Anticyclic Citrullinated Peptide Antibody Titers in Patients with Rheumatoid Arthritis
SO JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE INTERLEUKIN 34; RHEUMATOID ARTHRITIS; RHEUMATOID FACTOR; ANTICYCLIC CITRULLINATED ANTIBODIES; OSTEOPOROSIS
ID osteopetrotic op/op mice; disease-activity; t-cells; joint destruction; langerhans cells; bone loss; osteoclastogenesis; criteria; rankl; classification
AB Objective. Interleukin 34 (IL-34) is a recently discovered cytokine that binds macrophage colony-stimulating factor (M-CSF) receptor. Rheumatoid arthritis (RA) is characterized by increased osteoclastogenesis. To identify the significance of IL-34 in RA, the IL-34 concentration was measured in serum and synovial fluid (SF). Methods. IL-34 concentrations were measured in serum from patients with RA (n = 113), patients with osteoarthritis (OA; n = 56), and controls (n = 36), and in SF isolated from patients with RA (n = 36) or OA (n = 24). Correlations between serum IL-34 levels and clinical features in RA were assessed. The levels of IL-1 beta, IL-6, IL-17 alpha, interferon-gamma-induced protein 10, receptor activator of nuclear factor kappa B ligand (RANKL), and Dickkopf-1 were also measured. Results. Patients with RA had a higher mean serum level of IL-34 than did patients with OA and controls (188.0 +/- 550.3, 36.6 +/- 38.0, and 49.1 +/- 78.5 pg/ml, respectively). Similarly, SF IL-34 concentration was higher in patients with RA than in those with OA. IL-34 levels were positively associated with IL-6 levels in serum from patients with RA and OA. SF IL-34 concentration correlated significantly with IL-6 and RANKL levels only in RA. The serum level of IL-34 was not correlated with systemic osteoporosis and radiographic joint damage in RA. IL-34 levels in the serum from patients with RA were positively correlated with rheumatoid factor and anticyclic citrullinated peptide antibody titers (r = 0.282 and 0.491, respectively). Conclusion. Circulating IL-34 levels in RA correlated with autoantibody production. Further investigations of localized and systemic effects of IL-34 are warranted to elucidate RA pathogenesis.
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J9 J RHEUMATOL
JI J. Rheumatol.
PD NOV 15
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WC Rheumatology
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PT J
AU Zholdoshova, A
Yalçin, P
AF Zholdoshova, Aigul
Yalcin, Peyman
TI The Relationship between Osteoarthritis and Osteoporosis in Patients with Primary Generalized Osteoarthritis
SO TURKISH JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE Bone mineral density; osteoarthritis; osteoporosis
ID bone-mineral density; radiographic knee osteoarthritis; postmenopausal women; osteo-arthritis; iliac crest; elderly men; hip; hand; fracture; femur
AB Objectives: This study aims to examine the relationship between primary generalized osteoarthritis (OA) and bone mineral density (BMD) and to investigate whether OA patients have a higher BMD value than healthy individuals. Patients and methods: The study population consisted of 80 postmenopausal female

patients (mean age 58.95 +/- 4.63 years) who suffered from hand OA with Heberden's nodes, while the control group consisted of 80 postmenopausal female patients (mean age 57.62 +/- 5.39) without symptomatic OA and Heberden's nodes. The patients were age-matched. Blood biochemistry, thyroid function tests and bone turnover markers (serum calcium, phosphorus, alkaline phosphatase, osteocalcin, and urine deoxypyridinoline) and 25-hydroxyvitamin D3 [25(OH)D3] levels of the participants were measured. A comparison was made between the two groups with regard to BMD levels, lateral thoracolumbar X-rays, and anteroposterior radiographs of the pelvis, knees, and hands. The evaluation of the radiographs was based on the Kellgren-Lawrence scale. The lumbar and femoral BMD levels in both groups were measured in g/cm(2) with dual-energy X-ray absorptiometry. Results: The 25(OH)D3 value of the OA group was significantly higher than the control group, indicating a statistically significant difference. The lumbar spine BMD levels were statistically higher in the control group compared with the OA group, however, there were no significant differences in the hip BMD values and lumbar spine T scores between the groups. Conclusion: Our study results suggest that primary generalized OA is not protective against osteoporosis.
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NR 38
TC 1
Z9 3
U1 0
U2 13
PU TURKISH LEAGUE AGAINST RHEUMATISM
PI ANKARA
PA TALATPASA BULVARI DUMLUPINAR CAD 40 3 CEBECI DORTYOL, ANKARA, 06100, TURKEY
SN 1309-0291
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J9 TURK J RHEUMATOL
JI Turk. J. Rheumatol.
PD SEP 15
PY 2013
VL 28
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BP 163

EP 172
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WC Rheumatology
SC Rheumatology
GA 233VA
UT WOS:000325596400003
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PT J
AU Fujita, T
Ohue, M
Fujii, Y
Jotoku, T
Miyauchi, A
Takagi, Y
Tsuchiya, M
Endo, Y
AF Fujita, Takuo
Ohue, Mutsumi
Fujii, Yoshio
Jotoku, Tsuyoshi
Miyauchi, Akimitsu
Takagi, Yasuyuki
Tsuchiya, Masahiro
Endo, Yasuo
TI Prompt Analgesic Effect of Antihistaminic Diphenhydramine Ointment on Bone-Joint-Muscle Pain as Assessed by Skin Impedance
SO PHARMACOLOGY
LA English
DT Article
DE Pain; Analgesic; Skin impedance; Diphenhydramine; Indomethacin; Histamine
ID cell-adhesion molecule-1; nerve-mast cell; histidine-decarboxylase; calcium paradox; bisphosphonates etidronate; double-blind; histamine; mice; interleukin-1; disease
AB Pain is sensed, transmitted, and modified via a variety of mediators and their receptors. Histamine is a well-known mediator of pain. In addition to their antagonistic effects against histamine, classical antihistaminics possess, to various degrees, antimuscarinergic, antiserotonergic, antiadrenergic, local anesthetic, membrane-stabilizing and other pharmacologic actions. Although there have been many attempts to use classical antihistaminics as analgesics and/or analgesic adjuvants, the appearance of non-steroidal anti-inflammatory drugs discouraged such efforts. Here, we compared the analgesic effect of an ointment containing 1%

diphenhydramine (a typical first-generation antihistaminic drug) with that of indomethacin (a typical non-steroidal anti-inflammatory drug) in elderly patients with osteoarthritis and/or osteoporosis who complained of bone-joint-muscle pain. Analgesic effects were evaluated by measuring skin impedance and by subjective pain assessments (using a visual recording system) before and after ointment application. Diphenhydramine ointment exerted a prompt and marked analgesic effect that lasted for several hours, as assessed by either skin impedance or subjective pain evaluation. In contrast, the analgesic effect of indomethacin ointment was marginal, and significant only an hour or more later than that of diphenhydramine. These results suggest that diphenhydramine ointment may be useful for the relief of the bone-joint-muscle pains that are common in elderly subjects. Copyright (C) 2013 S. Karger AG, Basel
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TI Lumbar Disc Degeneration in Osteoporotic Men: Prevalence and Assessment of the Relation with Presence of Vertebral Fracture
SO JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE FRACTURE; MALE; OSTEOPOROSIS; OSTEOARTHRITIS; PREVALENCE; SPINE
ID bone-mineral density; low-back-pain; radiographic osteoarthritis; postmenopausal women; spine; epidemiology; population; progression; hip; association
AB Objective. The relationship between osteoarthritis (OA) and osteoporosis (OP) remains controversial. An inverse relationship between spine OA and the presence of prevalent vertebral fractures has been shown in osteoporotic women. Our objective was to assess this relationship in osteoporotic men. Methods. All the patients had OP based on densitometric data and were aged >= 65 years. Spine

radiographs were performed according to a standardized procedure. Vertebral fractures were assessed from T4 to L4 by a semiquantitative method. Disc degenerative changes were assessed by the presence and severity of osteophytes and disc narrowing at levels T12-L1 to L5-S1. Logistic regression was used to study the relationship between the presence of vertebral fracture and lumbar disc degeneration. Results. The study included 261 osteoporotic men. The prevalence of vertebral fractures was 26.4% (69/261). At least 1 osteophyte was found in 91.6% (239/261) of patients, and at least 1 disc space narrowing in 63.5% (165/260). The prevalence of at least 1 osteophyte and/or at least 1 disc space narrowing was similar in patients with and those without vertebral fracture. No relationship was found between the presence and/or the severity of osteophytes and disc narrowings and the presence of prevalent vertebral radiographic fractures. Conclusion. In osteoporotic men, the prevalence of lumbar spine degeneration is high. There is no relationship between lumbar disc degeneration and the presence of vertebral fracture in osteoporotic men.
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TI Differences in osteogenic and apoptotic genes between osteoporotic and osteoarthritic patients
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
DE Human bone; Osteoporosis; Osteogenesis; Apoptosis; Microstructural
ID primary hip osteoarthritis; osteoblast differentiation; trabecular bone; cell-death; expression; disease; ligand; deficiency; increases; osterix
AB Background: Osteoporosis is a metabolic disorder characterized by a reduction in bone mass and deterioration in the microarchitectural structure of the bone, leading to a higher risk for spontaneous and fragility fractures. The main aim was to study the differences between human bone from osteoporotic and osteoarthritic patients about gene expression (osteogenesis and apoptosis), bone mineral density, microstructural and biomechanic parameters. Methods: We analyzed data from 12 subjects: 6 with osteoporotic hip fracture (OP) and 6 with hip osteoarthritis (OA), as the control group. All subjects underwent medical history, analytical determinations, densitometry, histomorphometric and biochemical study. The expression of 86 genes of osteogenesis and 86 genes of apoptosis was studied in pool of bone samples from patients with OP and OA by PCR array. Results: We observed that most of the genes of apoptosis and osteogenesis show a decrease in gene expression in the osteoporotic group in comparison with the osteoarthritic group. The histomorphometric study shows a lower bone quality in the group of patients with hip fractures compared to the osteoarthritic group. Conclusions: The bone tissue of osteoporotic fracture patients is more fragile than the bone of OA patients. Our results showed an osteoporotic bone with a lower capacities for differentiation and osteoblastic activity as well as a lower rate of apoptosis than osteoarthritic bone. These results are related with structural and biochemical parameters.
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TI Effects of Cysteine Proteases on the Structural and Mechanical Properties of Collagen Fibers
SO JOURNAL OF BIOLOGICAL CHEMISTRY
LA English
DT Article
ID rat tail tendon; atomic-force microscopy; i collagen; cathepsin-k; decorin; glycosaminoglycans; fibrils; complex; proteoglycan; organization
AB Excessive cathepsin K (catK)-mediated turnover of fibrillar type I and II collagens in bone and cartilage leads to osteoporosis and osteoarthritis. However, little is known about how catK degrades compact collagen macromolecules. The present study is aimed to explore the structural and mechanical consequences of collagen fiber degradation by catK. Mouse tail type I collagen fibers were incubated with either catK or non-collagenase cathepsins. Methods used include scanning electron microscopy, protein electrophoresis, atomic force microscopy, and tensile strength testing. Our study revealed evidence of proteoglycan network degradation, followed by the progressive disassembly of macroscopic collagen fibers into primary structural elements by catK. Proteolytically released GAGs are involved in the generation of collagenolytically active catK-GAG complexes as shown by AFM. In addition to their structural disintegration, a decrease in the tensile properties of fibers was observed due to the action of catK. The Young's moduli of untreated collagen fibers versus catK-treated fibers in dehydrated conditions were 3.2 +/- 0.68 GPa and 1.9 +/- 0.65 GPa, respectively. In contrast, cathepsin L, V, B, and S revealed no collagenase activity, except the disruption of proteoglycan-GAG interfibrillar bridges, which slightly decreased the tensile strength of fibers.
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JI J. Biol. Chem.
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WC Biochemistry & Molecular Biology
SC Biochemistry & Molecular Biology
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PT J
AU Thevenot, J
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TI Trabecular Homogeneity Index Derived From Plain Radiograph to Evaluate Bone Quality
SO JOURNAL OF BONE AND MINERAL RESEARCH
LA English
DT Article
DE CT SCAN; DXA; HOMOGENEITY INDEX; RADIOGRAPH; STRUCTURE ANALYSIS
ID texture analysis; mineral density; postmenopausal women; fracture load; 3-dimensional microarchitecture; hip osteoarthritis; proximal femur; osteoporosis; association; microdamage
AB Radiographic texture analysis has been developed lately to improve the assessment of bone architecture as a determinant of bone quality. We validate here an algorithm for the evaluation of trabecular homogeneity index (HI) in the proximal femur from hip radiographs, with a focus on the impact of the principal compressive system of the trabecular bone, and evaluate its correlation with femoral strength, bone mineral density (BMD), and volumetric trabecular structure parameters. A semiautomatic custom-made algorithm was applied to calculate the HI in the femoral neck and trochanteric areas from radiographs of 178 femoral bone specimens (mean age 79.3 +/- 10.4 years). Corresponding neck region was selected in CT scans to calculate volumetric parameters of trabecular structure. The site-specific BMDs were assessed from dual-energy X-ray absorptiometry (DXA),

and the femoral strength was experimentally tested in side-impact configuration. Regression analysis was performed between the HI and biomechanical femoral strength, BMD, and volumetric parameters. The correlation between HI and failure load was R-2=0.50; this result was improved to R-2=0.58 for cervical fractures alone. The discrimination of bones with high risk of fractures (load <3000N) was similar for HI and BMD (AUC=0.87). Regression analysis between the HIs versus site-specific BMDs yielded R-2=0.66 in neck area, R-2=0.60 in trochanteric area, and an overall of R-2=0.66 for the total hip. Neck HI and BMD correlated significantly with volumetric structure parameters. We present here a method to assess HI that can explain 50% of an experimental failure load and determines bones with high fracture risk with similar accuracy as BMD. The HI also had good correlation with DXA and computed tomography-derived data. (c) 2013 American Society for Bone and Mineral Research.
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TC 14
Z9 14
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PU WILEY
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J9 J BONE MINER RES
JI J. Bone Miner. Res.
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TI Subchondral osteopenia and accelerated bone remodelling post-ovariectomy - a possible mechanism for subchondral microfractures in the aetiology of spontaneous osteonecrosis of the knee?
SO JOURNAL OF ANATOMY
LA English
DT Article
DE bone turnover; osteonecrosis; osteoporosis; ovariectomy; remodelling

ID compact-bone; biomechanical property; ovariectomized ewes; mineral density; l3 vertebra; ovine model; turnover; osteoporosis; sheep; osteoarthritis
AB Osteopenia and subchondral microfractures are implicated in the aetiology of spontaneous osteonecrosis of the knee (SPONK). The ovine tibia shows significant alterations of the trabecular architecture within the subchondral bone of the medial tibial plateau post-ovariectomy (OVX), including reduced trabecular bone volume fraction. We hypothesise that accelerated subchondral bone resorption may also play a role in increasing microfracture risk at this site. Twenty-two sheep were examined in this study; 10 of the sheep underwent OVX, while the remainder (n = 13) were kept as controls (CON). Five fluorochrome dyes were administered intravenously at 12-week intervals via the jugular vein to both groups, to label sites of bone turnover. These animals were then killed at 12 months post-operatively. Bone turnover was significantly increased in the OVX group in both trabecular bone (2.024 vs. 1.047 no. mm-2; P = 0.05) and within the subchondral bone plate (4.68 vs. 0.69 no. mm-2; P < 0.001). In addition to the classically described turnover visible along trabecular surfaces, we also found visual evidence of intra-trabecular osteonal remodelling. In conclusion, this study shows significant alterations in bone turnover in both trabecular bone and within the subchondral bone plate at 1 year post-OVX. Remodelling of trabecular bone was due to both classically described hemi-osteonal and intra-trabecular osteonal remodelling. The presence of both localised osteopenia and accelerated bone remodelling within the medial tibial plateau provide a possible mechanism for subchondral microfractures in the aetiology of SPONK. Further utilisation of the OVX ewe may be useful for further study in this field.
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PU WILEY
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TI A 26-week repeated dose toxicity study of Xian-ling-gu-bao in Sprague-Dawley rats
SO JOURNAL OF ETHNOPHARMACOLOGY
LA English
DT Article
DE Xian-ling-gu-bao; Repeated dose toxicity; No-observed-adverse-effect level
ID postmenopausal
AB Ethnopharmacological relevance: Xian-ling-gu-bao (XLGB) is a traditional Chinese prescription commonly used to treat osteoporosis, osteoarthritis, aseptic bone necrosis, climacteric syndrome, and bone fracture. However, there is limited toxicological information available on XLGB in preclinical animal model studies. It has also been recently reported that XLGB may be related to liver injury in humans. Aim of study: This study was designed to determine the potential toxic effects of XLGB, particularly hepatotoxicity, in Sprague-Dawley rats following oral administration for up to 26 weeks. Materials and methods: Male and female rats were administered XLGB by oral gavage at doses of 0, 100, 300, and 1000 mg/kg for 26 weeks followed by a recovery period of 4 weeks. Clinical signs, body weight, food consumption, ophthalmology, hematology, coagulation, serum chemistry, urinalysis, bone mineral density, hormone concentration, organ weights and histopathology were examined at the end of 13- and 26-week dosing period as well as after the recovery period. Results: Neither hepatotoxicity nor any other toxic effects were observed in the XLGB treated rats at doses up to 1000 mg/kg for 26 weeks except for a slight increase in the organ weight of the uterus in female rats at doses higher than 300 mg/kg on week 26. Conclusions: In this study, we found the no-observed-adverse-effect level (NOAEL) for XLGB in Sprague-Dawley rats was 1000 mg/kg, a dose that was equivalent to 3.3 times human dose based on body surface area. (C) 2012 Elsevier Ireland Ltd. All rights reserved.
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Z9 26
U1 0
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PA ELSEVIER HOUSE, BROOKVALE PLAZA, EAST PARK SHANNON, CO, CLARE, 00000, IRELAND
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WC Plant Sciences; Chemistry, Medicinal; Integrative & Complementary Medicine; Pharmacology & Pharmacy
SC Plant Sciences; Pharmacology & Pharmacy; Integrative & Complementary Medicine
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PT J
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TI The problem of pain in old age
SO ANNALS OF AGRICULTURAL AND ENVIRONMENTAL MEDICINE
LA English
DT Article
DE pain; people in old age; pain treatment in the elderly
AB The elderly are more susceptible to feeling pain than young people. Pain is described as a complex, subjective feeling. causing significant limitation of physical, psychical and social functioning. In the literature, there are many classifications: of pain. Considering the duration, pain may be divided into acute and chronic. Acute pain does not depend on age and lasts less than three months whereas chronic pain is more frequent with the elderly and lasts more than three months. It can be divided into nociceptive and neuropathic pain. Involutional changes progressing in the organism of an old person, combined with numerous chronic diseases occurring in old age, cause approx. 85% of the elderly to suffer from pain. Among the diseases with concurring pain, the first are diseases of the locomotor system and include: osteoporosis, osteoarthritis, and rheumatoid arthritis. Moreover, pain is an intrinsic part of malignant cancer, neuralgia shingles, and diabetic neuropathy. Pain also conceals depression and the depression intensifies the feeling of pain. Due to frequent cognitive disorders and depression, the measurement of pain in the elderly is difficult, it thus requires vast experience. To assess the pain intensity, subjective scales are used, e.g. verbal scale, score scale. To assess the qualitative and quantitative scales the following questionnaires are used: McGill-Melzak Pain Questionnaire and the Pain Assessment Form. Significant for pain assessment with people diagnosed with dementia are objective pain symptoms, namely: worsening appetite, gnashing teeth, grimaces. Pain treatment should be multimodal and include usage of both pharmacological and non-pharmacological methods. Pharmacology is the basis for pain treatment in people of old age, which should be used in the least invasive way, starting with small dosages. The pain-relieving medicine of first choice is paracetamol. In the pharmacological treatment of old people there are also non-opioid pain relieving medicine, opioids and supportive medicine. Among non-pharmacological treatments are rehabilitation and psychological therapy. In pain treatment, awareness among the elderly, their families and carers, and medical staff that the pain is not an attribute of old age; thus, it can be correctly diagnosed and treated.

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TI Angiogenic factors in bone local environment
SO CYTOKINE & GROWTH FACTOR REVIEWS
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DE Bone remodeling; Angiogenesis; EGF-like; Bone remodeling compartment
ID endothelial growth-factor; osteoclast differentiation factor; colony-stimulating factor; nf-kappa-b; chick chorioallantoic membrane; activated protein-kinase; mesenchymal stem-cells; vegf-a expression; adult human bone; factor receptor
AB Angiogenesis plays an important role in physiological bone growth and

remodeling, as well as in pathological bone disorders such as fracture repair, osteonecrosis, and tumor metastasis to bone. Vascularization is required for bone remodeling along the endosteal surface of trabecular bone or Haversian canals within the cortical bone, as well as the homeostasis of the cartilage-subchondral bone interface. Angiogenic factors, produced by cells from a basic multicellular unit (BMU) within the bone remodeling compartment (BRC) regulate local endothelial cells and pericytes. In this review, we discuss the expression and function of angiogenic factors produced by osteoclasts, osteoblasts and osteocytes in the BMU and in the cartilage-subchondral bone interface. These include vascular endothelial growth factor (VEGF), basic fibroblast growth factor (bFGF), BMP7, receptor activator of NF-kappa B ligand (RANKL) and epidermal growth factor (EGF)-like family members. In addition, the expression of EGFL2, EGFL3, EGFL5, EGFL6, EGFL7, EGFL8 and EGFL9 has been recently identified in the bone local environment, giving important clues to their possible roles in angiogenesis. Understanding the role of angiogenic factors in the bone microenvironment may help to develop novel therapeutic targets and diagnostic biomarkers for bone and joint diseases, such as osteoporosis, osteonecrosis, osteoarthritis, and delayed fracture healing. (C) 2013 Elsevier Ltd. All rights reserved.
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NR 225
TC 224
Z9 263
U1 2
U2 97
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1359-6101
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J9 CYTOKINE GROWTH F R
JI Cytokine Growth Factor Rev.
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WC Biochemistry & Molecular Biology; Cell Biology
SC Biochemistry & Molecular Biology; Cell Biology
GA 191LH
UT WOS:000322414000012
PM 23611723
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ER

PT J
AU Dufour, R
Winzenrieth, R
Heraud, A
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AF Dufour, R.
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TI Generation and validation of a normative, age-specific reference curve for lumbar spine trabecular bone score (TBS) in French women
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Bone microarchitecture; DXA (dual-energy X-ray absorptiometry); Normative data curve; TBS (trabecular bone score)
ID mineral density; structural basis; caucasian women; femoral-neck; microarchitecture; fracture; population; quality; osteoporosis; menopause
AB Age-related changes in lumbar vertebral microarchitecture are evaluated, as assessed by trabecular bone score (TBS), in a cohort of 5,942 French women. The magnitude of TBS decline between 45 and 85 years of age is piecewise linear in the spine and averaged 14.5 %. TBS decline rate increases after 65 years by 50 %. This study aimed to evaluate age-related changes in lumbar vertebral microarchitecture, as assessed by TBS, in a cohort of French women aged 45-85 years. An all-comers cohort of French Caucasian women was selected from two clinical centers. Data obtained from these centers were cross-calibrated for TBS and bone mineral density (BMD). BMD and TBS were evaluated at L1-L4 and for all lumbar vertebrae combined using GE-Lunar Prodigy densitometer images. Weight, height, and body

mass index (BMI) also were determined. To validate our all-comers cohort, the BMD normative data of our cohort and French Prodigy data were compared. A cohort of 5,942 French women aged 45 to 85 years was created. Dual-energy X-ray absorptiometry normative data obtained for BMD from this cohort were not significantly different from French prodigy normative data (p = 0.15). TBS values at L1-L4 were poorly correlated with BMI (r = -0.17) and weight (r = -0.14) and not correlated with height. TBS values obtained for all lumbar vertebra combined (L1, L2, L3, L4) decreased with age. The magnitude of TBS decline at L1-L4 between 45 and 85 years of age was piecewise linear in the spine and averaged 14.5 %, but this rate increased after 65 years by 50 %. Similar results were obtained for other region of interest in the lumbar spine. As opposed to BMD, TBS was not affected by spinal osteoarthrosis. The age-specific reference curve for TBS generated here could therefore be used to help clinicians to improve osteoporosis patient management and to monitor microarchitectural changes related to treatment or other diseases in routine clinical practice.

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NR 37
TC 115
Z9 130
U1 0
U2 6
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD NOV 15
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BP 2837

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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
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AF Citak, Mustafa
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TI Failed joint unloading implant system in the treatment of medial knee osteoarthritis
SO ARCHIVES OF ORTHOPAEDIC AND TRAUMA SURGERY
LA English
DT Article
DE KineSpring knee implant system; Unicompartmental knee arthritis; Joint preserving; Complication; Novel device
ID patient outcm; replacement
AB In the setting of end-stage osteoarthritis of the knee, total knee arthroplasty is the gold-standard treatment. Recently, a minimally invasive, joint preserving treatment option in the treatment of medial osteoarthritis of the knee has been developed. It is called the KineSpring(A (R)) (Moximed(A (R)) International GmbH, Zurich, Switzerland). The goal of this novel device is to reduce medial compartment loading without significantly affecting the loading of the lateral compartment. In this context, the current authors present a case of device failure using these new implants, which at 7 months post-op necessitated revision surgery with complete removal of the device.
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NR 14
TC 8
Z9 10
U1 0
U2 1
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
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J9 ARCH ORTHOP TRAUM SU
JI Arch. Orthop. Trauma Surg.
PD NOV 15
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WC Orthopedics; Surgery
SC Orthopedics; Surgery
GA 236UJ
UT WOS:000325824600015
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PT J
AU Kanis, JA
McCloskey, EV
Johansson, H
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Rizzoli, R
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AF Kanis, J. A.
McCloskey, E. V.
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Cooper, C.
Rizzoli, R.
Reginster, J. -Y.
TI European guidance for the diagnosis and management of osteoporosis in postmenopausal women
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Bone mineral density; Diagnosis of osteoporosis; Fracture risk assessment; FRAX; Health economics; Treatment of osteoporosis
ID bone-mineral density; vertebral fracture risk; estrogen plus progestin; x-ray absorptiometry; increased cardiovascular risks; prior bisphosphonate therapy; hormone replacement therapy; intravenous zoledronic acid; for-clinical-densitometry; vitamin-d supplementation
AB Guidance is provided in a European setting on the assessment and treatment of postmenopausal women at risk of fractures due to osteoporosis. The International

Osteoporosis Foundation and European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis published guidance for the diagnosis and management of osteoporosis in 2008. This manuscript updates these in a European setting. Systematic literature reviews. The following areas are reviewed: the role of bone mineral density measurement for the diagnosis of osteoporosis and assessment of fracture risk, general and pharmacological management of osteoporosis, monitoring of treatment, assessment of fracture risk, case finding strategies, investigation of patients and health economics of treatment. A platform is provided on which specific guidelines can be developed for national use.
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AU Shuid, AN
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TI Pomegranate Use to Attenuate Bone Loss in Major Musculoskeletal Diseases: An Evidence-Based Review
SO CURRENT DRUG TARGETS
LA English
DT Review
DE Pomegranate; osteoporosis; osteoarthritis; rheumatoid arthritis
ID necrosis-factor-alpha; nf-kappa-b; healthy postmenopausal women; menopausal syndrome model; estrogen plus progestin; punica-granatum-l.; osteoblast differentiation; juice consumption; oxidative stress; fruit extract
AB This review explores the effects of pomegranate on the pathogenesis of bone loss in osteoporosis, osteoarthritis and rheumatoid arthritis. A systematic review of the literature was conducted to identify the relevant studies on pomegranate and

osteoporosis/osteoarthritis/rheumatoid arthritis. A comprehensive search was conducted in Medline and CINAHL for relevant studies published between the years 1946 to 2012. The main inclusion criteria were research articles published in English, studies had to report the association or effect of pomegranate and these bone and joint diseases: osteoporosis, osteoarthritis or rheumatoid arthritis. The literature search identified 35 potentially relevant articles, whereby 8 met the inclusion criteria. Two animal studies, two combinations of animal and in vitro studies, three in vitro studies and one human study were included in this review. All the studies reported positive effects of pomegranate extract or juice on osteoporosis, osteoarthritis and rheumatoid arthritis. This evidence-based review highlighted the potential of pomegranate extract being used for treating bone loss in osteoporosis, osteoarthritis and rheumatoid arthritis. Further studies are required to identify the active ingredients and molecular mechanisms before controlled human observational studies are conducted to provide stronger evidence.
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PA EXECUTIVE STE Y-2, PO BOX 7917, SAIF ZONE, 1200 BR SHARJAH, U ARAB EMIRATES
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J9 CURR DRUG TARGETS
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PT J
AU Russell, LA
AF Russell, Linda A.
TI Osteoporosis and Orthopedic Surgery: Effect of Bone Health on Total Joint Arthroplasty Outcome
SO CURRENT RHEUMATOLOGY REPORTS

LA English
DT Article
DE Osteoporosis; Orthopedic surgery; Joint arthroplasty; Bone health; Resurfacing total hip arthroplasty; Osteolysis; Vitamin D; Teriparatide; Denosumab; Heterotopic ossification
ID total knee arthroplasty; vitamin-d status; mineral density; heterotopic ossification; bisphosphonate use; implant fixation; fracture risk; hip; osteoarthritis; women
AB Osteoporosis is a common condition. As the population ages, more patients with osteoporosis will require orthopedic procedures, including arthroplasty. Adverse outcomes are more likely for patients with osteoporosis requiring orthopedic procedures, for example those with intraoperative fractures, periprosthetic osteolysis with implant migration, and postoperative periprosthetic fractures. Cemented prosthetic hip replacements may be more successful among patients with poor bone quality. Femoral neck fracture is a concern during hip resurfacing among patients with osteoporosis. Vitamin D deficiency is common among patients undergoing joint arthroplasty and the ideal vitamin D level for joint arthroplasty has yet to be determined. Both bisphosphonates and teriparatide may aide successful osteointegration among patients undergoing noncemented joint arthroplasty. Focusing on bone health perioperatively should result in better outcomes for orthopedic procedures.
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NR 40
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AF Orth, P.
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TI Parathyroid hormone [1-34] improves articular cartilage surface architecture and integration and subchondral bone reconstitution in osteochondral defects in vivo
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE PTH [1-34]; PTH1R; Osteochondral defect; Cartilage repair; Subchondral bone
ID full-thickness defects; autologous chondrocyte implantation; cell-based repair; igf-i; experimental-model; osteoarthritis; osteoporosis; rabbit; knee; pth
AB Objective: The 1-34 amino acid segment of the parathyroid hormone (PTH [1-34]) mediates anabolic effects in chondrocytes and osteocytes. The aim of this study was to investigate whether systemic application of PTH [1-34] improves the

repair of non-osteoarthritic, focal osteochondral defects in vivo. Design: Standardized cylindrical osteochondral defects were bilaterally created in the femoral trochlea of rabbits (n = 8). Daily subcutaneous injections of 10 mu g PTH [1-34]/kg were given to the treatment group (n = 4) for 6 weeks, controls (n = 4) received saline. Articular cartilage repair was evaluated by macroscopic, biochemical, histological and immunohistochemical analyses. Reconstitution of the subchondral bone was assessed by micro-computed tomography. Effects of PTH [1-34] on synovial membrane, apoptosis, and expression of the PTH receptor (PTH1R) were determined. Results: Systemic PTH [1-34] increased PTH1R expression on both, chondrocytes and osteocytes within the repair tissue. PTH [1-34] ameliorated the macro- and microscopic aspect of the cartilaginous repair tissue. It also enhanced the thickness of the subchondral bone plate and the microarchitecture of the subarticular spongiosa within the defects. No significant correlations were established between these coexistent processes. Apoptotic levels, synovial membrane, biochemical composition of the repair tissue, and type-I/II collagen immunoreactivity remained unaffected. Conclusions: PTH [1-34] emerges as a promising agent in the treatment of focal osteochondral defects as its systemic administration simultaneously stimulates articular cartilage and subchondral bone repair. Importantly, both time-dependent mechanisms of repair did not correlate significantly at this early time point and need to be followed over prolonged observation periods. (C) 2013 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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PT J
AU Anagnostis, P
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TI Is there any association between leptin levels and bone mineral density in haemophiliac men?
SO ARCHIVES OF MEDICAL SCIENCE
LA English
DT Article
DE haemophilia; arthropathy; osteoporosis; osteopenia; leptin
ID healthy postmenopausal women; serum leptin; biochemical markers; body-composition; key role; mass; osteoporosis; differentiation; osteoarthritis; testosterone
AB Introduction: Conflicting data exist regarding the role of leptin in bone metabolism. The purpose of the present study was to investigate serum leptin concentrations in male patients with haemophilia A and B, a disease known to be associated with low bone mass. Material and methods: Eighty-one male patients, aged 45.4 +/- 15 years, were screened. Bone mineral density (BMD) was measured by dual-energy X-ray absorptiometry (DXA) in lumbar spine (LS), femoral neck (FN) and total hip (TH). Results: Low bone mass was diagnosed in 20 patients (24.7%). Serum leptin concentrations were strongly associated with body weight (r(s) = 0.457, p = 0.0001) and body mass index (BMI) (r(s) = 0.491, p = 0.0001). In unadjusted analysis leptin was inversely associated with BMD in LS (r(s) = -0.255, p

= 0.023), but not in FN and TH (r(s) = -0.205, p = 0.068 and r(s) = -0.191, p = 0.090, respectively). However, after adjusting for BMI and body weight, leptin was inversely associated with BMD in FN (F-1,F-76 = 7.727, p = 0.007, beta = -0.371, Delta R-2 = 0.089) and TH (F-1,F-76 = 4.533, p = 0.036, beta = -0.290, Delta R-2 = 0.054), but not in LS (F-1,F-75 = 2.076, p = 0.154, beta = -0.202, Delta R-2 = 0.026). No association was found between age, presence of HBV, HCV or HIV infection or alkaline phosphatase and leptin levels. Conclusions: Our study showed a negative association between circulating leptin levels and bone mass in males, independently of body weight and BMI.
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TI Preliminary report on a study of health-related quality of life in patients with rheumatoid arthritis
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Article
DE Rheumatoid arthritis; Health-related quality of life; SF-36
ID survey sf-36; reliability; validity; association; depression; disability; mortality; tests
AB There are studies about health-related quality of life (HRQoL) in patients with rheumatoid arthritis (RA), but few studies prospectively assessed HRQoL. The main purpose of this study was to analyze HRQoL in patients hospitalized due to RA exacerbation and observed over a planned 2-year follow-up in an outpatient setting. The study involved 42 women and 9 men, at mean age of 62.5 years (SD

+/- A 12.6). The mean duration of the study was 22-23 months. The HRQoL analysis was performed using the SF-36 survey. At the beginning of the study, basic data on age, sex, selected biochemical (ESR, CRP, GFR, hemoglobin, plasma albumin, plasma protein), and clinical parameters (the duration of RA, VAS, DAS28, BMI, the presence of cardiovascular disease, diabetes, osteoporosis, osteoporotic fractures, osteoarthritis, neoplasm) were collected. Questionnaires were completed at the beginning and end of the study. Statistically significant reductions in HRQoL scores were observed in social functioning (SF; 0.42 vs 0.32, P < 0.05), whereas role-emotional health (RE; 0.48 vs 0.59, P < 0.05) and mental health (MH; 0.47 vs 0.54, P < 0.05) scores were increased. A decrease in the SF was positively correlated with the lack of osteoporosis at baseline (r = 0.35, P > 0.02). An increase in the MH was inversely correlated with BMI (r = -0.31, P < 0.05), and the level of hemoglobin (r = -0.32, P < 0.028) and positively correlated with the presence of osteoarthritis at baseline (r = 0.29, P < 0.05). In RA patients, dimensions of HRQoL as SF, RE, and MH could change within 2 years and these changes could be related to comorbidities. Although preliminary findings are promising, further studies are needed.

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PT J
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AF Corrado, Addolorata
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TI RANKL/OPG Ratio and DKK-1 Expression in Primary Osteoblastic Cultures from Osteoarthritic and Osteoporotic Subjects
SO JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE OSTEOBLASTS; OSTEOPOROSIS; OSTEOARTHRITIS; WNT SIGNALING; RANKL/OPG
ID kappa-b ligand; receptor activator; osteoclast differentiation; hip osteoarthritis; in-vitro; bone; osteoprotegerin; cells; dickkopf-1; vitamin-d-3
AB Objective. To evaluate the expression of Dicickopf-1 protein factor (DICK-1), DKK-2, and beta-catenin, components of the Wnt pathway, in human osteoarthritic (OA) and osteoporotic (OP) osteoblasts and to correlate it to cell metabolic activity, proliferation, and receptor activator of nuclear factor-kappa B ligand/osteoprotegerin (RANKL/OPG) expression. Methods. Primary human osteoblast cultures were obtained from healthy, OA, and OP donors. In each cell population we evaluated DICK-1, DKK-2, nonphosphorylated beta-catenin and RANKL/OPG expression, osteocalcin and alkaline phosphatase (ALP) synthesis, and cell proliferation, both in basal condition and after vitamin D3 stimulation. Results. DICK-1 and DICK-2 showed opposite patterns of expression in OA and OP osteoblasts. The RANKL/OPG ratio was significantly higher in the OP group because of a greater expression of RANKL, whereas it was significantly lower in the OA

group because of a higher expression of OPG. Treatment with vitamin D3 increased the RANKL/OPG ratio and DKIC-2 expression and reduced DICK-1 expression in each cell population, but did not affect beta-catenin levels. Both osteooalcin and ALP production and cell proliferation were enhanced in OA cells and reduced in the OP ones. Conclusion. These data confirm that OA and OP are characterized by opposite bone changes, consisting of reduced bone remodeling processes with increased osteoblast activity in OA, and enhanced bone resorptive activity with reduction of osteoblast metabolism in OP, and suggest that the Wnt pathway is involved in the pathogenesis of both diseases.
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AU Lee, JK
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TI QCT bone mineral density responses to 1 year of oral bisphosphonate after total knee replacement for knee osteoarthritis
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Bisphosphonate; BMD; QCT; Total knee arthroplasty
ID postmenopausal osteoporosis; official positions; fracture risk; arthroplasty; women; therapy; hip; alendronate; cohort; pain
AB Bone mineral density (BMD) declined in more than half (53.7%) of post-total knee arthroplasty (TKA) patients (44 of the 82) after 1 year of oral bisphosphonate treatment, and that this decline was significant in bilateral TKA patients. TKA has proven to be an extremely successful procedure in terms of improving ambulatory function. However, the effects of such improvements in ambulatory function and of bisphosphonate on axial BMD have not been established. The purpose of this study was to determine the effect of 1 year of oral bisphosphonate in postmenopausal patients that have undergone TKA and to identify factors related to BMD changes using lumbar spine quantitative computed tomography (QCT). Eighty-two postmenopausal women that underwent primary TKA for knee osteoarthritis and who received once-weekly oral alendronate 70 mg for 12 months after TKA were enrolled. The effect of 1 year of oral bisphosphonate treatment post-TKA and the factors related to general lumbar spine BMD changes by using QCT were determined. Some 53.7% of patients (44 of the 82) experienced an average lumbar spine QCT BMD decline of -6 mg/ml (range -15 to -0.5 mg/ml) after 1 year of oral bisphosphonate treatment, whereas the remaining 38 patients (46.3%) experienced an average increase of 6.8 mg/ml (range 0.6 to 15.7 mg/ml). Logistic and linear regression analysis showed that bilateral TKA was significantly related to a BMD decline ($p < 0.05$). Other factors, such as, age, body mass index, number of comorbidities, and Knee Society scores were not found to be significantly related to BMD response. BMD declined in more than half (53.7%) of the patients after bisphosphonate treatment, and that this decline was significant in bilateral TKA patients. We believe that reduced mobility during rehabilitation was probably responsible for these BMD reductions.

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NR 25
TC 7
Z9 9
U1 0
U2 6
PU SPRINGER LONDON LTD
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD JAN 15
PY 2013
VL 24
IS 1
BP 287
EP 292
DI 10.1007/s00198-012-1925-x
PG 6
WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA 065PS
UT WOS:000313161400026
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ER

PT J
AU Iqbal, T
Zaidi, MA
Wells, GA
Karsh, J
AF Iqbal, Tariq
Zaidi, Mukarram A.
Wells, George A.
Karsh, Jacob
TI Celiac disease arthropathy and autoimmunity study
SO JOURNAL OF GASTROENTEROLOGY AND HEPATOLOGY
LA English
DT Article
DE celiac disease; gluten free diet; non-celiac disease

ID gluten-free diet; arthritis; bone; osteoporosis; children
AB Background and Aim: To evaluate presence of sero-negative spondyloarthritis (SpA) in celiac disease (CD) patients, and whether compliance with a gluten free diet (GFD) improved arthritis manifestations in these patients. Methods: We undertook a prospective, questionnaire based, cross-sectional cohort study to evaluate the presence or absence of SpA simultaneously in both CD and non-CD cohorts. Results: 356/590 (60.3%) patients with CD participated in this study. 99% had diagnosis confirmed by a diagnostic test (79% small bowel biopsy, 19.8% blood test, 3.9% stool test). Approximately 131 (37%) cases of arthritis were reported in CD patients. Of the 6/356 CD patients with seronegative spondyloarthritides, four had sacroiliitis, two ankylosing spondylitis, and one psoriatic arthritis, compared to one ankylosing spondylitis and five psoriatic arthritis in non-CD. Osteoarthritis (89 vs 59, P = 0.93) was the most common diagnosis reported by respondents. More CD patients with diarrhea (94%) and anemia (81%) improved on GFD, compared to arthritis symptoms (30%). Autoimmune thyroiditis (10.6% vs 0.4%), insulin dependent diabetes mellitus (IDDM) (2.2% vs 1.7%), systemic Lupus erythematosus (SLE) (1.1% vs 0), and psoriasis (12.9% vs 5.5%) occurred more frequently in CD patients. The prevalence of Crohn's disease, ulcerative colitis, Sjogren's syndrome, primary biliary cirrhosis, and primary sclerosing cholangitis was around 1% each. Univariate Logistic regression analysis showed <= high school education (odds ratio [OR] 2.01, P < 0.003), age >= 60 years (OR 4.13, P < 0.001), and osteoporosis (OR 2.78, P < 0.001) to be significantly associated with report of arthritis in CD patients. Conclusion: We did not find a high rate of SpA in CD patients. In contrast, increased rates of autoimmune thyroiditis, SLE, IDDM, and psoriasis were seen in CD.
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NR 23
TC 36
Z9 42
U1 0
U2 24
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0815-9319
EI 1440-1746
J9 J GASTROEN HEPATOL
JI J. Gastroenterol. Hepatol.
PD JAN 15
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IS 1
BP 99
EP 105
DI 10.1111/j.1440-1746.2012.07272.x
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WC Gastroenterology & Hepatology
SC Gastroenterology & Hepatology
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UT WOS:000314210500019
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PT J
AU Clayton, ES
Hochberg, MC
AF Clayton, Elizabeth Smelter
Hochberg, Marc C.
TI Osteoporosis and Osteoarthritis, Rheumatoid Arthritis and Spondylarthropathies
SO CURRENT OSTEOPOROSIS REPORTS
LA English
DT Article
DE Ankylosing spondylitis; Osteoarthritis; Osteoblasts; Osteoclasts; Osteoporosis; Rheumatoid arthritis
ID bone-mineral density; necrosis-factor-alpha; fracture risk; ankylosing-spondylitis; women; osteoprotegerin; interleukin-6; pathogenesis; expression; cytokines
AB Osteoporosis (OP) commonly occurs in the setting of inflammatory arthritis, whereas there is an inverse relationship with osteoarthritis (OA). We review the recent updates in epidemiology and pathophysiology of OP relating to several arthridities. In ankylosing spondylitis, lateral lumbar spine dual x-ray absorptiometry is better at detecting osteoporosis compared with the AP view and patients receiving treatment with anti-tumor necrosis factor medications had lower levels of bone turnover markers. With regard to rheumatoid arthritis, anticitrullinated peptide positivity without clinical arthritis as well as higher levels of interleukin-6 is associated with decreased bone mineral density and polymorphisms in the vitamin D receptor in RA patients may predispose to OP. With regard to OA, results from the Global Longitudinal Study of Osteoporosis in Women study and several radiological studies suggest that differences in the distribution of bone mass at the femoral neck may account for the inverse relationship of OA and OP, and several studies suggest that OA and OP have opposing cytokine and bone metabolism marker profiles.
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NR 40
TC 20
Z9 28
U1 0
U2 23
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 1544-1873
EI 1544-2241
J9 CURR OSTEOPOROS REP
JI Curr. Osteoporos. Rep.
PD DEC 15
PY 2013
VL 11
IS 4
BP 257
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DI 10.1007/s11914-013-0172-1
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Yoo, TK
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AF Yoo, Tae Keun
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Park, Eun-Cheol
TI Osteoporosis Risk Prediction for Bone Mineral Density Assessment of Postmenopausal Women Using Machine Learning
SO YONSEI MEDICAL JOURNAL
LA English
DT Article
DE Screening; machine learning; risk assessment; clinical decision tools; support vector machines
ID support vector machines; self-assessment tool; fracture risk; prevalence; diagnosis; classification
AB Purpose: A number of clinical decision tools for osteoporosis risk assessment have been developed to select postmenopausal women for the measurement of bone mineral density. We developed and validated machine learning models with the aim of more accurately identifying the risk of osteoporosis in postmenopausal women compared to the ability of conventional clinical decision tools. Materials and Methods: We collected medical records from Korean postmenopausal women based on the Korea National Health and Nutrition Examination Surveys. The training data set was used to construct models based on popular machine learning algorithms such as support vector machines (SVM), random forests, artificial neural networks (ANN), and logistic regression (LR) based on simple surveys. The machine learning models were compared to four conventional clinical decision tools: osteoporosis self-assessment tool (OST), osteoporosis risk assessment instrument (ORAI), simple calculated osteoporosis risk estimation (SCORE), and osteoporosis index of risk (OSIRIS). Results: SVM had significantly better area under the curve (AUC) of the receiver operating characteristic than ANN, LR, OST, ORAL SCORE, and OSIRIS for-the training set. SVM predicted osteoporosis risk with an AUC of 0.827, accuracy of 76.7%, sensitivity of 77.8%, and specificity of 76.0% at total hip, femoral neck, or lumbar spine for the testing set The significant factors selected by SVM were age, height, weight, body mass index, duration of menopause, duration of breast feeding, estrogen therapy, hyperlipidemia, hypertension, osteoarthritis, and diabetes mellitus. Conclusion: Considering various predictors associated with low bone density, the machine learning methods may be effective tools for identifying postmenopausal women at high risk for osteoporosis.
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NR 47
TC 74
Z9 86
U1 1
U2 52
PU YONSEI UNIV COLL MEDICINE
PI SEOUL
PA 50-1 YONSEI-RO, SEODAEMUN-GU, SEOUL 120-752, SOUTH KOREA
SN 0513-5796
EI 1976-2437
J9 YONSEI MED J
JI Yonsei Med. J.
PD NOV 1
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IS 6
BP 1321
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WC Medicine, General & Internal
SC General & Internal Medicine
GA 244UK
UT WOS:000326415500004
PM 24142634
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PT J
AU Lee, JK
Choi, CH
Kang, CN
AF Lee, Jin Kyu
Choi, Choong H.
Kang, Chang-Nam
TI Quantitative computed tomography assessment of bone mineral density after 2 years' oral bisphosphonate treatment in postmenopausal osteoarthritis patients who underwent total knee arthroplasty
SO JOURNAL OF INTERNATIONAL MEDICAL RESEARCH
LA English
DT Article
DE Total knee arthroplasty; TKA; quantitative computed tomography; QCT; bisphosphonate; alendronate; bone mineral density; BMD
ID women; osteoporosis; prevalence; fractures; therapy; risk; hip
AB Objectives: To identify the effects of two years' oral bisphosphonate (alendronate) treatment in patients who underwent total knee arthroplasty (TKA); to determine whether significant responses seen after the first year of treatment changed during the second year. Additionally, the study tried to identify factors relating to bone mineral density (BMD) changes. Methods: This was a prospective 2-year follow-up study of a previous 1-year report of postmenopausal women with knee osteoarthritis who underwent primary unilateral or staged bilateral TKA, after which they received 70 mg alendronate orally once-weekly. BMD was measured using quantitative computed tomography (QCT) on lumbar vertebrae at baseline (pre-TKA) and at 12 and 24 months. Factors associated with BMD changes were determined by regression analysis. Results: Sixty-one patients entered the second year and continued treatment for >= 24 months. Mean vertebral QCT BMDs at baseline and after 12 and 24 months' alendronate treatment were 71.8 mg/ml (41.9-97.5 mg/m1), 69.3 mg/ml (31.4-103.9 mg/m1), and 72.7 mg/m1 (33.1-136.1 mg/m1), respectively. Patients undergoing bilateral TKA and who had more severe OA at baseline (bilateral severe [grade 4] OA) had a lower BMD response after 2 years' bisphosphonate treatment, compared with patients with less severe unilateral knee OA who underwent unilateral TKA.Improvements were, however, seen compared with year I levels. Low BMI was associated with BMD nonresponse. Conclusions: Patients with bilateral severe OA (grade 4) requiring bilateral knee

replacement are at greater risk of nonresponse after 2 years' oral alendronate treatment. A longer duration of treatment may be necessary in these patients.
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TI In vitro and in vivo angiogenic activity of osteoarthritic and osteoporotic osteoblasts is modulated by VEGF and vitamin D3 treatment
SO REGULATORY PEPTIDES
LA English
DT Article
DE Angiogenesis; Chorioallantoic membrane; Osteoarthritis; Osteoporosis; Vitamin D3
ID endothelial growth-factor; skeletal development; expression; cells; differentiation; bone; osteogenesis; activation; mechanisms; migration
AB Vascular Endothelial Growth Factor (VEGF) is a potent angiogenic factor, which

also regulates bone remodeling. Osteoblasts not only respond to VEGF stimulation, but also express and synthesize this factor. The present study was aimed to evaluate in vitro differences in VEGF production and expression of cultured human osteoblastic cells derived from healthy donors and from subjects affected by osteoarthritis and osteoporosis, under basal conditions than after vitamin D-3, and to investigate the angiogenic activity of culture media obtained by these cells in chick embryo chorioallantoic membrane (CAM) assay. The results showed that normal and pathological osteoblasts produce and express VEGF and 1,25 dihydroxy-vitamin D-3 treatment increases protein and m-RNA VEGF levels. In addition culture media of pathological osteoblasts induce a strong angiogenic response, greater than observed with culture medium of normal cells, suggesting the involvement of osteoblast-derived VEGF in the pathogenesis of bone diseases.
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TI Bone mineralization is elevated and less heterogeneous in adults with type 2 diabetes and osteoarthritis compared to controls with osteoarthritis alone
SO BONE
LA English
DT Article
DE Bone mineralization density distribution (BMDD); Type 2 diabetes; Osteoporosis; Quantitative backscattered electron imaging; Bone quality
ID backscattered electron images; density distribution; trabecular bone; fracture risk; iliac crest; osteoporotic fractures; matrix mineralization; mechanical-property; biochemical markers; cortical bone
AB Purpose: The purpose of this study was to determine whether trabecular bone mineralization differed in adults with type 2 diabetes compared to adults without type 2 diabetes. Methods: Proximal femur specimens were obtained following a total hip replacement procedure from men and women >= 65 years of age with and without type 2 diabetes. A scanning electron microscope was used for quantitative backscattered electron imaging (qBEI) analysis of trabecular bone

samples from the femoral neck. Gray scale images (pixel size=5.6 mu m(2)) were uploaded to Image! software and gray level (GL) values were converted to calcium concentrations (weight [wt] % calcium [Ca]) using data obtained with energy dispersive X-ray spectrometry. The following bone mineralization density distribution (BMDD) outcomes were collected: the weighted mean bone calcium concentration (Ca-MEAN), the most frequently occurring bone calcium concentration (Ca-PEAK) and mineralization heterogeneity (Ca-WIDTH). Differences between groups were assessed using the Student's t-test for normally distributed data and Mann-Whitney U-test for non-normally distributed data. An alpha value of <0.05 was considered significant. Results: Thirty-five Caucasian participants were recruited (mean [standard deviation, SD] age, 75.5 [6.5] years): 14 adults with type 2 diabetes (years since type 2 diabetes diagnosis, 13.5 [7.4] years) and 21 adults without type 2 diabetes. In the adults with type 2 diabetes, bone Ca-MEAN was 4.9% greater (2036 [0.98] wt.% Ca versus 19.40 [1.07] wt.% Ca, p = 0.015) and Ca-WIDTH was 9.4% lower (median [interquartile range] 3.55 [2.99-4.12] wt.% Ca versus 3.95 [0.71] wt% Ca, p<0.001) compared to controls. There was no between-group difference in Ca-PEAK (21.12 [0.97] wt% Ca for type 2 diabetes versus 20.44 [1.30] wt.% Ca for controls, p = 0.121). Conclusion: The combination of elevated mean calcium concentration in bone and lower mineralization heterogeneity in adults with type 2 diabetes may have deleterious effects on the biomechanical properties of bone. These microscopic alterations in bone mineralization, which may be mediated by suppressed bone remodeling, further elucidate higher fracture risk in adults with type 2 diabetes. (C) 2013 Elsevier Inc. All rights reserved.
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AU Cake, MA
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TI Comparison of gait and pathology outcomes of three meniscal procedures for induction of knee osteoarthritis in sheep
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Meniscus; Sheep; Animal model
ID plateau leveling osteotomy; arthroscopic partial meniscectomy; ground reaction forces; in-vivo kinematics; articular-cartilage; tibial plateau; matrix metalloproteinases; medial meniscectomy; stifle joint; aggrecan
AB Objective(s): Meniscectomy (MX) of sheep induces a well-established animal model of human osteoarthritis (OA). This study compared the clinical (lameness) and pathological outcomes of unilateral, complete medial MX vs two less traumatic and more easily performed meniscal destabilisation procedures. Methods: Four-year old wethers (n = 6/group) underwent sham operation, cranial pole release (CPR), mid-body transection (MBT) or total MX of the medial meniscus. Joints were assessed for gross pathology (cartilage erosion and osteophytes), histomorphometry, two histopathology scoring methods (modified Mankin-type and Pritzker score), and immunohistology for ADAMTS- and MMP-cleaved neoepitopes, at 12 weeks post-op. Ground reaction forces (GRFs) were determined by force plate in a subset (n = 4/group) at baseline, 2.5, 8, and 12 weeks post-op. Results: Gross pathology scores of operated groups differed significantly from sham animals ($P < 0.05$) but not from each other, though qualitative differences were noted: CPR sheep developed more cranial and focal lesions, while MBT and MX joints showed more widespread lesions and osteophyte formation. Similarly, histopathology scores were significantly elevated vs sham but did not differ between operated groups at $P < 0.05$, except for a trend for lower tibial cartilage histopathology in MBT consistent with the immunohistologic pattern of reduced aggrecanase-cleavage neoepitope in that model. CPR sheep developed less femoral subchondral sclerosis, suggesting some residual biomechanical effect from the destabilised but intact meniscus. Few significant differences were noted between operated groups in force plate analyses, though gait abnormalities appeared to be least in CPR sheep, and most persistent (>12 weeks) in MBT animals. Conclusion: The well-validated ovine MX model and the simpler meniscal destabilisation procedures resulted in broadly similar joint pathology and

lameness. Meniscal CPR or MBT, as easier and more clinically relevant procedures, may represent preferred models for the induction of OA and evaluation of potential disease-modifying therapies. (C) 2012 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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SO EVIDENCE-BASED COMPLEMENTARY AND ALTERNATIVE MEDICINE
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DT Review
ID quality-of-life; randomized controlled-trial; obstructive pulmonary-disease; chronic heart-failure; cardiovascular risk-factors; improves standing balance; knee extensor strength; bone-mineral density; older-adults; blood-pressure
AB Tai Chi Chuan (Tai Chi) is a Chinese traditional mind-body exercise and recently, it becomes popular worldwide. During the practice of Tai Chi, deep diaphragmatic breathing is integrated into body motions to achieve a harmonious balance between body and mind and to facilitate the flow of internal energy (Qi). Participants can choose to perform a complete set of Tai Chi or selected movements according to their needs. Previous research substantiates that Tai Chi has significant benefits to health promotion, and regularly practicing Tai Chi improves aerobic capacity, muscular strength, balance, health-related quality of life,

and psychological well-being. Recent studies also prove that Tai Chi is safe and effective for patients with neurological diseases (e. g., stroke, Parkinson's disease, traumatic brain injury, multiple sclerosis, cognitive dysfunction), rheumatological disease (e. g., rheumatoid arthritis, ankylosing spondylitis, and fibromyalgia), orthopedic diseases (e. g., osteoarthritis, osteoporosis, low-back pain, and musculoskeletal disorder), cardiovascular diseases (e. g., acute myocardial infarction, coronary artery bypass grafting surgery, and heart failure), chronic obstructive pulmonary diseases, and breast cancers. Tai Chi is an aerobic exercise with mild-to-moderate intensity and is appropriate for implementation in the community. This paper reviews the existing literature on Tai Chi and introduces its health-promotion effect and the potential clinical applications.
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PT J
AU Roman-Blas, JA
Castañeda, S
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Herrero-Beaumont, G
AF Roman-Blas, Jorge A.
Castaneda, Santos
Largo, Raquel
Lems, Willem F.
Herrero-Beaumont, Gabriel
TI An OA phenotype may obtain major benefit from bone-acting agents
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE subchondral bone; articular cartilage; osteoarthritis; osteoporosis; bone agents
ID anterior cruciate ligament; radiographic knee osteoarthritis; estrogen replacement therapy; subchondral trabecular bone; reduces cartilage degeneration; meniscectomized guinea-pig; articular-cartilage; salmon-calcitonin; mineral density; strontium ranelate

AB Background: Osteoarthritis (OA) joints display relevant microstructure alterations associated to an increase in remodeling at subchondral bone, which supports its crucial role in OA pathogenesis. Despite this, the treatment of knee OA patients with antiresorptive drugs has given discordant results, suggesting the existence of a particular patient subset with good response to halting high subchondral remodeling. Objective: To identify an OA phenotype that may obtain major benefit from therapy with bone-acting agents. Methods: A systematic review of the literature was performed by searching the Medline and PubMed databases from 1990 to April 2013 using the following keywords: subchondral bone, articular cartilage, and osteoarthritis in various combinations with bone agents, bone mineral density, and scintigraphy. Results: Early animal and human studies provided the rationale for the beneficial use of bone agents on OA cartilage damage. Several bone-acting agents have reduced low back pain and likely spondylosis progression. Recently, strontium ranelate has been reported to exert both structural and clinical benefits in knee OA patients with radiological progression. However, other antiresorptives have shown divergent results. Human studies suggest that these contradictory results may be due to the lack of well-defined OA phenotypes and an accurate methodology to recruit and follow up these patients. Conclusions: A particular subset of postmenopausal patients with high remodeling and/or low subchondral bone density may benefit from the treatment with bone-acting agents hindering OA progression. This OA population could be identified with the simultaneous use of subchondral bone dual-energy X-ray absorptiometry and scintigraphy. (C) 2014 Elsevier Inc. All rights reserved.
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AU Zufferey, F
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TI Epigenetics and methylation in the rheumatic diseases
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE Epigenetics; Methylation; EWAS; Autoimmune diseases; Rheumatic diseases
ID systemic-lupus-erythematosus; epigenome-wide association; dynamic dna methylation; t-cells; osteoarthritic chondrocytes; ankylosing-spondylitis; genetic contribution; norwegian twins; down-regulation; arthritis
AB Objectives: Rheumatic diseases encompass a wide range of conditions of poorly characterized etiopathology, many having both genetic and environmental susceptibility factors. Epigenetic studies are providing new insights into disease pathogenesis. Recent rheumatology literature related to DNA methylation studies-both epigenome-wide and candidate gene-are discussed, as well as methodological issues. Method: A PubMed search for articles published until April 2013 was conducted using the following keywords: ("methylation" OR "epigenetics") AND ("rheumatoid arthritis" OR "lupus" OR "autoimmune disease" OR "osteoporosis" OR "osteoarthritis" OR "musculoskeletal disorder") and EWAS. The reference lists of identified articles were searched for further articles. Results: Several genome-wide methylation studies have been reported recently, mostly in autoimmune rheumatic diseases. Overall, these studies have identified methylation

signatures in disease, clustering of subgroups as well as new and known epigenetic associations. Methodological issues, small sample sizes and reduced coverage of methylation assays render many results preliminary. Conclusions: There have been a number of epigenetic advances in rheumatic diseases recently. The new technologies and emerging field of epigenome-wide association will provide novel perspectives in disease etiology, diagnosis, classification, and therapy. (C) 2014 Elsevier Inc. All rights reserved.
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TI Risk Factors for Falls in Older Korean Adults: The 2011 Community Health Survey
SO JOURNAL OF KOREAN MEDICAL SCIENCE
LA English
DT Article
DE Accidental Falls; Elderly People; Risk Factors; Koreans
ID recurrent falls; prevalence; seniors; home; associations; hypotension; men
AB Falls are a major health problem for elderly populations worldwide. We analyzed data from the 2011 Korean Community Health Survey to identify potential risk factors for falls in a representative population-based sample of community-dwelling older Korean adults. Risk factors for falls were assessed by multivariate survey logistic regression models. The prevalence of falls was 36.5% in males and 63.5% in females. Age and female sex were associated with a higher risk of falls. Similarly, living alone, living in an urban area, poor self-rated health, and high stress were associated with a high risk of falls. Subjects with diabetes mellitus, stroke, osteoarthritis, osteoporosis, urinary incontinence, cataracts, or depression had a high risk of falls. However, subjects with hypertension were at low risk for falls. In conclusion, age, female sex, marital status, residence location, self-rated

health, stress, and several chronic conditions were significantly associated with the risk for falls in the older Korean adults. Our findings suggest that these risk factors should be addressed in public health policies for preventing falls.
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TC 41
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U1 1
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PU KOREAN ACAD MEDICAL SCIENCES
PI SEOUL
PA 302 75 DONG DU ICHON, DONG YONGSAN KU, SEOUL 140 031, SOUTH KOREA
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J9 J KOREAN MED SCI
JI J. Korean Med. Sci.
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PT J
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TI Methodological challenges in the use of hip-specific composite outcomes: linking measurements from hip fracture trials to the International Classification of Functioning, Disability and Health Framework
SO ARCHIVES OF ORTHOPAEDIC AND TRAUMA SURGERY
LA English
DT Article
DE Outcomes; Education; Osteoporosis; Hip fracture; Practice management; Health policy
ID quality-of-life; femoral-neck fractures; randomized-trials; end-points; replacement; issue; osteoarthritis; arthroplasty; icf; recommendations
AB The prevalence of hip-specific outcome measures in randomized trials reflects what directs our outcome assessment following a hip fracture. The present study provides an overview on the most commonly-used hip-specific outcome instruments used for postoperative assessment of hip fracture with respect to their covered contents. This can facilitate the selection of appropriate items for specific purposes in clinical as well as research settings. We used the International Classification of Functioning, Disability and Health (ICF) model to distinguish concepts within the instrument. All items from the questionnaires were categorized into one of three categories using the ICF linking rules for a standardized approach. The hip-specific composites measures were also compared to other types of prevalent measures: generic and patient-based instruments. All of the items in the instruments could be mapped to the ICF. We report the highest frequency of ICF activity and participation (71 %) within the Harris hip score (HHS) which is similar to the frequency of ICF content found in the generic measures (82 %). Hip-specific composites focused mostly on walking and moving long and short distances, while in patient-reported measures there was a concentration on the concept of sensation of pain and pain in body parts. The prevalent use of the HHS, over the other hip-specific instruments, could be attributed to its likeness in concept to other generic measures. The dominance of the ICF category of activity and participation reflects what is important to clinicians treating a hip fracture. Composite scores remain problematic as they cut across different ICF concepts. As

long as the popularity of composite scoring systems continues, an overall score may not represent the true patient preferences and concerns in clinical trials. Future studies could apply the results from this study for the creation of an ICF category-based item banking or investigators could operationalize the ICF categories within these candidate measures for specific interventions.
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NR 48
TC 7
Z9 7
U1 0
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AU Armstrong, J
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TI Cervical Vertebral Trabecular Bone Mineral Density in Great Danes With and Without Osseous-Associated Cervical Spondylomyelopathy
SO JOURNAL OF VETERINARY INTERNAL MEDICINE
LA English
DT Article
DE Cervical spine; Computed tomography; Dog; Osteoarthritis; Wobbler syndrome
ID quantitative computed-tomography; degenerative joint disease; x-ray absorptiometry; induced osteoporosis; lumbar spine; dogs; mri; osteoarthritis;

features; ct
AB BackgroundGreat Danes (GDs) with osseous-associated cervical spondylomyelopathy (CSM) have osteoarthritis (OA) of the cervical vertebrae. OA is often associated with increases in bone mineral density (BMD) in people and dogs. Hypothesis/ObjectivesTo compare the trabecular BMD of the cervical vertebrae between clinically normal (control) GDs and GDs with osseous-associated CSM by using computed tomography (CT). We hypothesized that the vertebral trabecular BMD of CSM-affected GDs would be higher than that of control GDs. AnimalsClient-owned GDs: 12 controls, 10 CSM affected. MethodsProspective study. CT of the cervical vertebral column was obtained alongside a calibration phantom. By placing a circular region of interest at the articular process joints, vertebral body, pedicles, and within each rod of the calibration phantom, trabecular BMD was measured in Hounsfield units, which were converted to diphosphate equivalent densities. Trabecular BMD measurements were compared between CSM-affected and control dogs, and between males and females within the control group. ResultsDifferences between CSM-affected and control dogs were not significant for the articular processes (mean=-39; P=.37; 95% CI: -102 to 24), vertebral bodies (mean=-62; P=.08; 95% CI: -129 to 6), or pedicles (mean=-36; P=.51; 95% CI: -105 to 33). Differences between female and male were not significant. Conclusions and Clinical ImportanceThis study revealed no difference in BMD between control and CSM-affected GDs. Based on our findings no association was detected between cervical OA and BMD in GDs with CSM.
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NR 33
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PU WILEY
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PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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AU Nixon, A
Kerr, C
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AF Nixon, A.
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TI Osteoporosis Assessment Questionnaire-Physical Function (OPAQ-PF): a psychometrically validated osteoporosis-targeted patient reported outcome measure of daily activities of physical function
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE OPAQ-PF; Osteoporosis; Outcomes assessment; Patient reported outcomes; Physical function; Psychometrics
ID quality-of-life; vertebral fractures; european foundation; women; responsiveness; sf-36
AB The purpose of this study was to evaluate the measurement properties of the Osteoporosis Assessment Questionnaire-Physical Functioning (OPAQ-PF). Based on

this study, the OPAQ-PF has confirmed unidimensionality and acceptable reliability, construct validity, and sensitivity to change in a recent fracture/no recent fracture osteoporosis sample. Dimensionality was established through exploratory and confirmatory factor analysis. Patients completed three patient reported outcome (PRO) measures and four performance-based measures (PBMs) at baseline to enable an evaluation of construct validity. Patients without a recent fracture completed the OPAQ-PF 2 weeks after baseline to enable an evaluation of test-retest reliability. Ability to detect change and interpretation of change were investigated following completion of the OPAQ-PF 12 and 24 weeks postbaseline by patients with a recent fracture. A prospective psychometric validation study in 144 postmenopausal women, with moderate to severe osteoporosis, 37 of whom had experienced a recent fragility fracture (< 6 weeks). Unidimensionality was established for the OPAQ-PF by factor analysis. The OPAQ-PF had good internal consistency (alpha = 0.974) and test-retest reliability (mean intraclass correlation coefficient (ICC) 0.993. The OPAQ-PF differentiated between patients with/without recent fracture, and by severity of osteoarthritis; it correlated strongly with hypothesized-related scales and PBMs ($r > 0.3$, $p < 0.001$). Ability to detect change was established with high correlations between changes in OPAQ-PF score and changes in global concept scores in recent fracture patients (r a parts per thousand yenaEuro parts per thousand 0.6, 24-week change). Effect size of change on OPAQ-PF score increased by level of global change ($p < 0.001$). Anchor-based methods identified an OPAQ-PF change of 10 at an individual patient level and 20 at a group level as meaningful to patients. The OPAQ-PF has confirmed unidimensionality and acceptable reliability, construct validity, and sensitivity to change in a recent fracture/no recent fracture osteoporosis sample.
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NR 35
TC 10
Z9 11

U1 0
U2 7
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD JUN 15
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IS 6
BP 1775
EP 1784
DI 10.1007/s00198-014-2695-4
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA AH8GG
UT WOS:000336374400013
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PT J
AU Cao, YL
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TI Cross-sectional and longitudinal associations between systemic, subchondral bone mineral density and knee cartilage thickness in older adults with or without radiographic osteoarthritis
SO ANNALS OF THE RHEUMATIC DISEASES

LA English
DT Article
ID articular-cartilage; quantitative mri; surface-area; volume; osteoporosis; progression; incident; women; multicenter; compartment
AB Objectives To investigate cross-sectional and longitudinal associations between systemic bone mineral density (BMD), subchondral BMD (sBMD) and knee cartilage thickness in older adults with or without radiographic osteoarthritis (ROA). Methods A prospective cohort of 158 randomly selected subjects (mean 63 years, 48% women) including 69 non-ROA and 89 ROA subjects were studied at baseline and 2.7 years later. Knee cartilage thickness was semi-automatically determined from T1-weighted fat-suppressed MRI. Knee cartilage volume was measured from MRI. Systemic BMD and sBMD were measured by dual-energy X-ray absorptiometry (DXA). Results Cross-sectionally, total body, total hip, spine BMD and/or lateral tibial sBMD were significantly and positively associated with femoral, lateral tibial and/or patellar cartilage thickness in subjects with ROA after adjustment for potential confounders. Longitudinally, a high total body BMD was associated with an increase in femoral cartilage thickness (beta: 0.33 mm/g/cm(2), 95% CI 0.13 to 0.53); a high spine BMD was associated with increases in femoral and lateral tibial cartilage thickness (beta: 0.25 mm/g/cm(2), 95% CI 0.10 to 0.41; and beta: 0.18 mm/g/cm(2), 95% CI: 0.01 to 0.34, respectively) and a high medial tibial sBMD was associated with an increase in medial tibial cartilage thickness (beta: 0.45 mm/g/cm(2), 95% CI 0.02 to 0.89) in subjects with ROA. In contrast, there were no significant associations between baseline systemic BMD, sBMD and cartilage volume loss, nor were there associations between BMD and cartilage thickness in subjects without ROA. Conclusions Both systemic and subchondral BMD are positively associated with increased cartilage thickness in subjects with ROA, suggesting BMD may play a protective role against cartilage loss in knee OA.
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NR 51
TC 39
Z9 44
U1 0
U2 20
PU BMJ PUBLISHING GROUP
PI LONDON
PA BRITISH MED ASSOC HOUSE, TAVISTOCK SQUARE, LONDON WC1H 9JR, ENGLAND
SN 0003-4967
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J9 ANN RHEUM DIS
JI Ann. Rheum. Dis.
PD NOV 15
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BP 2003
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DI 10.1136/annrheumdis-2013-203691
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WC Rheumatology
SC Rheumatology
GA AR0ZR
UT WOS:000343308200024

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PT J
AU Okano, K
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TI Discrepancy in bone mineral densities at different skeletal sites in hip osteoarthritis patients
SO MODERN RHEUMATOLOGY
LA English
DT Article
DE Bone mineral density; Dual energy X-ray absorptiometry; Osteoarthritis of the hip; Quantitative ultrasonography
ID quantitative ultrasound; femoral-neck; osteoporosis; quality; age; replacement; population; osteopenia; bearing
AB Objective. Increased femoral neck bone mineral density (BMD) in a hip with osteoarthritis (OA) has been previously reported, however, it is possible that increased BMD at sites other than the hip joint is influenced by the disease process of OA. Therefore, we measured BMD at locations different from the hip joint and determined whether higher BMD was also observed at these different skeletal sites in hip OA patients. Methods. We measured BMD in 68 women (average age 61.0 years) scheduled to undergo total hip arthroplasty for end-stage OA and 100 healthy women (average age 60.9 years) as age-matched controls. BMD at the lumbar spine, radius, and calcaneus was measured by dual-energy X-ray absorptiometry (DXA). Moreover, we measured speed of sound (SOS), broadband ultrasound attenuation (BUA), and stiffness index of the calcaneus by quantitative ultrasonography (QUS). Results. BMD obtained by DXA at the lumbar spine and radius was significantly higher in hip OA patients than in controls. However, at the calcaneus, no significant differences were observed between the groups in BMD obtained by DXA. SOS, BUA, and stiffness index obtained by QUS were significantly lower in the OA group than in controls. Conclusion. Higher BMDs of the spine and radius suggest that the incidence of osteoporosis is inversely associated with the incidence of OA. However, it remains unclear whether lack of difference in BMD

and lower SOS, BUA, and stiffness index of the calcaneus in the OA group was secondary to the effect walking disturbance resulting from hip pain. Our data suggest that hip OA patients have higher BMD than healthy women, and that inactivity or immobilization caused by hip OA may reduce BMD in the lower limb.
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10.1034/j.1600-0838.2000.010002103.x
NR 23
TC 8
Z9 9
U1 0
U2 4
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 1439-7595
EI 1439-7609
J9 MOD RHEUMATOL
JI Mod. Rheumatol.
PD MAR 15
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BP 340
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WC Rheumatology
SC Rheumatology
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UT WOS:000332483500021
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PT J
AU Vrtacnik, P
Marc, J
Ostanek, B
AF Vrtacnik, Peter
Marc, Janja
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TI Epigenetic mechanisms in bone
SO CLINICAL CHEMISTRY AND LABORATORY MEDICINE
LA English
DT Review
DE bone remodeling; DNA methylation; miRNA; osteoarthritis; osteoporosis;

posttranslational histone modifications
ID histone deacetylase inhibitors; mesenchymal stem-cells; promotes osteoblast differentiation; kappa-b ligand; dna methylation biomarkers; osteogenic differentiation; gene-expression; receptor activator; lineage commitment; osteocalcin gene
AB Epigenetics refers to the study of mechanisms able to influence gene expression in a stable and potentially heritable manner without altering the DNA sequence. These mechanisms include posttranslational histone modifications, miRNA-mediated post-transcriptional regulation and DNA methylation. The accumulation of molecular errors over time resulting, at least partly, in the alteration of normal epigenetic patterns is being widely associated with aging. Epigenetic processes are also considered important mechanisms through which environmental and stochastic stressors promote numerous pathologies in humans. It is, therefore, reasonable to expect that several complex multi-factorial late-onset disorders, like osteoporosis and osteoarthritis, could have a strong epigenetic component. The focal point of all skeletal pathologies is the deregulation of bone remodeling, mediated by bone-forming osteoblasts and bone-resorbing osteoclasts. In order to keep both processes in balance, the activity, differentiation and apoptosis of both cell types have to be tightly regulated. In particular, the differentiation of osteoblasts and osteoclasts is accompanied by profound changes in gene expression. It has been shown that histone deacetylation and DNA methylation negatively regulate the expression of several genes associated with different stages of osteoblast differentiation; however, several miRNAs promote osteoblastogenesis. Furthermore, inactivating mutations in the miRNA coding regions could be associated with the pathogenesis of osteoporosis. The aim of this review is to highlight the role of epigenetic mechanisms in bone remodeling and bone homeostasis, so as to implicate their diagnostic and therapeutic potential in skeletal diseases.
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TI Genetic Polymorphisms of Interleukin-1 Alpha and the Vitamin D Receptor in Mexican Mestizo Patients with Intervertebral Disc Degeneration
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DT Article
ID resonance-imaging changes; low-back-pain; risk-factors; functional polymorphism; lumbar spine; association; disease; osteoporosis; osteoarthritis; susceptibility
AB Intervertebral disc degeneration (IDD) is the most common diagnosis in patients with back pain, a leading cause of musculoskeletal disability worldwide. Several conditions, such as occupational activities, gender, age, and obesity, have been associated with IDD. However, the development of this disease has strong genetic determinants. In this study, we explore the possible association between rs1800587 (c.-949C>T) of interleukin-1 alpha (IL1A) and rs2228570 (c.2T>V) and rs731236 (c.1056T>C) of vitamin D receptor (VDR) gene polymorphisms and the development of IDD in northwestern Mexican Mestizo population. Gene polymorphisms were analyzed by polymerase chain reaction followed by restriction fragment length polymorphism, in two groups matched by age and gender: patients with symptomatic lumbar IDD (n = 100) and subjects with normal lumbar-spine MRI-scans (n = 100). Distribution of the mutated alleles in patients and controls was 27.0% versus 28.0% (P = 0.455) for T of rs1800587 (IL1A); 53.0% versus 58.0% (P = 0.183) for V of rs2228570 (VDR); and 18.0% versus 21.0% (P = 0.262) for C of rs731236 (VDR). Our results showed no association between the studied polymorphisms and IDD in this population. This is the first report on the contribution of gene polymorphisms on IDD in a Mexican population.
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TI Prevention of diseases after menopause
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DE PREVENTION; MENOPAUSE; OBESITY; CARDIOVASCULAR; OSTEOPOROSIS; COGNITION; DEMENTIA; CANCER; HORMONAL THERAPY
ID coronary-heart-disease; hormone replacement therapy; body-mass index; osteoporosis-related fractures; cardiovascular risk-factors; conjugated equine estrogen; breast-cancer incidence; postmenopausal women; alzheimers-disease; waist circumference
AB Women may expect to spend more than a third of their lives after menopause. Beginning in the sixth decade, many chronic diseases will begin to emerge, which will affect both the quality and quantity of a woman's life. Thus, the onset of menopause heralds an opportunity for prevention strategies to improve the quality of life and enhance longevity. Obesity, metabolic syndrome and diabetes, cardiovascular disease, osteoporosis and osteoarthritis, cognitive decline, dementia and depression, and cancer are the major diseases of concern. Prevention strategies at menopause have to begin with screening and careful assessment for risk factors, which should also include molecular and genetic diagnostics, as these become available. Identification of certain risks will then allow directed therapy. Evidence-based prevention for the diseases noted above include lifestyle management, cessation of smoking, curtailing excessive alcohol consumption, a healthy diet and moderate exercise, as well as mentally stimulating activities. Although the most recent publications from the follow-up studies of the Women's Health Initiative do not recommend menopause hormonal therapy as a prevention strategy, these conclusions may not be fully valid for midlife women, on the basis of the existing data. For healthy women aged 50-59 years, estrogen therapy decreases coronary heart disease and all-cause mortality; this interpretation is entirely consistent with results from other randomized, controlled trials and observational studies. Thus. as part of a comprehensive strategy to prevent chronic disease after menopause, menopausal hormone therapy, particularly estrogen therapy may be considered as part of the armamentarium.

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NR 163
TC 199
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TI Quantitative magnetic resonance imaging (MRI) evaluation of cartilage repair after microfracture (MF) treatment for adult unstable osteochondritis dissecans (OCD) in the ankle: correlations with clinical outcome
SO EUROPEAN RADIOLOGY
LA English
DT Article
DE MRI; Microfracture; Ankle; Osteochondritis dissecans (OCD); Bone marrow edema (BME)
ID bone-marrow edema; autologous chondrocyte transplantation; normal hyaline cartilage; articular-cartilage; arthroscopic microfracture; reparative tissue; t2 assessment; lesions; knee; osteoarthritis
AB To quantitatively evaluate cartilage repair after microfracture (MF) for ankle osteochondritis dissecans (OCD) using MRI and analyse correlations between MRI and clinical outcome. Forty-eight patients were recruited and underwent MR imaging, including 3D-DESS, T2-mapping and T2-STIR sequences, and completed American Orthopaedic Foot and Ankle Society (AOFAS) scoring. Thickness index, T2 index of repair tissue (RT) and volume of subchondral bone marrow oedema (BME) were calculated. Subjects were divided into two groups: group A (3-12 months post-op), and group B (12-24 months post-op). Student's t test was used to

compare the MRI and AOFAS score between two groups and Pearson's correlation coefficient to analyse correlations between them. Thickness index and AOFAS score of group B were higher than group A ($P < 0.001$, $P < 0.001$). T2 index and BME of group B were lower than group A ($P < 0.001$, $P = 0.012$). Thickness index, T2 index and BME were all correlated with AOFAS score ($r = 0.416$, $r = -0.475$, $r = -0.353$), but BME was correlated with neither thickness index nor T2 index. Significant improvement from MF can be expected on the basis of the outcomes of quantitative MRI and AOFAS score. MRI was correlated with AOFAS score. BME is insufficient as an independent predictor to evaluate repair quality, but reduction of BME can improve the patient's clinical outcome. aEuro cent Patients with unstable ankle OCD had satisfactory clinical outcome after MF. aEuro cent Quantitative MRI correlates with clinical outcome after MF for ankle OCD. aEuro cent The reduction of subchondral BME will improve the patient's clinical outcome. aEuro cent Quantitative MRI can monitor the process of cartilage repair over time.
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TC 26
Z9 31
U1 0
U2 8
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PI NEW YORK
PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
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Zheng, M. H.
TI Identical subchondral bone microarchitecture pattern with increased bone resorption in rheumatoid arthritis as compared to osteoarthritis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Rheumatoid arthritis; Osteoarthritis; Microarchitecture; Bone remodeling; Cyst
ID marrow edema; periarticular osteoporosis; knee osteoarthritis; articular-cartilage; osteocyte density; cancellous bone; femoral-head; joint; cysts; pathogenesis
AB Objectives: To analyze the differences in microarchitecture and bone remodeling of subchondral bone in femoral heads from patients with rheumatoid arthritis (RA) and osteoarthritis (OA). Designs: Peri-articular bone samples, including subchondral trabecular bone (STB) and deeper trabecular bone (DTB) were extracted from the load-bearing region of femoral heads from 20 patients with RA and 40 patients with OA during hip replacement surgery. Micro-CT, histomorphometry and backscatter scanning electron microscopy (BSEM) were performed to assess microarchitecture and bone histology parameters. Results: In both RA and OA, STB showed more sclerotic microarchitecture and more active bone remodeling, compared to DTB. RA and OA showed similar microarchitecture characteristics in both STB and DTB, despite STB in RA exhibiting higher bone resorption. In addition, there was no difference in the frequency of bone cysts in STB between RA and OA. In STB, the trabecular bone surrounding subchondral bone cysts (Cys-Tb) was more sclerotic than the trabecular bone found distant to cysts (Peri-Tb), with a higher level of bone remodeling. Both Cys-Tb region and Peri-Tb region were detected to have similar microarchitectural and bone remodeling characteristics in RA and OA. Conclusions: Apart from higher bone resorption in the general subchondral bone of RA samples, the periarticular bone exhibited similar microarchitectural and bone remodeling characteristics in RA and OA. (C) 2014 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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TI Value of biomarkers in osteoarthritis: current status and perspectives
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LA English
DT Review
ID synovial-fluid levels; c-reactive protein; biochemical markers; knee osteoarthritis; radiographic osteoarthritis; ctx-ii; rheumatoid-arthritis; biological markers; aggrecan fragments; proteomic analysis
AB Osteoarthritis affects the whole joint structure with progressive changes in cartilage, menisci, ligaments and subchondral bone, and synovial inflammation. Biomarkers are being developed to quantify joint remodelling and disease progression. This article was prepared following a working meeting of the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis convened to discuss the value of biochemical markers of matrix metabolism in drug development in osteoarthritis. The best candidates are generally molecules or molecular fragments present in cartilage, bone or synovium and may be specific to one type of joint tissue or common to them all. Many currently investigated biomarkers are associated with collagen metabolism in cartilage or bone, or aggrecan metabolism in cartilage. Other biomarkers are related to non-collagenous proteins, inflammation and/or fibrosis. Biomarkers in osteoarthritis can be categorised using the burden of disease, investigative,

prognostic, efficacy of intervention, diagnostic and safety classification. There are a number of promising candidates, notably urinary C-terminal telopeptide of collagen type II and serum cartilage oligomeric protein, although none is sufficiently discriminating to differentiate between individual patients and controls (diagnostic) or between patients with different disease severities (burden of disease), predict prognosis in individuals with or without osteoarthritis (prognostic) or perform so consistently that it could function as a surrogate outcome in clinical trials (efficacy of intervention). Future avenues for research include exploration of underlying mechanisms of disease and development of new biomarkers; technological development; the 'omics' (genomics, metabolomics, proteomics and lipidomics); design of aggregate scores combining a panel of biomarkers and/or imaging markers into single diagnostic algorithms; and investigation into the relationship between biomarkers and prognosis.

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TI Sonographic pattern of fetal head descent: relationship with duration of active second stage of labor and occiput position at delivery
SO ULTRASOUND IN OBSTETRICS & GYNECOLOGY
LA English
DT Article
DE intrapartum ultrasound; labor; persistent occiput posterior; second stage; three-dimensional
ID intrapartum translabial ultrasound; transperineal ultrasound; prolonged 2nd-stage; posterior position; station; progression; mode; women; angle
AB Objectives The objectives of this study were firstly to assess the longitudinal changes of various sonographic parameters of fetal head progression in relation to length of active second stage of labor, and secondly to compare ultrasound findings obtained longitudinally among fetuses with persistent occiput posterior (OP) vs those with persistent occiput anterior (OA) position. Methods From a series of nulliparous low-risk women at term attending the labor ward of our university hospital, transperineal ultrasound volumes were prospectively acquired at the beginning of the active second stage (T1) and at 40-min intervals thereafter until delivery (T2, T3). Sonographic parameters were derived from offline analysis of each volume, including the angle of progression (AoP), progression distance (PD), head-symphysis distance (HSD), head direction (HD) and midline angle. These parameters were compared between patients who delivered within 60 min from the beginning of the active second stage of labor (early delivery) and those who remained undelivered by that time (late delivery). Fetal head position was determined from stored digital images of transabdominal examinations performed at the beginning of the active second stage. Comparison was performed between fetuses with OA and those with persistent OP position at delivery. Results Spontaneous vaginal delivery was achieved in 58 (81.7%) cases, whereas vacuum

extraction and Cesarean section were performed in eight (11.3%) and five (7.0%) cases, respectively. Delivery was achieved within 60 min from the beginning of the active second stage in 44 (62.0%) patients. In the early vs late delivery groups, measurements of AoP, HSD and PD at T1 were significantly different (AoP, 143.9 +/- 20.5 degrees vs 125.3 +/- 15.0 degrees, P < 0.001; HSD, 14.8 +/- 4.5mm vs 20.9 +/- 5.8 mm, P < 0.001; PD, 44.0 +/- 14.1 vs 35.0 +/- 13.1 mm, P = 0.008). On logistic regression analysis of data obtained at T1, maternal body mass index, oxytocin administration, neonatal birth weight and HSD appeared to predict independently duration of the active second stage. Among fetuses delivering in the OP position (n = 10, 13.5%), Cesarean delivery was significantly more common than in those delivering in the OA position (n = 5 (50.0%) vs n = 2 (3.1%), P = 0.001). Women with persistent OP position compared with OA showed a significantly different AoP at T1 (122 +/- 17 degrees vs 138 +/- 20 degrees, P = 0.016), HD and HSD at T1 (HD, 112 +/- 17mm vs 86 +/- 19 mm, P < 0.001; HSD, 16.5 +/- 5.4mm vs 22.8 +/- 6.6 mm, P = 0.008) and at T2 (HD, 120 +/- 16 vs 82 +/- 27 mm, P = 0.008; HSD, 12.6 +/- 3.4mm vs 18.5 +/- 5.4 mm, P = 0.038). Conclusions AoP, PD and HSD are significantly different between patients undergoing delivery before or after 60 min from the beginning of the active second stage of labor. Ultrasound parameters are among the significant predictors of duration of the active second stage. Moreover, in fetuses persisting in the OP position vs those delivering in the OA position, fetal head progression seems to differ at early phases of the active second stage. Copyright (C) 2014 ISUOG. Published by John Wiley & Sons Ltd.
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TI Exercise habits during middle age are associated with lower prevalence of sarcopenia: the ROAD study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Elderly; Epidemiology; Exercise; Physical performance; Sarcopenia
ID bioelectrical-impedance analysis; skeletal-muscle mass; older men; epidemiology; definition; predictors; healthy; cohort; adults
AB The present cross-sectional study investigated the prevalence of sarcopenia and clarified its associated factors in 1,000 elderly participants of Japanese population-based cohorts. Exercise habit in middle age was associated with low prevalence of sarcopenia in older age, suggesting that it is a protective factor against sarcopenia in older age. The present study investigated the prevalence of sarcopenia using the European Working Group on Sarcopenia in Older People (EWGSOP) definition, and clarified the association of sarcopenia with physical performance in the elderly participants of Japanese population-based cohorts of the Research on Osteoarthritis/osteoporosis Against Disability (ROAD) study. We enrolled 1,000 participants (aged a parts per thousand yen65 years) from the second visit of the ROAD study who had completed assessment of handgrip strength, gait speed, and skeletal muscle mass measured by bioimpedance analysis. Presence of sarcopenia was determined according to the EWGSOP algorithm. Information collected included exercise habits in middle age. Prevalence of sarcopenia was 13.8 % in men and 12.4 % in women, and tended to be significantly higher according to increasing age in both sexes. Factors associated with sarcopenia, as determined by logistic regression analysis, were chair stand time

(odds ratio [OR], 1.09; 95 % confidence interval [CI], 1.04-1.14), one-leg standing time (OR, 0.97; 95 % CI, 0.96-0.99), and exercise habit in middle age (OR, 0.53; 95 % CI, 0.31-0.90). Exercise habit in middle age was associated with low prevalence of sarcopenia in older age. Furthermore, linear regression analysis revealed that exercise habits in middle age were significantly associated with grip strength (P < .001), gait speed (P < .001), and one-leg standing time (P = .005) in older age. This cross-sectional study suggests that exercise habit in middle age is a protective factor against sarcopenia in older age and effective in maintaining muscle strength and physical performance in older age.
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TI What about strontium ranelate in osteoarthritis? Doubts and securities
SO MODERN RHEUMATOLOGY
LA English
DT Review
DE Disease modifying osteoarthritis drugs; Osteoarthritis; Strontium ranelate
ID estrogen replacement therapy; knee osteoarthritis; subchondral bone; double-blind; ctx-ii; cartilage; efficacy; disease; sulfate; safety
AB Osteoarthritis (OA) is the most common disabling joint disease worldwide and its treatment is based on a combination of non-pharmacological and pharmacological modalities. Commonly prescribed OA medications include symptomatic drugs (non-steroidal anti-inflammatory drugs, analgesics, locally administered corticosteroids, viscosupplementation) and new compounds that are potentially able to reduce or stop the disease progression, called "Disease Modifying Osteoarthritis Drugs (DMOADs)". Strontium ranelate (SR) is an anti-osteoporotic treatment that increases bone formation, while decreasing bone resorption and it potentially acts as a new DMOAD. The objective of this review is to summarize the currently available information on clinical effects and mechanism of action of SR in OA. We have examined two post hoc analysis conducted on the large, randomized Treatment of Peripheral Osteoporosis study and the double-blind, randomized, controlled trial about SR in knee OA. Furthermore, we analyzed three studies in animal models and two in vitro experiments to better understand the mechanism of action of SR in OA. The available data demonstrate that SR could be considered a new promising symptomatic and disease-modifying agent in the treatment of OA and was safe and well tolerated. Additionally, there is a need for further investigations to establish the optimal dosage and to better clarify the mechanism of action of SR in OA.
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TI The fracture sites of atypical femoral fractures are associated with the weight-bearing lower limb alignment
SO BONE
LA English
DT Article
DE Atypical femoral fracture (AFF); Osteoporosis; Lower limb alignment; Femorotibial angle (FTA); Bisphosphonate
ID postmenopausal women; bisphosphonate use; american society; femur fractures; bone turnover; task-force; osteoarthritis; polymyositis
AB Purpose: Atypical femoral fractures (AFFs) are stress-related fractures that are speculated to associate with long-term treatment with bisphosphonates for osteoporosis. A history of AFF is a high risk factor for the development of a subsequent AFF in the same location of the contralateral femur, suggesting that a patient's individual anatomical factor(s) are related to the fracture site of AFFs. In this study, we investigated the radiographs of fourteen AFFs (four bilateral fractures

among ten patients) treated at six hospitals associated with our university between 2005 and 2010. The fracture site and standing femorotibial angle (FTA), which reflects the mechanical axis of the lower limb, were measured on weight-bearing lower limb radiographs. The fracture site and FTA of patients with typical femoral fractures (TFF) were compared to those of patients with AFFs. The correlations were examined using Spearman's rank correlation coefficients. The fracture locations in the femora were almost the same in the patients with bilateral AFFs. There was a positive correlation between the fracture site and the standing FTA in the patients with AFFs (r = 0.82, 95% confidence interval; 0.49 to 0.94), indicating that the larger the standing FTA (varus alignment), the more distal the site of the fracture in the femur. The FTA of the patients with atypical diaphyseal femoral fracture were significantly larger compared to that of those with not only atypical subtrochanteric fractures but also TFFs. In conclusion, the fracture sites of AFFs are associated with the standing lower limb alignment, while those of TFFs are not. (C) 2014 Elsevier Inc. All rights reserved.
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PT J
AU Iizuka, Y
Iizuka, H
Mieda, T
Tajika, T
Yamamoto, A
Takagishi, K
AF Iizuka, Yoichi
Iizuka, Haku
Mieda, Tokue
Tajika, Tsuyoshi
Yamamoto, Atsushi
Takagishi, Kenji
TI Association between "loco-check" and EuroQol, a comprehensive instrument for assessing health-related quality of life: a study of the Japanese general population
SO JOURNAL OF ORTHOPAEDIC SCIENCE
LA English
DT Article
ID low-back-pain; postmenopausal women; vertebral fractures; european foundation; locomotive syndrome; spinal mobility; osteoarthritis; osteoporosis; knee; impact
AB The concept of "locomotive syndrome" (LS) was proposed by the Japanese Orthopaedic Association (JOA) in 2007 to refer to the risk of elderly individuals becoming bedridden because of reduced function of locomotive organs, for example muscles, bones, and joints. The purpose of this study was to clarify the association between LS screening results based on "loco-check" and health-related quality of life (HRQoL) assessed by use of EuroQol. Four-hundred and forty-two Japanese subjects (183 males and 259 females) were evaluated for LS and HRQoL

by use of "loco-check," EuroQol-5 dimensions (EQ-5D), and EuroQol-VAS (EQ-VAS). If the subjects answered "yes" to one or more of the seven items of "loco-check," they were assigned to a locomotive syndrome suspected group (L group). If they answered "no" to all seven items, they were assigned to a locomotive syndrome not suspected group (NL group). We investigated the association between the screening LS results obtained by use of "loco-check" and HRQoL status determined by use of EQ-5D utility value and EQ-VAS score. LS was suspected among 39.6 % of the subjects on the basis of "loco-check." In univariate analysis, significantly higher age, higher female-to-male ratio, and more reduced HRQoL were observed in the L group than in the NL group, according to EQ-5D and EQ-VAS. Logistic regression analysis showed that EQ-5D utility value and EQ-VAS score were associated with LS and the difference was statistically significant. Furthermore, correlations were found between the number of items with a "yes" answer on "loco-check", EQ-5D, or EQ-VAS. That is, a larger number of items with a "yes" answer on "loco-check" was associated with reduced HRQoL assessed by use of EQ-5D and EQ-VAS. We demonstrated that a finding of LS on the basis of "loco-check" is significantly associated with EQ-5D utility value and EQ-VAS score, and that a population identified as having LS by use of "loco-check" also had reduced HRQoL. Furthermore, it is speculated that the severity of reduced HRQoL because of locomotive dysfunction can be determined by use of "loco-check".
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PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
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TI The neurobiology of skeletal pain
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DT Review
DE age; bone; cartilage; CRPS; marrow; nociceptor
ID nerve growth-factor; gene-related-peptide; bone cancer pain; lumbar intervertebral disc; root ganglion neurons; tumor-necrosis-factor; cutaneous innervation; molecular-mechanisms; musculoskeletal pain; sympathetic-nerve
AB Disorders of the skeleton are one of the most common causes of chronic pain and long-term physical disability in the world. Chronic skeletal pain is caused by a remarkably diverse group of conditions including trauma-induced fracture, osteoarthritis, osteoporosis, low back pain, orthopedic procedures, celiac disease, sickle cell disease and bone cancer. While these disorders are diverse, what they share in common is that when chronic skeletal pain occurs in these disorders, there are currently few therapies that can fully control the pain without significant unwanted side effects. In this review we focus on recent advances in our knowledge concerning the unique population of primary afferent sensory nerve fibers that innervate the skeleton, the nociceptive and neuropathic mechanisms that are involved in driving skeletal pain, and the neurochemical and structural changes that can occur in sensory and sympathetic nerve fibers and the CNS in chronic skeletal pain. We also discuss therapies targeting nerve growth factor or sclerostin for treating skeletal pain. These therapies have provided unique insight into the factors that drive skeletal pain and the structural decline that occurs in the aging skeleton. We conclude by discussing how these advances have changed our understanding and potentially the therapeutic options for treating and/or preventing chronic pain in the injured, diseased and aged skeleton.
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NR 143
TC 132
Z9 169
U1 1
U2 32
PU WILEY-BLACKWELL
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0953-816X
EI 1460-9568
J9 EUR J NEUROSCI
JI Eur. J. Neurosci.
PD FEB 15
PY 2014
VL 39
IS 3
BP 508
EP 519
DI 10.1111/ejn.12462
PG 12
WC Neurosciences
SC Neurosciences & Neurology
GA 301UT
UT WOS:000330558300017
PM 24494689
DA 2026-02-10
ER

PT J
AU Rabasseda, X
AF Rabasseda, X.
TI A REPORT FROM THE AMERICAN SOCIETY FOR BONE AND MINERAL RESEARCH

2014 ANNUAL MEETING (SEPTEMBER 12-15-HOUSTON, TEXAS, USA)
SO DRUGS OF TODAY
LA English
DT Article
DE Osteoporosis; Osteoarthritis; Fractures; Metastatic bone disease
AB Although the weather was very Texas-unlike, with fog, clouds and even intense rain, the George R. Brown Convention Center in Houston was the site for this year's annual meeting of the American Society for Bone and Mineral Research, where investigators from across the world came to present the latest findings in bone science. Four days of oral and poster presentations encompassing over 1,500 papers discussing a great variety of subjects including preclinical and clinical research aimed at improving the treatment of bone diseases such as osteoporosis and other forms of bone frailty.
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NR 0
TC 0
Z9 0
U1 0
U2 2
PU PROUS SCIENCE, SAU-THOMSON REUTERS
PI BARCELONA
PA 398 PROVENCA, 08025 BARCELONA, SPAIN
SN 1699-3993
EI 1699-4019
J9 DRUG TODAY
JI Drugs Today
PD OCT 15
PY 2014
VL 50
IS 10
BP 691
EP 702
DI 10.1358/dot.2014.50.10.2235851
PG 12
WC Pharmacology & Pharmacy
SC Pharmacology & Pharmacy
GA AT9WB
UT WOS:000345273300003
PM 25374967
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ER

PT J
AU Tat, LC
Singh, G
Jonathan, SBY
Leng, LS
Liang, S
Awiszus, F
Lohmann, CH
Das De, S
AF Tat, Lim Chin
Singh, Gurpal
Jonathan, Sng Bo Yan
Leng, Low Siew
Liang, Shen
Awiszus, Friedemann
Lohmann, Christostostoph H.
Das De, Shamal
TI Mediolateral Subchondral Tibial Bone Mineral Density Difference Does Not Predict Osteoarthritis Progression
SO ORTHOPEDICS
LA English
DT Article
ID knee osteoarthritis; osteoporosis; health; women
AB Data on the relationship between osteoporosis and osteoarthritis are conflicting. Most studies report "snapshot" prevalences, and there are few studies evaluating localized knee bone mineral density (BMD) measurements with respect to subsequent osteoarthritis progression. The authors hypothesize that increased mediolateral difference of the proximal tibial BMD may predict progression of knee osteoarthritis. In this study, 246 female volunteers were followed up prospectively over 2 years. Baseline BMD measurements of bilateral proximal (subchondral) tibiae were performed, and the mediolateral BMD ratio was calculated. Precision studies were performed on healthy volunteers to validate the technique. The patients were divided into osteoarthritis progressors and non-progressors based on Kellgren-Lawrence radiographic criteria at 2-year follow-up. Patients who were taking bisphosphonates or who had a history of inflammatory, infectious, or metabolic bone disease and previous hip and knee surgery were excluded. Demographic data, calcium supplementation, physical activity, baseline knee radiographs, and radiographs at 2-year follow-up were obtained. The study was adequately powered to detect an effect size of 0.4. There were 121 progressors and 125 non-progressors. Mean mediolateral BMD ratio was 1.02 among the progressors and 1.01 among the non-progressors (t=0.632, P=.528). Potential confounders were equally distributed among both groups. The data suggest that

there is no link between proximal tibial BMD ratio and progression of knee osteoarthritis.
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NR 24
TC 0
Z9 1
U1 0
U2 1
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J9 ORTHOPEDICS
JI Orthopedics
PD APR 15
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BP E351
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PG 6
WC Orthopedics
SC Orthopedics
GA AH2KO
UT WOS:000335950200006
PM 24762839
DA 2026-02-10
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PT J
AU Karaaslan, F
Mutlu, M
Mermerkaya, MU
Karaoglu, S
Saçmaci, S
Kartal, S
AF Karaaslan, Fatih
Mutlu, Mahmut
Mermerkaya, Musa Ugur
Karaoglu, Sinan
Sacmaci, Serife
Kartal, Senol
TI Comparison of bone tissue trace-element concentrations and mineral density in

osteoporotic femoral neck fractures and osteoarthritis
SO CLINICAL INTERVENTIONS IN AGING
LA English
DT Article
DE osteoporosis; trace elements; calcium; magnesium; zinc
ID hip-replacement surgery; postmenopausal osteoporosis; zinc; magnesium; poland; joint; pathogenesis; plasma; copper; femur
AB Purpose: This study examined the role of trace elements in osteoporosis by comparing the trace-element concentrations in bone and the radiographic bone density and bone mineral density (BMD) of patients with osteoporotic femur fractures and osteoarthritis. Patients and methods: The study enrolled 30 patients operated on for proximal femoral fractures after falls, and another 30 patients undergoing hip arthroplasty at the same center for hip osteoarthritis. Bone samples were obtained during the surgical procedures. The density of the bone samples was assessed using computed tomography and the Hounsfield scale. The levels of Ca(II), Mg(II), and other trace elements in the bone samples were determined using flame atomic absorption spectrometry and inductively coupled plasma mass spectrometry. In addition, BMD, Z-scores, and T-scores were measured in the unaffected hips of all patients using dual-energy X-ray absorptiometry. Results: Magnesium (1,908 +/- 507 versus 2,540 +/- 435, P<0.05), calcium (10.4 +/- 3.5 versus 13.9 +/- 3.7, P<0.05), and zinc (2,342 +/- 1,252 versus 3,145 +/- 1,604, P<0.05) mu g g(-1), levels were significantly lower in the bone samples in the fracture group. The groups did not differ in the other biochemical parameters. All dual-energy X-ray absorptiometry findings were significantly worse in the fracture group than in the osteoarthritis group. However, the groups did not differ in femoral neck density assessed radiologically using the Hounsfield scale. The following parameters were negatively correlated with age: magnesium, r=-0.436, P<0.001; calcium, r=-0.331, P=0.01; T-score, r=-0.381, P=0.003; Z-score, r=-0.267, P=0.043; and BMD, r=-0.365, P=0.004. Conclusion: Ca(II), Mg(II), and Zn(II) appear to play important roles in bone breakdown/synthesis. Further studies of the roles of trace elements in the etiology and treatment of osteoporosis are warranted. We found decreased bone levels of Ca, Mg, and Zn in patients with osteoporotic fractures compared to subjects with osteoarthritis.
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NR 42
TC 22
Z9 27
U1 0
U2 6
PU DOVE MEDICAL PRESS LTD
PI ALBANY
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EI
J9 CLIN INTERV AGING
JI Clin. Interv. Aging
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DI 10.2147/CIA.S66354
PG 8
WC Geriatrics & Gerontology
SC Geriatrics & Gerontology
GA AN5EX
UT WOS:000340614200001
PM 25170261
DA 2026-02-10
ER

PT J
AU Sharma, GB

McMahon, PJ
Robertson, DD
AF Sharma, Gulshan B.
McMahon, Patrick J.
Robertson, Douglas D.
TI Structure Modeling of the Glenoid: Relevance to Shoulder Arthroplasty
SO JOURNAL OF ORTHOPAEDIC RESEARCH
LA English
DT Article
DE glenoid; total shoulder arthroplasty; shape modeling; glenoid prosthesis; surgical instrumentation
ID computed-tomography; component; osteoarthritis; replacement; version; shape; reconstruction; instability; surgery; anatomy
AB We applied shape modeling and principal component analysis (PCA) to discover glenoid bone structural relationships relevant to improving glenoid prosthesis features, fixation, and instrumentation. Knowledge of external bone morphology guides prosthesis shape and positioning, while internal bone morphology and bone density influence fixation. CT-based modeling defined nonarthritic glenoid subchondral bone surface and internal structure. First and second principal shape components were related to size and density. Reproducible structural parameters and glenoid feature relationships were discovered. Subchondral bone surface was approximated by a circle inferiorly and a triangle superiorly with the circle's center at a reproducible point along a superior-inferior line. Glenoid vault's maximum depth was at the circle's center, and the highest bone density was in posterior glenoid. Glenoid subchondral bone surface version varied from superior to inferior, but not by sex or side. Male subchondral bone surfaces were larger and more retroverted. Even if subchondral bone surfaces are deformed by arthritis, glenoid morphology can be identified by extra-articular landmarks, permitting location of the glenoid center and scapular orientation (glenoid version). Knowledge obtained from this study directs design of novel prosthesis features and instrumentation for use without pre-op CT or computer aided surgery. (c) 2014 Orthopaedic Research Society. Published by Wiley Periodicals, Inc. J Orthop Res 32:1471-1478, 2014.
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NR 29
TC 10
Z9 11
U1 0
U2 5
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0736-0266
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J9 J ORTHOP RES
JI J. Orthop. Res.
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WC Orthopedics
SC Orthopedics
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PT J
AU Cheng, KY
Lin, WC
Chang, WN
Lin, TK
Tsai, NW
Huang, CC
Wang, HC
Huang, YC
Chang, HW
Lin, YJ
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Cheng, Ben-Chung
Kung, Chia-Te
Chang, Ya-Ting
Su, Chih-Min
Chiang, Yi-Fang
Su, Yu-Jih
Lu, Cheng-Hsien
TI Factors associated with fall-related fractures in Parkinson's disease
SO PARKINSONISM & RELATED DISORDERS
LA English
DT Article
DE Fall-related fractures; Idiopathic Parkinson's disease; Risk factors
ID osteoporosis; specificity; sensitivity; prediction; diagnosis; dementia; scale
AB Purpose: Fall-related fracture is one of the most disabling features of idiopathic Parkinson's disease (PD). A better understanding of the associated factors is needed to predict PD patients who will require treatment. Methods: This prospective study enrolled 100 adult idiopathic PD patients. Stepwise logistic regressions were used to evaluate the relationships between clinical factors and fall-related fracture. Results: Falls occurred in 56 PD patients, including 32 with fall-related fractures. The rate of falls in the study period was 2.2 +/- 1.4 per 18 months. The percentage of osteoporosis was 34% (19/56) and 11% in PD patients with and without falls, respectively. Risk factors associated with fall-related fracture were sex, underlying knee osteoarthritis, mean Unified Parkinson's Disease Rating Scale score, mean Morse fall scale, mean Hoehn and Yahr stage, and exercise habit. By stepwise logistic regression, sex and mean Morse fall scale were independently associated with fall-related fracture. Females had an odds ratio of 3.8 compared to

males and the cut-off value of the Morse fall scale for predicting fall-related fracture was 72.5 (sensitivity 72% and specificity 70%). Discussion: Higher mean Morse fall scales (>72.5) and female sex are associated with higher risk of fallrelated fractures. Preventing falls in the high-risk PD group is an important safety issue and highly relevant for their quality of life. (C) 2013 Elsevier Ltd. All rights reserved.
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NR 20
TC 35
Z9 42
U1 0
U2 16
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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J9 PARKINSONISM RELAT D
JI Parkinsonism Relat. Disord.
PD JAN 15
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IS 1
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DI 10.1016/j.parkreldis.2013.09.024
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WC Clinical Neurology
SC Neurosciences & Neurology
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AU Akune, T
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TI Incidence of certified need of care in the long-term care insurance system and its risk factors in the elderly of Japanese population-based cohorts: The ROAD study
SO GERIATRICS & GERONTOLOGY INTERNATIONAL
LA English
DT Article
DE activities of daily living; certification of need of care (youkaigo-nintei); disability; long-term care insurance system; prospective cohort study
ID body-mass index; radiographic knee osteoarthritis; disability; association; predictor; health; age
AB AimTo examine the incidence of certified need of care in the national long-term care insurance (LTCI) system, and to determine its risk factors in the elderly of Japanese population-based cohorts of the Research on Osteoarthritis/Osteoporosis Against Disability (ROAD) study. MethodsOf the 3040 participants in the baseline examination of the ROAD study, we enrolled 1773 (699 men, 1074 women) aged 65years or older who were not certified as in need of care level elderly at baseline. Participants were followed for incident certification of need of care in the LTCI system. Associated factors in the baseline examination with occurrence were determined by multivariate Cox proportional hazards regression analysis. Muscle dysfunction was defined in accordance with the European Working Group on Sarcopenia in Older People algorithm for screening sarcopenia. ResultsA total of 54 men and 115 women were certified as in need of care level elderly during the

average 4.0-year follow up. The incidence was 2.0 and 2.5 per 100 person-years in men and women, respectively. Identified risk factors were region, age, body mass index <18.5 or 27.5kg/m(2), grip strength, knee extension torque, usual gait speed, chair stand time and muscle dysfunction. ConclusionsBoth underweight and obesity, as well as low muscle strength and physical ability, are risk factors for certification of need of care. Considering muscle dysfunction is a risk factor for occurrence, screened individuals are recommended to receive early intervention programs regardless of muscle volume. Geriatr Gerontol Int 2014; 14: 695-701.
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NR 26
TC 70
Z9 85
U1 0
U2 28
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 1444-1586
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J9 GERIATR GERONTOL INT
JI Geriatr. Gerontol. Int.
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WC Geriatrics & Gerontology; Gerontology
SC Geriatrics & Gerontology
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PT J
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TI Prevalence of hallux valgus and risk factors among Japanese community dwellers
SO JOURNAL OF ORTHOPAEDIC SCIENCE
LA English
DT Article
ID randomized controlled-trial; foot pain; knee osteoarthritis; elderly persons; heberdens nodes; osteo-arthrosis; older persons; disability; women; association
AB To investigate the prevalence and severity of radiographically detected hallux valgus (HV) as well as associated risk factors among Japanese residents of Miyagawa, a mountain village located in the center of Mie Prefecture. The height, weight and body mass index (BMI) of 403 participants (male n = 135, female n = 268) recruited from among the residents of Miyagawa Village, Japan aged a parts per thousand yen65 years were measured, and baseline data, including age, sex and medical history were obtained from interviews and questionnaires. Knee osteoarthritis (KOA) was determined from radiographs of the feet and knees, and osteoporosis was determined by measuring bone mineral density. Hallux valgus, defined as angulation of the big toe at the first metatarsophalangeal joint of > 20A degrees, was classified as: mild (20A degrees aEuro"30A degrees), moderate (30A degrees aEuro"40A degrees) or severe (> 40A degrees). Risk factors for HV were calculated using multivariate logistic regression analysis that included age, sex, obesity (BMI a parts per thousand yen25), KOA, osteoporosis, Heberden's nodes and low back pain as variables. The overall prevalence of definite radiographic HV was 22.8 % (184/806), and mild, moderate and severe HV was found in 66.3, 27.2 and 6.5 % of the participants, respectively. Hallux valgus was found in at least one foot in 120 (29.8 %) of the participants and the prevalence significantly differed between females with and without HV and KOA (odds ratios: 2.54 and 1.71, respectively). The prevalence of definite radiographic HV was 29.8 %. Female sex and KOA were significantly associated with increased risk for radiographic HV.

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NR 37
TC 37
Z9 46
U1 0
U2 9
PU ELSEVIER SCIENCE BV
PI AMSTERDAM
PA PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
SN 0949-2658
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J9 J ORTHOP SCI
JI J. Orthop. Sci.
PD MAR 15
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BP 257
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DI 10.1007/s00776-013-0513-z
PG 6
WC Orthopedics
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GA AD3HS
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PT J
AU Loeser, RF
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Chubinskaya, S
AF Loeser, Richard F.
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Chubinskaya, Susan
TI Aging and Oxidative Stress Reduce the Response of Human Articular Chondrocytes to Insulin-like Growth Factor 1 and Osteogenic Protein 1
SO ARTHRITIS & RHEUMATOLOGY
LA English
DT Article
ID factor-i; proteoglycan synthesis; matrix synthesis; cartilage; osteoarthritis; expression; stimulation; homeostasis; senescence; survival
AB Objective. To determine the effects of aging and oxidative stress on the response of human articular chondrocytes to insulin-like growth factor 1 (IGF-1) and osteogenic protein 1 (OP-1). Methods. Chondrocytes isolated from normal articular cartilage obtained from tissue donors were cultured in alginate beads or monolayer. Cells were stimulated with 50-100 ng/ml of IGF-1, OP-1, or both. Oxidative stress was induced using tert-butyl hydroperoxide. Sulfate incorporation was used to measure proteoglycan synthesis, and immunoblotting of cell lysates was performed to analyze cell signaling. Confocal microscopy was performed to measure nuclear translocation of Smad4. Results. Chondrocytes isolated from the articular cartilage of tissue donors ranging in age from 24 years to 81 years demonstrated an age-related decline in proteoglycan synthesis stimulated by IGF-1 and IGF-1 plus OP-1. Induction of oxidative stress inhibited both IGF-1- and OP-1-stimulated proteoglycan synthesis. Signaling studies showed that oxidative stress inhibited IGF-1-stimulated Akt phosphorylation while increasing phosphorylation of ERK, and that these effects were greater in cells from older donors. Oxidative stress also increased p38 phosphorylation, which resulted in phosphorylation of Smad1 at the Ser(206) inhibitory site and reduced nuclear accumulation of Smad1. Oxidative stress also modestly reduced OP-1-stimulated nuclear translocation of Smad4. Conclusion. These results demonstrate an age-related reduction in the response of human chondrocytes to IGF-1 and OP-1, which are 2 important anabolic factors in cartilage, and suggest that oxidative stress may be a contributing factor by altering IGF-1 and OP-1 signaling.
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NR 33
TC 77
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U1 0
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J9 ARTHRITIS RHEUMATOL
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WC Rheumatology
SC Rheumatology
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TI Life-long caloric restriction does not alter the severity of age-related osteoarthritis
SO AGE
LA English
DT Article
DE Osteoarthritis; Bone density; Synovitis; Inflammation; Osteoporosis
ID lifetime food restriction; high-fat diet; knee osteoarthritis; adipose-tissue; mechanical-property; mice; obesity; bone; alignment; body
AB Chronic adipose tissue inflammation and its associated adipokines have been linked to the development of osteoarthritis (OA). It has been shown that caloric restriction may decrease body mass index and adiposity. The objectives of this study were to investigate the effect of lifelong caloric restriction on bone morphology, joint inflammation, and spontaneously occurring OA development in aged mice. C57BL/NIA mice were fed either a calorie-restricted (CR) or ad libitum (AL) diet starting at 14 weeks of age. All mice were sacrificed at 24 months of age. Adipose tissue and knee joints were then harvested. Bone parameters of the joints were analyzed by micro-CT. OA and joint synovitis were determined using histology and semiquantitative analysis. Lifelong caloric restriction did not alter the severity of OA development in C57BL/NIA aged mice, and there was no difference in the total joint Mankin score between CR and AL groups ($p=0.99$). Mice also exhibited similar levels of synovitis ($p=0.54$). The bone mineral density of the femur and the tibia was comparable between the groups with a small increase in cancellous bone volume fraction in the lateral femoral condyle of the CR group compared with the AL group. Lifelong caloric restriction did not alter the incidence of OA or joint synovitis in C57BL/NIA mice, indicating that a reduction of caloric intake alone was not sufficient to prevent spontaneous age-related OA. Nonetheless, early initiation of CR continued throughout a life span did not negatively impact bone structural properties.
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NR 45
TC 17
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U1 0
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AU Wang, CJ
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AF Wang, Ching-Jen
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Cheng, Jai-Hong
TI Extracorporeal shockwave therapy in osteoporotic osteoarthritis of the knee in rats: an experiment in animals
SO ARTHRITIS RESEARCH & THERAPY
LA English
DT Article
ID bone-mineral density; subchondral bone; chondrocyte apoptosis; articular-cartilage; shows; rabbits; damage; hip; progression; expression
AB Introduction: This study investigated the effectiveness of extracorporeal shockwave therapy (ESWT) in osteoporotic (OP) osteoarthritis (OA) of rat knee. Methods: Fifty-six rats were divided into seven groups including sham, OA, OP, OA + OP, OA + ESWT, OP + ESWT, and OA + OP + ESWT groups. The evaluations included gross pathology, bone mineral density (BMD), micro-computed tomography (micro-CT) scan, bone-strength test, histopathologic examination, and immunohistochemical analysis. Results: On gross pathology, group OA + OP showed larger areas of osteoarthritic changes than did groups OA and OP, as compared with the sham group. BMD and bone strength significantly decreased in groups OA, OP, and OA + OP relative to the sham group, and ESWT significantly improved BMD and bone-strength changes. On micro-CT scan, the subchondral plate thickness significantly decreased, and the bone porosity increased in groups OA, OP, and OA + OP, and ESWT significantly improved the changes in subchondral-plate thickness and bone porosity. In histopathologic examination, Mankin score and safranin O score significantly increased in groups OA and group OA + OP, but not in group OP relative to the sham group, and ESWT significantly

improved the changes. In immunohistochemical analysis, Dickkopf-1 (DKK-1) significantly increased, but vessel endothelial growth factor (VEGF), proliferating cell nuclear antigen (PCNA), and bone morphogenetic protein 2 (BMP-2) decreased in groups OA, OP, and OA + OP relative to the sham group, and ESWT significantly reversed the changes. Conclusions: Osteoporosis increased the severity of cartilage damage in osteoarthritis of the knee. ESWT showed effectiveness in the reduction of osteoporotic osteoarthritis of the knee in rats.
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10.1007/s00402-012-1586-4
NR 37
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PU BIOMED CENTRAL LTD
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TI Ultrasonographic assessment of the femoral cartilage in osteoarthritis patients with and without osteoporosis
SO AGING CLINICAL AND EXPERIMENTAL RESEARCH
LA English
DT Article
DE Osteoarthritis; Osteoporosis; Femoral cartilage; Ultrasound; Bone mineral density
ID bone-mineral density; knee osteoarthritis; spine osteoarthritis; fractures; rotterdam; exercise; validity; volume; women; risk
AB Background The relationship between osteoporosis (OP) and osteoarthritis (OA) is yet unclear. Aim To evaluate the possible effect of OP on the femoral cartilage thickness in female patients with knee OA. Materials and methods Eighty patients with a diagnosis of knee OA were enrolled. Forty subjects who also had OP comprised Group I and the remaining 40 OA subjects comprised Group II. Antero-posterior knee radiographs were obtained in standing position and they were evaluated according to Kelgren-Lawrence (K-L) grading scale. Femoral cartilage evaluations were performed using a linear array US probe (7-12 MHz). In addition, ultrasonographic femoral cartilage grading was also performed for each

knee. Results Left knee scores pertaining to both gradings were found to be lower (p = 0.02, p = 0.04, respectively) in Group I when compared with those of Group II. The two grading scores were positively correlated for both knees-statistically significant only for the right side (r = 0.727, p = 0.01). No significant difference was found between the groups in terms of femoral cartilage thicknesses (all p = 0.05). Discussion Ultrasonographic and roentgenographic gradings were consistent and patients with OP had lower scores for both gradings. On the other hand, the presence of OP did not seem to have any effect on cartilage thickness measurements. Conclusions To the best knowledge of the authors, this study is the first to have explored the impact of OP on OA using US in the literature.
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TI Decomposition of in vivo spatially offset Raman spectroscopy data using multivariate analysis techniques
SO JOURNAL OF RAMAN SPECTROSCOPY
LA English
DT Article
DE SORS; multivariate curve resolution; BTEM; bone; in vivo
ID entropy minimization btem; fiberoptic array; turbid media; subsurface; fluorescence; spectra; probe
AB The decomposition of spatially offset Raman spectra for complex multilayer systems, such as biological tissues, requires advanced techniques such as multivariate analyses. Often, in such situations, the decomposition methods can reach their limits of accuracy well before the limits imposed by signal-to-noise ratios. Consequently, more effective reconstruction methods could yield more accurate results with the same data set. In this study we process spatially offset Raman spectroscopy (SORS) data with three different multivariate techniques (band-target entropy minimization (BTEM), multivariate curve resolution and parallel factor analysis (PARAFAC)) and compare their performance when analysing a spectrally challenging plastic model system and an even more challenging problem, the analysis of human bone transcutaneously in vivo. For the in vivo measurements, PARAFAC's requirement of multidimensional orthogonal data is addressed by recording SORS spectra both at different spatial offsets and at different anatomical points, the latter providing added dimensionality through the variation of skin/soft tissue thickness. The BTEM and PARAFAC methods performed the best on the plastic system with the BTEM more faithfully reconstructing the major Raman bands and PARAFAC the smaller more heavily overlapped features. All three methods succeeded in reconstructing the bone spectrum from the transcutaneous data and gave good figures for the phosphate-to-carbonate ratio (within 2% of excised human tibia bone); the PARAFAC gave the most accurate figure for the mineral-to-collagen ratio (20% less than excised human tibia bone). Previous studies of excised bones have shown that certain bone diseases (such as osteoarthritis, osteoporosis and osteogenesis imperfecta) are accompanied by compositional abnormalities that can be detected with Raman spectroscopy, the utility of a technique which could reconstruct bone spectra accurately is manifest. The results have relevance on the use of SORS in general. (c) 2014 Crown copyright.

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Yao X, 2010, 39 M AM ASS DENT RES, V0, P0
NR 31
TC 44
Z9 48
U1 2
U2 59
PU WILEY-BLACKWELL
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0377-0486
EI 1097-4555
J9 J RAMAN SPECTROSC
JI J. Raman Spectrosc.
PD FEB 15
PY 2014
VL 45
IS 2
BP 188
EP 192
DI 10.1002/jrs.4434
PG 5
WC Spectroscopy
SC Spectroscopy
GA 304BQ
UT WOS:000330720800007
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ER

PT J
AU Steel, N
Hardcastle, AC
Clark, A

Mounce, LTA
Bachmann, MO
Richards, SH
Henley, WE
Campbell, JL
Melzer, D
AF Steel, Nick
Hardcastle, Antonia C.
Clark, Allan
Mounce, Luke T. A.
Bachmann, Max O.
Richards, Suzanne H.
Henley, William E.
Campbell, John L.
Melzer, David
TI Self-reported quality of care for older adults from 2004 to 2011: a cohort study
SO AGE AND AGEING
LA English
DT Article
DE quality of care; geriatrics; epidemiology; older people
ID medical-record; performance; indicators; outcm; england; pay
AB Background: little is known about changes in the quality of medical care for older adults over time. Objective: to assess changes in technical quality of care over 6 years, and associations with participants' characteristics. Design: a national cohort survey covering RAND Corporation-derived quality indicators (QIs) in face-to-face structured interviews in participants' households. Participants: a total of 5,114 people aged 50 or more in four waves of the English Longitudinal Study of Ageing. Methods: the percentage achievement of 24 QIs in 10 general medical and geriatric clinical conditions was calculated for each time point, and associations with participants' characteristics were estimated using logistic regression. Results: participants were eligible for 21,220 QIs. QI achievement for geriatric conditions (cataract, falls, osteoarthritis and osteoporosis) was 41% [95% confidence interval (CI): 38-44] in 2004-05 and 38% (36-39) in 2010-11. Achievement for general medical conditions (depression, diabetes mellitus, hypertension, ischaemic heart disease, pain and cerebrovascular disease) improved from 75% (73-77) in 2004-05 to 80% (79-82) in 2010-11. Achievement ranged from 89% for cerebrovascular disease to 34% for osteoarthritis. Overall achievement was lower for participants who were men, wealthier, infrequent alcohol drinkers, not obese and living alone. Conclusion: substantial system-level shortfalls in quality of care for geriatric conditions persisted over 6 years, with relatively small and inconsistent variations in quality by participants' characteristics. The relative lack of variation by participants' characteristics suggests that quality improvement interventions may be more effective when directed at healthcare delivery systems rather than individuals.
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FU National Institute for Health Research (NIHR) Health Services and Delivery Research Programme [HS&DR Project 10/2002/06]; US National Institute on Aging; UK government departments; National Institute on Aging [R01AG017644] Funding Source: NIH RePORTER; National Institute for Health Research [10/2002/06] Funding Source: researchfish
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NR 17
TC 9
Z9 9
U1 0
U2 9
PU OXFORD UNIV PRESS
PI OXFORD

PA GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND
SN 0002-0729
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J9 AGE AGEING
JI Age Ageing
PD SEP 15
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VL 43
IS 5
BP 716
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PG 6
WC Geriatrics & Gerontology
SC Geriatrics & Gerontology
GA AQ4ES
UT WOS:000342746700023
PM 25015897
DA 2026-02-10
ER

PT J
AU Ohta, H
Uemura, Y
Nakamura, T
Fukunaga, M
Ohashi, Y
Hosoi, T
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Sugimoto, T
Ltoi, E
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TI Serum 25-Hydroxyvitamin D Level as an Independent Determinant of Quality of Life in Osteoporosis With a High Risk for Fracture
SO CLINICAL THERAPEUTICS
LA English
DT Article
DE 25(OH)D; fall; fracture; osteoporosis; QOL
ID vitamin-d status; back-pain; vertebral fractures; controlled-trial; fall prevention; older women; mortality; bone; supplementation; questionnaire
AB Background: Deteriorated quality of life (QOL) is a major problem in osteoporotic women. However, little is known regarding the determinants of QOL in patients with osteoporosis. Objective: Our aim was to explore the role of vitamin D status on QOL score in osteoporosis with high fracture risk. Methods: Patients were osteoporotic women aged >= 70 years and with >= 1 risk factor for incident fracture, namely prevalent osteoporotic fracture, bone mineral density (BMD) >-3.0 SD of young adult mean, or high bone turnover marker. Health-related QOL was assessed using the Japanese Osteoporosis Quality of Life Questionnaire (JOQOL). When patients were classified into quartiles by total QOL score). Serum 25-hydroxyvitamin D (25[OH]D) level was measured by immunoassay. Results: A total of 1585 osteoporotic women were included in the study (age range, 70-95 years). Age, body mass index, serum 25(OH)D status (low, normal, or high), bone mineral density, number of prevalent vertebral fractures, presence of hypertension, presence of osteoarthritis, and history of falls were significantly correlated with QOL quartile. Multivariate liner regression analysis indicated that low serum 25(OH)D level (<20 ng/mL) was an independent determinant of total QOL score quartile (P = 0.0055). The conventional determinants of QOL age (P < 0.0001), body mass index (P = 0.0060), number of prevalent vertebral fractures (P < 0.0001), presence of osteoarthritis (P = 0.0074), and history of fall (P = 0.0098) were also independent determinants of total QOL score. Conclusions: These results strongly suggest that low serum 25(OH)D level was a significant determinant of QOL in these osteoporotic women, independently of the conventional factors that reduce QOL. Maintenance of serum 25(OH)D levels >20 ng/mL may be required to maintain patients' QOL in osteoporosis. (C) 2014 The Authors. Published by Elsevier, Inc. All rights reserved.
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NR 50
TC 24
Z9 29
U1 0
U2 6
PU ELSEVIER
PI BRIDGEWATER

PA 685 ROUTE 202-206, BRIDGEWATER, NJ 08807 USA
SN 0149-2918
EI 1879-114X
J9 CLIN THER
JI Clin. Ther.
PD FEB 15
PY 2014
VL 36
IS 2
BP 225
EP 235
DI 10.1016/j.clinthera.2013.12.007
PG 11
WC Pharmacology & Pharmacy
SC Pharmacology & Pharmacy
GA AC2TE
UT WOS:000332356100010
PM 24462224
DA 2026-02-10
ER

PT J
AU Calderazzi, F
Groppi, G
Ricotta, A
Ceccarelli, F
AF Calderazzi, Filippo
Groppi, Giulia
Ricotta, Agostino
Ceccarelli, Francesco
TI Does hip osteoarthritis have a protective effect against proximal femoral fractures? A retrospective study
SO HIP INTERNATIONAL
LA English
DT Article
DE Hip; Osteoarthritis; Femoral neck fractures; Trochanteric fractures
ID bone-mineral density; cancellous bone; neck fracture; osteoporosis; femur; coxarthrosis; pattern; end
AB The inverse relationship between proximal femoral fracture incidence and hip osteoarthritis remains controversial. However, femoral neck fractures rarely occur in patients with hip osteoarthritis, suggesting a protective effect of osteoarthritis. We sought to determine if the severity of osteoarthritis influenced fracture type. We examined the radiographs of 190 consecutive patients treated at our institution after hip trauma. They were divided into three groups according to the outcome of

the trauma: femoral neck fracture; trochanteric fracture; and no fracture. We then analysed the severity of osteoarthritis within these groups. No relationship between the grade of hip osteoarthritis and the presence of a proximal femoral fracture was found. However, the grade of osteoarthritis was related both to the outcome of the trauma ($p<0.0001$) and to the location of the fracture ($p<0.0001$). Patients with osteoarthritis of the hip had a three-fold increased likelihood of trochanteric fracture compared to femoral neck fracture. Osteoarthritis does not protect against proximal femoral fractures, but strongly affects the location of the fracture in the proximal femur, increasing the possibility of a trochanteric location.
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NR 19
TC 14
Z9 17
U1 0

U2 2
PU WICHTIG EDITORE
PI MILAN
PA 72/74 VIA FRIULI, 20135 MILAN, ITALY
SN 1120-7000
EI 1724-6067
J9 HIP INT
JI Hip Int.
PD MAY-JUN 15
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IS 3
BP 231
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WC Orthopedics
SC Orthopedics
GA AT0QM
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PT J
AU Im, NK
Lee, SG
Lee, DS
Park, PH
Lee, IS
Jeong, GS
AF Im, Nam-Kyung
Lee, Sung-Gyu
Lee, Dong-Sung
Park, Pil-Hoon
Lee, In-Seon
Jeong, Gil-Saeng
TI Spatholobus suberectus Inhibits Osteoclastogenesis and Stimulates Chondrogenesis
SO AMERICAN JOURNAL OF CHINESE MEDICINE
LA English
DT Article
DE Spatholobus suberectus; Osteoarthritis; Osteoporosis; Osteoclast; Matrix Metalloproteinases (MMPs)

ID human chondrocytes; in-vitro; osteoarthritis; cartilage; differentiation; expression; cytokine; collagen; receptor; model
AB This study was carried out to investigate the effect of Spatholobus suberectus Dunn (SS) on the protection of chondral defect and inhibition of osteoclastogenesis. To examine these effects, we measured the matrix metalloproteinase (MMP) levels in SW1353 chondrosarcoma cells and performed tartrate-resistant acid phosphatase (TRAP) staining in bone marrow macrophage (BMM)-derived osteoclasts. To investigate the anti-osteoarthritis (OA) effects, we assessed TNF-alpha-induced MMP-1, -3, -9 and tissue inhibitors of matrix metalloproteinase (TIMP) expression levels in SW1353 cells. We observed that SS extract significantly inhibited MMP and TIMP expression in SW1353 cells. Also, SS extract inhibited the receptor activator of nuclear factor-kappa B ligand (RANKL)-induced osteoclast differentiation. These results suggest that SS extract may have a potential in the treatment of bone loss and chondral defect by suppressing osteoclast differentiation and decreasing the expression of OA factors. Therefore, clarification of the mechanism of the action of SS extract and its active components is needed.
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U2 19
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PA 5 TOH TUCK LINK, SINGAPORE 596224, SINGAPORE
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WC Integrative & Complementary Medicine; Medicine, General & Internal
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PT J
AU Soon, EL
bin Abd Razak, HR
Tan, CS
Tan, HCA
AF Soon, En Loong
bin Abd Razak, Hamid Rahmatullah
Tan, Chuen Seng
Tan, Hwee Chye Andrew
TI Postoperative Range of Motion Does Not Correlate with Patient Reported Outcome Scores in Asians after Total Knee Arthroplasty
SO JOURNAL OF ARTHROPLASTY
LA English
DT Article
DE range of motion; outcomes; PROMs; Asian
ID functional outcm; satisfaction; replacement; osteoarthritis; epidemiology; hip
AB Activities in Asian cultures require greater knee flexion. However, this study hypothesized that post-operative range of motion (ROM) does not correlate with

patient reported outcome scores at 2 years. 292 TKAs were evaluated at a public hospital in Singapore from January 2006 to May 2009. The relationship between ROM and outcome scores was examined using a multiple linear regression model with Generalized Estimating Equation (GEE) allowing adjustment for confounders and repeated TKAs within a patient. Analysis did not yield statistically significant results when patients' post-op ROM was correlated with outcome scores at 2 years. Lack of post op ROM does not translate into poorer outcome scores and dissatisfaction. Doctors can now counsel patients who are concerned about a lack of ROM after TKA. (C) 2014 Elsevier Inc. All rights reserved.
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AU Chen, FP
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Chen, Fun-Jou
TI Chinese herbal prescriptions for osteoarthritis in Taiwan: analysis of national health insurance dataset
SO BMC COMPLEMENTARY AND ALTERNATIVE MEDICINE
LA English
DT Article
DE Association rule; Chinese herbal medicine; National health insurance; Osteoarthritis; Pharmaco-epidemiology; Traditional Chinese medicine
ID ovx-induced osteoporosis; bu drynaria-fortunei; knee osteoarthritis; radix-dipsaci; medicine; extract; bone; patterns; obesity; inflammation
AB Background: Chinese herbal medicine (CHM) has been commonly used for treating osteoarthritis in Asia for centuries. This study aimed to conduct a large-scale pharmaco-epidemiologic study and evaluate the frequency and patterns of CHM used in treating osteoarthritis in Taiwan. Methods: A complete database (total 22,520,776 beneficiaries) of traditional Chinese medicine (TCM) outpatient claims offered by the National Health Insurance program in Taiwan for the year 2002 was employed for this research. Patients with osteoarthritis were identified according to the diagnostic code of the International Classification of Disease among claimed visiting files. Corresponding prescription files were analyzed, and an association rule was applied to evaluate the co-prescription of CHM for treating osteoarthritis. Results: There were 20,059 subjects who visited TCM clinics for osteoarthritis and received a total of 32,050 CHM prescriptions. Subjects between 40 and 49 years of age comprised the largest number of those treated (19.2%), followed by 50-59 years (18.8%) and 60-69 years group (18.2%). In addition, female subjects used CHMs for osteoarthritis more frequently than male subjects (female: male = 1.89: l). There was an average of 5.2 items prescribed in the form of either an individual Chinese herb or formula in a single CHM prescription for osteoarthritis. Du-zhong (Eucommia bark) was the most commonly prescribed Chinese single herb, while Du-huo-ji-sheng-tang was the most commonly prescribed Chinese herbal formula for osteoarthritis. According to the association rule, the most commonly prescribed formula was Du-huo-ji-sheng-tang plus Shen-tong-zhu-yu-tang, and the most commonly prescribed triple-drug combination was Du-huo-ji-sheng-tang, Gu-sui-pu (Drynaria fortune (Kunze) J. Sm.), and Xu-Duan (Himalaya teasel). Nevertheless, further clinical trials are needed to evaluate the efficacy and safety of these CHMs for treating osteoarthritis. Conclusions: This study conducted a large scale pharmaco-epidemiology survey of Chinese herbal medicine use in OA patients by analyzing the NHIRD in Taiwan in year 2002.
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PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
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AU Hoekman, P
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AF Hoekman, Patrick
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Hayatou, Mahamadou Malam
TI Hip Arthrodesis with the Anterolateral Plate: An Innovating Technique for an Orphaned Procedure
SO PLOS ONE
LA English
DT Article
ID follow-up; fusion; tuberculosis; osteotomy; arthroplasty; replacement; joint

AB Background: In developing countries hip osteoarthritis constitutes a major public health issue as it is highly prevalent in all age ranges of population, including the young. It often remains untreated because of the low accessibility of total hip prostheses. Hip arthrodesis still represents a major treatment option, but, for several reasons which are discussed in this paper, is nowadays infrequently performed. By means of reporting the results of a new simple technique, using a self-devised plate, the relevancy of hip arthrodesis in this particular environment is emphasized. Methods and Findings: Our series included 35 patients with painful hip osteoarthritis who underwent a hip fusion with the anterolateral arthrodesis plate. Two of them had a concurrent femoral osteotomy for correction of a vicious position of the limb and another patient had a femoral diaphysis osteotomy and placement of a Wagner elongating device in order to proceed with a limb lengthening by callotasis. The follow-up period averaged 16,9 months (9 to 34). All hips, except two, achieved solid fusion between 6 and 15 months after surgery. One failure of fusion was in the oldest patient, who presented a loosening of plate and screws due to an advanced degree of osteoporosis; the other was in a young patient who admitted having walked on his leg too soon. Patient satisfaction was high. We concluded that this technique is reliable and effective. Conclusions: The results of this study should convince the hesitant surgeon and patient to consider hip arthrodesis an acceptable treatment option for disabling hip arthritis, compared to no treatment at all.
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PT J
AU Bekkers, S
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AF Bekkers, Stijn
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Makarawung, Dennis
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Ring, David
TI The National Hospital Discharge Survey and Nationwide Inpatient Sample: The Databases Used Affect Results in THA Research
SO CLINICAL ORTHOPAEDICS AND RELATED RESEARCH
LA English
DT Article
ID cardiovascular drugs; mortality; complications; arthroplasty; fracture; risk
AB The National Hospital Discharge Survey (NHDS) and the Nationwide Inpatient Sample (NIS) collect sample data and publish annual estimates of inpatient care in the United States, and both are commonly used in orthopaedic research. However, there are important differences between the databases, and because of these differences, asking these two databases the same question may result in different answers. The degree to which this is true for arthroplasty-related research has, to our knowledge, not been characterized. We tested the following null hypotheses: (1) there are no differences between the NHDS and NIS in patient characteristics, comorbidities, and adverse events in patients with hip osteoarthritis treated with THA, and (2) there are no differences between databases in factors associated with inpatient mortality, adverse events, and length of hospital stay after THA. The NHDS and NIS databases use different methods of data collection and weighting to provide data representative of all nonfederal hospital discharges in the United States. In 2006 the NHDS database contained 203,149 patients with hip arthritis treated with hip arthroplasty, and the NIS database included 193,879 patients. Multivariable analyses for factors associated with inpatient mortality, adverse events, and days of care were constructed for each database. We found that 26 of 42 of the factors in demographics, comorbidities, and adverse events after THA in the NIS and NHDS databases differed more than 10%. Age and days of care were associated with inpatient mortality with the NHDS and the NIS although the effect rates differ more than 10%. The NIS identified seven other factors not identified by the NHDS: wound complications, congestive heart failure, new mental disorder, chronic pulmonary disease, dementia, geographic region Northeast, acute postoperative anemia, and sex, that were associated with inpatient mortality even after controlling for potentially confounding variables. For inpatient adverse events,

atrial fibrillation, osteoporosis, and female sex were associated with the NHDS and the NIS although the effect rates differ more than 10%. There were different directions for sources of payment, dementia, congestive heart failure, and geographic region. For longer length of stay, common factors differing more than 10% in effect rate included chronic pulmonary disease, atrial fibrillation, complication not elsewhere classified, congestive heart failure, transfusion, discharge nonroutine compared with routine, acute postoperative anemia, hypertension, wound adverse events, and diabetes mellitus, whereas discrepant factors included geographic region, payment method, dementia, sex, and iatrogenic hypotension. Studies that use large databases intended to be representative of the entire United States population can produce different results, likely related to differences in the databases, such as the number of comorbidities and procedures that can be entered in the database. In other words, analyses of large databases can have limited reliability and should be interpreted with caution. Level II, prognostic study. See the Instructions for Authors for a complete description of levels of evidence.
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PU SPRINGER
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SN 0009-921X
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J9 CLIN ORTHOP RELAT R
JI Clin. Orthop. Rel. Res.
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TI Severe perineal laceration during operative vaginal delivery: the impact of occiput posterior position
SO JOURNAL OF PERINATOLOGY
LA English
DT Article
ID anal-sphincter injury; fetal head position; manual rotation; transverse positions; cesarean delivery; risk-factors; forceps; vacuum
AB OBJECTIVE: To identify risk factors for severe (third/fourth degree) perineal laceration with operative vaginal delivery (OVD, forceps or vacuum). STUDY DESIGN: Case-control study comparing singleton OVDs with or without severe laceration (n=138). RESULT: In multivariable analyses, severe perineal laceration was associated with occiput posterior (OP) position at delivery, vaginal nulliparity, use of forceps, longer period pushing in the second stage and lower gestational age, but not birth weight, labor induction or episiotomy. Among 29 OP patients at full dilation, 9/13 (69%) attempted rotations to occiput anterior (OA) were successful, and 14/16 (88%) patients in whom rotation was not attempted remained OP at delivery. Successful rotation from OP to OA was associated with fewer severe lacerations than no attempt or unsuccessful rotation (22 vs 75%, P=0.01). CONCLUSION: Severe perineal laceration during OVD is associated with OP position at delivery and is reduced threefold in patients successfully rotated from OP to OA.
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TI Association of dietary intake with joint space narrowing and osteophytosis at the knee in Japanese men and women: the ROAD study
SO MODERN RHEUMATOLOGY
LA English
DT Article

DE Osteoarthritis; Knee; Diet; Cohort studies; Epidemiology
ID growth-arrest; vitamin-d; osteoarthritis; calcification; progression; hip; determinants; expression; arthritis; cartilage
AB Objective. The objective of the present study is to identify dietary nutrients associated with joint space narrowing (JSN) and osteophytosis at the knee in a population-based cohort of the Research on Osteoarthritis/osteoporosis Against Disability (ROAD) study. Methods. From the baseline survey of the ROAD study, 827 participants (305 men and 522 women) in a rural cohort were analyzed. Dietary nutrient intakes for the last month were assessed by a self-administered brief diet history questionnaire. Minimum joint space width (mJSW) and osteophyte area (OPA) in the medial compartment of the knee were measured using a knee osteoarthritis (OA) computer-aided diagnostic system. Results. In men, there were no associations of dietary nutrient intakes with mJSW or OPA. In women, vitamins K, B1, B2, B6, and C were associated with mJSW after adjustment for age, body mass index, and total energy ($p < 0.05$). Vitamins E, K, B1, B2, niacin, and B6 were significantly associated with OPA ($p < 0.05$) in women. Vitamins K, B and C may have a protective role against knee OA in women and might lead to disease-modifying treatments. Conclusions. The present study revealed that low dietary intake of vitamins K, B, and C are associated with JSN and osteophytosis in women.
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TC 19
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U2 5
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PT J
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TI Effects of High-Impact Training on Bone and Articular Cartilage: 12-Month Randomized Controlled Quantitative MRI Study
SO JOURNAL OF BONE AND MINERAL RESEARCH
LA English
DT Article
DE EXERCISE; OSTEOARTHRITIS; OSTEOPOROSIS; MENOPAUSE; RADIOLOGY
ID gadolinium-enhanced mri; knee osteoarthritis; postmenopausal women; controlled-trial; mineral density; risk-factors; exercise; hip; recommendations; adaptation
AB Osteoarthritis and osteoporosis often coexist in postmenopausal women. The simultaneous effect of bone-favorable high-impact training on these diseases is not well understood and is a topic of controversy. We evaluated the effects of high-impact exercise on bone mineral content (BMC) and the estimated biochemical composition of knee cartilage in postmenopausal women with mild

knee osteoarthritis. Eighty women aged 50 to 66 years with mild knee osteoarthritis were randomly assigned to undergo supervised progressive exercise three times a week for 12 months (n=40) or to a nonintervention control group (n=40). BMC of the femoral neck, trochanter, and lumbar spine was measured by dual-energy X-ray absorptiometry (DXA). The biochemical composition of cartilage was estimated using delayed gadolinium-enhanced magnetic resonance imaging (MRI) cartilage (dGEMRIC), sensitive to cartilage glycosaminoglycan content, and transverse relaxation time (T2) mapping that is sensitive to the properties of the collagen network. In addition, we evaluated clinically important symptoms and physical performance-related risk factors of falling: cardiorespiratory fitness, dynamic balance, maximal isometric knee extension and flexion forces, and leg power. Thirty-six trainees and 40 controls completed the study. The mean gain in femoral neck BMC in the exercise group was 0.6% (95% CI, -0.2% to 1.4%) and the mean loss in the control group was -1.2% (95% CI, -2.1% to -0.4%). The change in baseline, body mass, and adjusted body mass change in BMC between the groups was significant (p=0.005), whereas no changes occurred in the biochemical composition of the cartilage, as investigated by MRI. Balance, muscle force, and cardiorespiratory fitness improved significantly more (3% to 11%) in the exercise group than in the control group. Progressively implemented high-impact training, which increased bone mass, did not affect the biochemical composition of cartilage and may be feasible in the prevention of osteoporosis and physical performance-related risk factors of falling in postmenopausal women. (c) 2014 American Society for Bone and Mineral Research.
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NR 45
TC 59
Z9 66
U1 0
U2 34
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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J9 J BONE MINER RES
JI J. Bone Miner. Res.
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PT J
AU Beavers, DP
Beavers, KM
Loeser, RF
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Messier, SP
AF Beavers, D. P.
Beavers, K. M.
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Newman, J. J.
Messier, S. P.
TI The independent and combined effects of intensive weight loss and exercise training on bone mineral density in overweight and obese older adults with osteoarthritis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Bone density; Obesity; Weight loss; Exercise; Osteoarthritis
ID hip fracture risk; knee osteoarthritis; postmenopausal women; body-weight; mass; men; diet; fat; metabolism; sarcopenia
AB Objective: To determine the effects of dietary-induced weight loss (D) and weight loss plus exercise (D + E) compared to exercise alone (E) on bone mineral density (BMD) in older adults with knee osteoarthritis (OA). Design: Data come from 284 older (66.0 +/- 6.2 years), overweight/obese (body mass index (BMI) 33.4 +/- 3.7 kg/m(2)), adults with knee OA enrolled in the Intensive Diet and Exercise for

Arthritis (IDEA) study. Participants were randomized to 18 months of walking and strength training (E; n = 95), dietary-induced weight loss targeting 10% of baseline weight (D; n = 88) or a combination of the two (D + E; n = 101). Body weight and composition (DXA), regional BMD, were obtained at baseline and 18 months. Results: E, D, and D + E groups lost 1.3 +/- 4.5 kg, 9.1 +/- 8.6 kg and 10.4 +/- 8.0 kg, respectively (P < 0.01). Significant treatment effects were observed for BMD in both hip and femoral neck regions, with the D and D + E groups showing similar relative losses compared to E (both P < 0.01). Despite reduced BMD, fewer overall participants had T-scores indicative of osteoporosis after intervention (9 at 18 months vs 10 at baseline). Within the D and D + E groups, changes in hip and femoral neck, but not spine, BMD correlated positively with changes in body weight (r = 0.21 and 0.54 respectively, both P < 0.01). Conclusions: Weight loss via an intensive dietary intervention, with or without exercise, results in bone loss at the hip and femoral neck in overweight and obese, older adults with OA. Although the exercise intervention did not attenuate weight loss-associated reductions in BMD, classification of osteoporosis and osteopenia remained unchanged. Clinical trial registration number: NCT00381290. (C) 2014 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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FU National Institute of Arthritis and Musculoskeletal and Skin Diseases [AR052528]; Wake Forest University Claude D. Pepper Older Americans Independence Center [P30-AG21332]; Arthritis and Musculoskeletal Disease Research Center at Wake Forest School of Medicine; Wake Forest School of Medicine Translational Science Institute; National Institute on Aging [P30AG021332] Funding Source: NIH RePORTER
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NR 46
TC 42
Z9 50
U1 1
U2 38
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
SN 1063-4584
EI 1522-9653
J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD JUN 15
PY 2014
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IS 6
BP 726
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PG 8
WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA AK7HY
UT WOS:000338600600003
PM 24742955

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PT J
AU Blumenfeld, O
Williams, FMK
Valdes, A
Hart, DJ
Malkin, I
Spector, TD
Livshits, G
AF Blumenfeld, Orit
Williams, Frances M. K.
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Malkin, Ida
Spector, Timothy D.
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TI Association of interleukin-6 gene polymorphisms with hand osteoarthritis and hand osteoporosis
SO CYTOKINE
LA English
DT Article
DE Kellgren/Lawrence; Osteophytes; Joint space narrowing; BMD; SNP
ID bone-mineral density; il-6; predictor; variants; women
AB Objective: Several genes, including IL-6 encoding pro-inflammatory cytokines, are involved in development of osteoarthritis and osteoporosis. The association of radiographic hand osteoarthritis (RHOA) and osteoporosis related phenotypes (RHOP) with polymorphisms in IL-6 has been reported inconsistently. The aim of this study was to examine the association, between RHOA and RHOP and IL-6 polymorphisms in two independent samples. Methods: Two samples: UK females, including 1440 individuals assessed for RHOA and 3470 assessed for RHOP; Chuvash pedigree including 1499 females and males were assessed for RHOP and RHOA. SNPs were genotyped in the IL-6 genomic region, and used in association analysis with RHOA and RHOP phenotypes. Results: RHOP phenotypes showed similar heritability estimates in both samples, ranging from 34.5 +/- 5.5% to 61.0 +/- 2.4%. RHOA in Chuvash had substantially lower heritability estimates compared to twins (e.g. OSP scores: 11.8 +/- 2.3% vs. 39.2 +/- 4.1%) with much higher prevalence and considerably stronger correlation with age (r = 0.811 vs. r = 0.505). RHOA in Chuvash sample may be traumatic in nature, caused by heavy and prolonged manual work related to their private farming. There were a number of statistically significant association results with both types of phenotypes. The most consistent result was obtained for JSN in both samples with SNP from the same haploblock. Their combined probability of no association was only p = 0.000003.

Additionally, there were SNPs common for both RHOA and RHOP. Conclusions: We have shown polymorphisms in IL_6 are significantly associated with RHOA and hand RHOP in two samples having different ethnicity and lifestyle. Age x environment x genes interaction appears as an important factor of RHOA manifestation and progression. (C) 2014 Elsevier Ltd. All rights reserved.
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Z9 26
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U2 19
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PA 24-28 OVAL RD, LONDON NW1 7DX, ENGLAND
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WC Biochemistry & Molecular Biology; Cell Biology; Immunology
SC Biochemistry & Molecular Biology; Cell Biology; Immunology
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UT WOS:000340316700014
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PT J
AU Ikegami, S
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TI Unilateral vs Bilateral Hip Bone Mineral Density Measurement for the Diagnosis of Osteoporosis
SO JOURNAL OF CLINICAL DENSITOMETRY
LA English
DT Article
DE Bone mineral density; dual-energy X-ray absorptiometry; femur neck; osteoporosis; sensitivity and specificity
ID for-clinical-densitometry; acetabular dysplasia; official positions; fracture risk; osteoarthritis; prevalence; prediction; guidelines; rotation; japan
AB It has not been established whether unilateral or bilateral hip dual-energy X-ray absorptiometry (DXA) is preferable for the diagnosis of osteoporosis. We investigated the discordance in DXA measurements in bilateral hips to determine whether unilateral DXA is valid for osteoporosis diagnosis. The subjects were 2964 Japanese patients without a previous diagnosis of primary osteoporosis. We measured bilateral femoral bone mineral density (BMD) and calculated indices, related to the unilateral results, for predicting contralateral hip osteoporosis. A likelihood ratio (LR) of a negative test (LR [-]) of less than 0 2 was considered to exclude the diagnosis. In the normal spinal BMD group, the sensitivity of unilateral DXA for women was 27-73% and LR (-) was 0.28-0.73; the sensitivity for men was 0-50% and LR (-) was 0.51-1.00; the diagnosis of contralateral osteoporosis was not excluded. Sensitivity increased and LR (-) increased with worsening spinal BMD

status; however, LR (-) did not meet the cutoff for exclusion. We could exclude unilateral hip osteoporosis, in women only, by performing contralateral femoral DXA; this necessitated lowering the T-score cutoff from -2.5 to -2.0. Unilateral femoral DXA is not useful for excluding the diagnosis of contralateral hip osteoporosis.
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NR 25
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Z9 11
U1 0
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PA 360 PARK AVE SOUTH, NEW YORK, NY 10010-1710 USA
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WC Endocrinology & Metabolism
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PT J
AU van Meer, BL
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TI Bone mineral density changes in the knee following anterior cruciate ligament rupture
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Anterior cruciate ligament; Bone mineral density; Knee trauma; Osteoarthritis
ID subchondral bone; articular-cartilage; marrow lesions; canine models; osteoarthritis; injury; mri; reconstruction; osteoporosis; progression
AB Objective: The pathophysiology of anterior cruciate ligament (ACL) rupture leading to knee osteoarthritis (OA) remains largely unknown. It seems that bone loss occurs after ACL rupture. The purpose of our study was to determine bone mineral density (BMD) changes in the knee after ACL rupture during 2-year follow-up period and to compare BMD changes between the injured and healthy contralateral knee. Design: Patients were included in an observational prospective follow-up study within 6 months after ACL trauma and evaluated for 2 years. Patients were treated operatively or non-operatively. At baseline and at the one- and 2-year follow-ups, BMD was measured in six regions of the tibia and femur for both knees (medial, central, lateral) using a Dual-energy X-ray Absorptiometry (DXA) scanner. Results: One hundred forty-one patients were included, with the following characteristics: 66% were male, median age at baseline was 25.3 (inter-quartile range 11.3) years, and 63% were treated operatively. After 1 year, BMD was significantly lower in all regions of the injured knee of the operatively treated patients compared to baseline. After 2 years, BMD was significantly increased, but remained lower than the baseline levels. In all regions for all measurements, the mean BMD was significantly lower in the injured knee than in the healthy contralateral knee. Conclusions: During a 2-year follow-up period after ACL rupture, the BMD level in the injured knee was found to be lower than in the healthy contralateral knee. In operatively treated patients, the BMD decreased in the first year and increased in the second follow-up year. (C) 2013 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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U1 1
U2 7
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J9 OSTEOARTHR CARTILAGE
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SC Orthopedics; Rheumatology
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PT J
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TI Three-dimensional analysis of gait in postmenopausal women with low bone mineral density
SO JOURNAL OF NEUROENGINEERING AND REHABILITATION
LA English
DT Article

DE Gait; Moment; Power; Bone mineral density; Menopause
ID quality-of-life; physical performance; muscle strength; osteoporosis; fracture; walking; mass; osteoarthritis; association; impairment
AB Background: There's lack in the literature respecting changes in the trunk and hip angles, and power profile of the lower extremities in postmenopausal women with low bone mineral density (BMD). Therefore, this study aimed to examine gait characteristics of that population, and find out which characteristics may be predictors to BMD. This may provide suitable interventions for subjects with osteoporosis. Methods: Seventeen healthy postmenopausal women and seventeen with low BMD engaged in this study. Dual X-ray Absorbiometry measured BMD at lumber (L2-4) and femoral neck. Qualysis gait analysis system assessed the gait pattern of each subject. Results: Compared to healthy peers, women with low BMD showed less trunk rotation ($p = 0.02$), hip adduction ($p = 0.005$) and extension moments ($p = 0.008$). They showed less hip power generation during early stance (H1S) ($p = 0.000$), and swing phase (H3S) ($p = 0.005$), and less hip power absorption (H2S) ($p = 0.005$). They also, showed less knee power absorption during terminal swing (K4S) ($p = 0.002$), and ankle power generation at push off (A2S) ($p = 0.000$). The ability of the gait variables to discriminate between subjects with or without osteopenia was (0.72%, $p = 0.016$) for trunk rotation, (78%, $p = 0.0004$) for hip adductor moment, (76%, $p = 0.0013$) for hip extensor moment, (87%, $p < 0.0001$) for H1S, (79%, $p = 0.0001$) for H2S, (77%, $p = 0.0008$) H3S, (81%, $p = 0.0001$) for K4S, and (93%, $p < 0.0001$) for A2S. Conclusion: Less power generation at the hip and ankle as well as, less power absorption at the hip and knee, may suggest that postmenopausal women with low BMD showed less propulsion, and stability during walking. Trunk rotation, hip adduction and extension moments, H1S, H2S, H3S, K4S, and A2S are significant predictors for low bone mass in the postmenopausal women.
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NR 31
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Z9 22
U1 0
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PU BMC
PI LONDON
PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
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PT J
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TI Hip Osteoarthritis and Osteoporosis: Clinical and Histomorphometric Considerations
SO INTERNATIONAL JOURNAL OF ENDOCRINOLOGY
LA English
DT Article
ID bone-mineral density; postmenopausal women; femoral-neck; stem-cells; fracture; differentiation; angiogenesis; prevalence; expression; knee
AB Although an inverse relationship between osteoarthritis (OA) and osteoporosis (OP) has been shown by some studies, other reports supported their coexistence. To clarify this relationship, we analyzed the interplay between clinical and histomorphometric features. Bone mineral density (BMD) and histomorphometric

structure were assessed in 80 patients of four different age-matched groups undergoing hip arthroplasty for severe OA or OP-related femoral fracture. Harris Hip Score was also performed. Surgical double osteotomy of the femoral head was performed and microscopic bone slice samples analysis was performed by using a BioQuant Osteo software. Bone volume fraction (BV/TV) was lower (P < 0.01) in subjects with femoral neck fracture (20.77 +/- 4.34%) than in subjects with nonosteopenic OA (36.49 +/- 7.73%) or nonosteopenic OA (32.93 +/- 6.83%), whereas no difference was detected between subjects with femoral neck fractures and those with combined OA and OP (20.71 +/- 5.23%). Worse Harris Hip Score was found in those patients with the lowest BMD and BV/TV values. Our data support recent evidences indicating the possibility of impaired bone volume fraction in OA patients, with a high risk of developing OP, likely for their decreased mobility. Further studies are needed in order to investigate biomolecular pathway and/or growth factors involved in bone volume impairment in OA patients.
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NR 33
TC 15
Z9 17
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PU HINDAWI LTD
PI LONDON
PA ADAM HOUSE, 3RD FLR, 1 FITZROY SQ, LONDON, W1T 5HF, ENGLAND
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PT J
AU Kolta, S
Briot, K
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Roux, C.
TI TBS result is not affected by lumbar spine osteoarthritis
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Bone mineral density; BMD; DXA; TBS; Trabecular bone score; Osteoarthritis; Osteoporosis
ID trabecular bone score; x-ray absorptiometry; mineral density; osteoporotic fractures; vertebral fractures; caucasian women; microarchitecture; population; association; projection
AB The effect of lumbar osteoarthritis on bone density and trabecular bone score (TBS) was evaluated cross-sectionally and prospectively in postmenopausal women. Lumbar spine osteoarthritis was graded according to Kellgren and Lawrence grades. Lumbar osteoarthritis was found to increase lumbar spine bone density, but not TBS. Lumbar osteoarthritis overestimates lumbar bone density (areal bone mineral density (aBMD)). A new texture parameter, the TBS, has been proposed. Calculation of aBMD uses grey level value, while TBS uses grey level variation. Therefore, our hypothesis was that TBS is not influenced by lumbar spine osteoarthritis. Menopausal women participating in osteoporosis and ultrasound

(OPUS) study were included. They had an aBMD measurement of the spine and hip at baseline and 6-year visit. TBS was calculated on lumbar spine dual-energy X-ray absorptiometry (DXA) scans in an automated manner. The presence of lumbar osteoarthritis was evaluated on baseline radiographs using Kellgren and Lawrence (K&L) classification. Grades range from 0 to 4. In our study, osteoarthritis was defined by at least K&L grade 2. This study included 1,254 menopausal women (66.7 +/- 7.1 years). Among them, 727 attended the 6-year follow-up visit. Patients with lumbar osteoarthritis had an aBMD higher than those without lumbar osteoarthritis at the lumbar spine, but not at the hip. However, the aBMD significantly increased in all sites with the grade of K&L. In contrast, spine TBS was not different between patients with and without lumbar osteoarthritis ($p = 0.70$), and it was not correlated with K&L grade. Spine TBS and aBMD at all sites were negatively correlated with age ($p < 0.0001$). Body mass index was correlated positively with aBMD and negatively with spine TBS ($p < 0.0001$). The 6-year change of aBMD was significant in the hip and nonsignificant in the lumbar spine. That of TBS was significant, with a 3.3 % decrease ($p < 0.0001$), independent of K&L grade ($p = 0.28$). In postmenopausal women, lumbar osteoarthritis leads to an increase in lumbar spine aBMD. In contrast, spine TBS is not affected by lumbar osteoarthritis.

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Z9 111
U1 0
U2 4
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.

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PT J
AU Lee, DO
Kim, H
Ku, SY
Kim, SH
Kim, JG
AF Lee, Dong Ock
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Kim, Jung Gu
TI Association between Polymorphisms in Sclerostin, Dickkopfs and Secreted Frizzled-Related Protein Genes and Bone Mineral Density in Postmenopausal Korean Women
SO GYNECOLOGIC AND OBSTETRIC INVESTIGATION
LA English
DT Article
DE Bone density; Bone markers; Polymorphism; Wnt antagonists
ID genome-wide association; wnt signaling pathway; vitamin-d-receptor; quantitative traits; hip osteoarthritis; negative regulator; chinese women; osteoporosis; mass; osteoblasts
AB Background/Aims:The purpose of this study was to investigate the association between single nucleotide polymorphisms (SNPs) in sclerostin (SOST), dickkopf (DKK), secreted frizzled-related protein (sFRP) genes and bone mineral density (BMD) in postmenopausal Korean women. Methods:The SOST, Wnt inhibitory factor 1 (WIF1), sFRP1, sFRP2, sFRP3, sFRP4, sFRP5, DKK1, DKK2 and DKK3 polymorphisms were analyzed in 399 postmenopausal Korean women. Serum levels of bone turnover markers were measured, and BMDs at the lumbar spine and

femoral neck were also examined. Results: No significant differences in adjusted BMD at the lumbar spine and femoral neck were noted according to any single and combined polymorphisms measured in SOST, DKKs and sFRPs. However, osteoporosis at the femoral neck was 2.35 times more frequently observed in the AA genotype of the sFRP4 c.958C>A polymorphism compared to the non-AA genotype (95% CI 1.09-5.08, p = 0.03). Also, the CC genotype of the sFRP3 c.970C>G polymorphism had a higher rate of osteoporosis at the femoral neck compared to the GC geno-type (OR 8.47, 95% Cl 1.37-52.63, p = 0.049). Conclusions: Our results suggest that the sFRP3 c.970C>G and sFRP4 c.958C>A polymorphisms may be genetic factors associated with the prevalence of osteoporosis at the femoral neck in postmenopausal Korean women. (C) 2014 S. Karger AG, Basel
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Z9 9
U1 0
U2 7
PU KARGER
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PA ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND
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WC Obstetrics & Gynecology
SC Obstetrics & Gynecology
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PT J
AU Desiderio, V
Tirino, V
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AF Desiderio, Vincenzo
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Papaccio, Gianpaolo
Paino, Francesca
TI Bone defects: Molecular and cellular therapeutic targets
SO INTERNATIONAL JOURNAL OF BIOCHEMISTRY & CELL BIOLOGY
LA English
DT Article
DE Bone disease; Mesenchymal stem cells; Histone deacetylases; Wnt pathway
ID mesenchymal stem-cells; dental-pulp; osteoblast differentiation; skeletogenesis; progenitors; disease; roles; runx2; lrp5; mass
AB Bone defects are one of the most serious pathologies that need tissue regeneration therapies. Studies on mesenchymal stem cells are changing the way we treat bone diseases. MSCs have been used for the treatment of osteogenesis imperfecta, hypophosphatasia, osteonecrosis of the femoral head, osteoporosis, rheumatoid arthritis and osteoarthritis. In this context, it is becoming ever more clear that the future of therapies will be based on the use of stem cells. In this concise review, we highlight the importance of the use of MSCs in bone diseases, focusing on the role of histone deacetylases and Wnt pathways involved in osteogenesis. A better understanding of MSC biology and osteogenesis is needed in order to develop new and targeted therapeutic strategies for the treatment of bone diseases/disorders. (C) 2014 Elsevier Ltd. All rights reserved.
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WC Biochemistry & Molecular Biology; Cell Biology
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PT J
AU Tian, B
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Yu, Y. P.
Zhu, Z. A.
TI OA-4 Inhibits Osteoclast Formation and Bone Resorption via Suppressing RANKL Induced P38 Signaling Pathway
SO CURRENT MEDICINAL CHEMISTRY
LA English
DT Article
DE OA-4; osteoclast formation; osteoclastic bone resorption; osteoporosis; P38 signaling pathway
ID activated protein-kinase; nf-kappa-b; selective inhibitor; receptor activator; atpase inhibitor; gene-expression; differentiation; induction; cells
AB Osteoclasts are one of the key therapeutic targets for a variety of orthopedic diseases such as osteoporosis and osteoarthritis. In this study, we synthesized a novel compound N-(3-(cyclohexylcarbamoyl) phenyl)-1H-indole-2-carboxamide (termed as OA-4) and investigated the effects of OA-4 on the differentiation and function of osteoclasts. OA-4 markedly diminished osteoclast differentiation and osteoclast specific gene expression in a dose-dependent manner. In addition, OA-4 dose-dependently suppressed osteoclastic bone resorption. Furthermore, we found OA-4 attenuated RANKL-induced p38 phosphorylation without affecting JNK or NF-kappa B signaling pathways. Collectively, we synthesized a novel compound OA-4 which can inhibit osteoclast formation and functions via the suppression of p38 signaling pathway.
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PA EXECUTIVE STE Y-2, PO BOX 7917, SAIF ZONE, 1200 BR SHARJAH, U ARAB EMIRATES
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JI Curr. Med. Chem.
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WC Biochemistry & Molecular Biology; Chemistry, Medicinal; Pharmacology & Pharmacy
SC Biochemistry & Molecular Biology; Pharmacology & Pharmacy
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AU Clynes, MA
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Harvey, N. C.
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Cooper, C.
Dennison, E. M.
TI Further evidence of the developmental origins of osteoarthritis: results from the Hertfordshire Cohort Study
SO JOURNAL OF DEVELOPMENTAL ORIGINS OF HEALTH AND DISEASE
LA English
DT Article
DE birth weight; bone; osteoarthritis; programming
ID bone-mineral density; vitamin-d-receptor; radiographic osteoarthritis; birth-weight; knee osteoarthritis; growth; women; mass; classification; osteoporosis
AB Investigators have suggested a link between birth weight and both hand and lumbar spine osteoarthritis (OA). In this study, we sought to extend these observations by investigating relationships between growth in early life, and clinical and radiological diagnoses of OA at the hand, knee and hip, among participants from the Hertfordshire Cohort Study. Data were available for 222 men and 222 women. Clinical OA was defined based on American College of Rheumatology criteria. Radiographs were taken of the knees and hips, and graded for the presence of osteophytes and overall Kellgren and Lawrence (KL) score. Lower weight at year one was associated with higher rates of clinical hand OA (OR 1.396, 95% CI 1.05, 1.85, P = 0.021). Individuals with lower birth weights were more likely to have hip osteophytes (OR 1.512, 95% CI 1.14, 2.00, P = 0.004) and this remained robust after adjustment for confounders. Furthermore, a low weight at one year was also associated with a higher osteophyte number in the lateral compartment of the knee, after adjustment for confounders (OR 1.388, 95% CI 1.01, 1.91, P = 0.043). We have found further evidence of a relationship between early life factors and adult OA. These findings accord with previous studies.
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TI Joint and bone assessment in hand osteoarthritis
SO CLINICAL RHEUMATOLOGY
LA English
DT Review
DE Erosive osteoarthritis; Handosteoarthritis; MRI; Osteoarthritis; Osteoporosis
ID c-reactive protein; erosive osteo-arthritis; individual radiographic features; x-ray radiogrammetry; postmenopausal women; rheumatoid-arthritis; mineral density; interphalangeal osteoarthritis; inflammatory osteoarthritis; generalized osteoarthritis

AB Hand osteoarthritis (OA) is a common disease frequently affecting middle-aged women. Prevalence estimates for OA vary widely depending on the age and sex of the population studied, the assessment tools used, and the specific joint sites analyzed OA is characterized by the degradation of articular cartilage, subchondral bone changes and osteophyte formation at the joint margins leading to joint failure. The pathogenesis of the disease and its evolution are multifactorial involving biomechanical, metabolic, hormonal, and genetic factors. Moreover, the role of inflammation has recently been advanced as pivotal in OA onset and progression. In particular, an uncommon variant of hand OA, erosive hand OA, is characterized by inflammatory and degenerative interphalangeal proximal and distal joints. The diagnosis of different types of hand OA is centered on clinical and laboratory investigations which can distinguish the peculiar aspects of these forms. Joint and bone assessments in hand OA are widely studied but there is no agreement with regard to established parameters to make a definitive diagnosis. This report focuses on the laboratory and clinimetric assessments that can be used to distinguish hand OA subtypes and addresses the debatable association with low bone mineral density in osteoporosis.
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TI An algorithm recommendation for the management of knee osteoarthritis in Europe and internationally: A report from a task force of the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO)
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE Algorithm; Knee osteoarthritis
ID nonsteroidal antiinflammatory drugs; placebo-controlled trials; proton-pump inhibitor; double-blind; long-term; glucosamine sulfate; oarsi recommendations; chondroitin sulfate; cardiovascular risk; hyaluronic-acid
AB Objectives: Existing practice guidelines for osteoarthritis (OA) analyze the evidence behind each proposed treatment but do not prioritize the interventions in a given sequence. The objective was to develop a treatment algorithm recommendation that is easier to interpret for the prescribing physician based on the available evidence and that is applicable in Europe and internationally. The knee was used as the model OA joint. Methods: ESCEO assembled a task force of 13 international experts (rheumatologists, clinical epidemiologists, and clinical scientists). Existing guidelines were reviewed: all interventions listed and recent evidence were retrieved using established databases. A first schematic flow chart with treatment prioritization was discussed in a 1-day meeting and shaped to the treatment algorithm. Fine-tuning occurred by electronic communication and three

consultation rounds until consensus. Results: Basic principles consist of the need for a combined pharmacological and non-pharmacological treatment with a core set of initial measures, including information access/education, weight loss if overweight, and an appropriate exercise program. Four multimodal steps are then established. Step 1 consists of background therapy, either non-pharmacological (referral to a physical therapist for realignment treatment if needed and sequential introduction of further physical interventions initially and at any time thereafter) or pharmacological. The latter consists of chronic Symptomatic Slow-Acting Drugs for OA (e.g., prescription glucosamine sulfate and/or chondroitin sulfate) with paracetamol at-need; topical NSAIDs are added in the still symptomatic patient. Step 2 consists of the advanced pharmacological management in the persistent symptomatic patient and is centered on the use of oral COX-2 selective or non-selective NSAIDs, chosen based on concomitant risk factors, with intra-articular corticosteroids or hyaluronate for further symptom relief if insufficient. In Step 3, the last pharmacological attempts before surgery are represented by weak opioids and other central analgesics. Finally, Step 4 consists of end-stage disease management and surgery, with classical opioids as a difficult-to-manage alternative when surgery is contraindicated. Conclusions: The proposed treatment algorithm may represent a new framework for the development of future guidelines for the management of OA, more easily accessible to physicians. (C) 2014 The Authors. Published by Elsevier HS journals, Inc.

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Z9 438
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PT J
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Mirza, SB
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TI Baseline bone mineral density and bone turnover in pre-operative hip and knee arthroplasty patients
SO BONE & JOINT RESEARCH
LA English
DT Article
DE Arthroplasty; Hip; Knee; Bone mineral density; BMD
ID follow-up; osteoarthritis; fracture; revision; risk
AB Aims Osteoporosis and abnormal bone metabolism may prove to be significant factors influencing the outcome of arthroplasty surgery, predisposing to complications of aseptic loosening and peri-prosthetic fracture. We aimed to investigate baseline bone mineral density (BMD) and bone turnover in patients

about to undergo arthroplasty of the hip and knee. Methods We prospectively measured bone mineral density of the hip and lumbar spine using dual-energy X-ray absorptiometry (DEXA) scans in a cohort of 194 patients awaiting hip or knee arthroplasty. We also assessed bone turnover using urinary deoxypyridinoline (DPD), a type I collagen crosslink, normalised to creatinine. Results The prevalence of DEXA proven hip osteoporosis (T-score <= -2.5) among hip and knee arthroplasty patients was found to be low at 2.8% (4 of 143). Spinal osteoporosis prevalence was higher at 6.9% (12 of 175). Sixty patients (42% (60 of 143)) had osteopenia or osteoporosis of either the hip or spine. The mean T-score for the hip was -0.34 (SD 1.23), which is within normal limits, and the mean hip Z-score was positive at 0.87 (SD 1.17), signifying higher-than-average BMD for age. The median urinary DPD/creatinine was raised in both female patients at 8.1 (interquartile range (IQR) 6.6 to 9.9) and male patients at 6.2 (IQR 4.8 to 7.5). Conclusions Our results indicate hip and knee arthroplasty patients have higher BMD of the hip and spine compared with an age-matched general population, and a lower prevalence of osteoporosis. However, untreated osteoporotic patients are undergoing arthroplasty, which may negatively impact their outcome. Raised DPD levels suggest abnormal bone turnover, requiring further investigation.
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NR 19
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Z9 38
U1 0
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PA 22 BUCKINGHAM STREET, LONDON WC2N 6ET, ENGLAND
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PT J
AU Ipseiz, N
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TI Adopted orphans as regulators of inflammation, immunity and skeletal homeostasis
SO SWISS MEDICAL WEEKLY
LA English
DT Review
DE inflammation; nuclear receptors; bone; macrophages; osteoblasts; osteoclasts; arthritis
ID proliferator-activated-receptor; nf-kappa-b; liver-x-receptors; collagen-induced arthritis; allergic contact-dermatitis; ppar-gamma agonists; dendritic cell-function; nuclear receptors; gene-expression; bone-marrow
AB Adopted orphan nuclear receptors, such as peroxisome proliferator-activated receptors (PPARs) and liver X receptors (LXRs), have emerged as key regulators of inflammation and immunity and likewise control skeletal homeostasis. These properties render them attractive targets for the therapy of various inflammatory and autoimmune diseases affecting the musculoskeletal system. This review summarises the current knowledge on the role of these families of receptors during innate and adaptive immunity as well as during the control of bone turnover and discuss the potential use of targeting these molecules during the treatment of chronic diseases such as osteoarthritis, rheumatoid arthritis and osteoporosis.
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TI Analysis of predisposing factors in elderly people with Type II odontoid fracture
SO SPINE JOURNAL
LA English
DT Article
DE Upper cervical spine injury; Elderly; Osteoarthritis; Degenerative change; Type II odontoid fracture
ID cervical-spine injury; older; osteoarthritis; prevalence; age
AB BACKGROUND CONTEXT: Type II odontoid fracture is the most frequent individual fracture in elderly people. An older person usually sustains a Type II odontoid fracture in a fall from standing or a seated height. A relationship between osteoarthritis in the upper cervical spine and Type II odontoid fracture has been reported. However, to our knowledge, few reports have investigated statistically whether disproportionate degeneration between joints influences the susceptibility to fracture. PURPOSE: The purpose of this study was to assess predisposition to Type II odontoid fracture in the elderly. STUDY DESIGN: Retrospective review of elderly patients sustained Type II odontoid fracture and other axis fractures. PATIENT SAMPLE: Thirty-eight patients aged 65 years and older with axis fractures. OUTCOME MEASURES: Evaluation of computed tomography findings by focusing on osteoporosis and the disproportion in degeneration between each of the upper cervical joints (atlantooccipital, atlantoodontoid, and lateral atlantoaxial joints). METHODS: Seventeen patients had a Type II odontoid fracture, and 21 patients had other axis fractures. Using the computed tomography findings, we classified osteoporosis at the dens-body junction and the severity of degenerative changes in the atlantoodontoid, atlantooccipital, and lateral atlantoaxial joints as none, mild, moderate, or severe. The proportion of patients with moderate or severe osteoporosis and degenerative changes in each joint and that of patients with disproportionate degenerative changes between joints (difference in grade of >= 2 levels between joints) were compared statistically. The authors report no conflict of interest concerning the materials or methods used in this study or the findings specified in this article. RESULTS: Patients with osteoporosis and with disproportionate degenerative changes between the atlantoodontoid and lateral atlantoaxial joints were significantly more likely to have a Type II odontoid fracture than other axis fractures. These two factors were also assessed in multivariate logistic analysis. The disproportionate degenerative change between the atlantoodontoid and lateral atlantoaxial joint remained significant, even after adjusting for osteoporosis. CONCLUSIONS: Older patients with the dens fixed to the atlas because of degeneration of the atlantoodontoid joint and a smooth lateral atlantoaxial joint seem to sustain Type II odontoid fractures because, during a simple fall, the rotation of the head produces torque force on the osteoporotic dens-body junction, which acts as the rotatory center. The presence of the disproportionate osteoarthritic degeneration between the atlantoodontoid and lateral atlantoaxial joints predisposes older people to a Type II odontoid fracture.
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TI Understanding risks and complications in the management of ankle fractures
SO INDIAN JOURNAL OF ORTHOPAEDICS
LA English
DT Review
DE Key words: Ankle fractures; complications; diabetes; elderly; posttraumatic ankle osteoarthirits MeSH terms: Ankle injuries; osteoarthritis; elderly; fractures; diabetes
ID posterior malleolar fractures; deep-vein thrombosis; surgical-treatment; internal-fixation; foot; thromboprophylaxis; immobilization; dislocations; reduction; diabetics
AB Ankle fracture (AF) is a common injury with potentially significant morbidity associated with it. The most common age groups affected are young active patients, sustaining high energy trauma and elderly patients with comorbidities. Both these groups pose unique challenges for appropriate management of these injuries. Young patients are at risk of developing posttraumatic osteoarthritis, with a significant impact on quality of life due to pain and impaired function. Elderly patients, especially with poorly controlled diabetes and osteoporosis are at increased risk of wound complications, infection and failure of fixation. In the most severe cases, this can lead to amputation and mortality. Therefore, individualized approach to the management of AF is vital. This article highlights commonly encountered complications and discusses the measures needed to minimize them

when dealing with these injuries.
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TI The relationship between osteoarthritis and osteoporosis
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DE Osteoarthritis; Osteoporosis; Relationship; Incidence; Progression
ID bone-mineral density; radiographic knee osteoarthritis; growth-factor-i; postmenopausal women; subchondral bone; hip osteoarthritis; cancellous bone; hand osteoarthritis; general-population; femoral-head
AB The relationship between osteoarthritis (OA) and osteoporosis (OP), the two most common skeletal disorders related to aging, is controversial. Previous studies suggest that OA is inversely related to OP when studied cross-sectionally and systematically. However, there are differences in the results depending on the parameter used to define OA. The purpose of this review is to analyze and summarize the literature, and derive possible answers to three key questions along with a brief introduction on underlying mechanisms: (1) Is OA correlated to a high bone mineral density (BMD)? (2) Does OA influence the progression of OP or osteoporotic fractures? (3) Does high BMD affect the incidence and progression of OA? A review of the literature suggests that OA is inversely related to OP in general when studied cross-sectionally and systematically. However, when analyzed in

individual bones, the BMD of the appendicular skeleton in OA-affected joints may decrease, particularly in the upper extremities. On whether OA influences bone loss or osteoporotic fractures, differences are observed according to the affected joints. The risk for osteoporotic fracture does not seem to decrease despite a high BMD in patients with OA, probably due to postural instability and muscle strength. Low BMD at the lumbar spine is associated with a lower incidence of knee OA although it does not arrest the progression of knee OA.
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TI Analyses on the mechanisms that underlie the chondroprotective properties of calcitonin
SO BIOCHEMICAL PHARMACOLOGY
LA English
DT Article
DE Cartilage; Apoptosis; Calcitonin receptor; Anabolism; Osteoarthritis
ID human osteoarthritic chondrocytes; human articular chondrocytes; subchondral trabecular bone; breast-cancer-cells; cartilage in-vivo; adenylate-cyclase; salmon-calcitonin; postmenopausal osteoporosis; recombinant calcitonin; strontium ranelate
AB Introduction: Calcitonin (CT) has recently been shown to display chondroprotective effects. Here, we investigate the putative mechanisms by which CT delivers these actions. Methods: Immortalized C-28/I2 cells or primary adult human articular chondrocytes (AHAC) were cultured in high-density micromasses to investigate: (i) CT anabolic effects using qPCR and immuhistochemistry analysis; (ii) CT anti-apoptotic effects using quantitation of Bax/Bcl gene products ratio, TUNEL assay and caspase-3 expression; (iii) CT effects on CREB, COL2A1 and NFAT transcription factors. Results: CT (10(-10)-10(-8) nM) induced significant up-regulation of cartilage phenotypic markers (SOX9, COL2A1 and ACAN), with down-regulation of catabolic (MMP1 and MMP13 and ADAMTS5) gene products both in resting and inflammatory conditions. This was mirrored by an augmented production of type II collagen and accumulation of glycosaminoglycan- and proteoglycan-rich extracellular matrix in vitro. Mechanistic analyses revealed only partial involvement of cyclic AMP formation in these effects of CT. Congruently, using reporter assays for specific transcription factors, there was no indication for CREB activation, whereas the COL2A1 promoter was genuinely and directly activated by cell exposure to CT. Phenotypically, these mechanisms supported the ability of CT, whilst inactive on its own, to counteract the pro-apoptotic effects of IL-1 beta, demonstrated by TUNEL-positive staining of chondrocytes and ratio of BAX/BCL genes products. Conclusion: These data may provide a novel lead for the development of CT-based chondroprotective strategies that rely on the

engagement of mechanisms that lead to augmented chondrocyte anabolism and inhibited chondrocyte apoptosis. (C) 2014 Elsevier Inc. All rights reserved.
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AF Briggs, Andrew M.
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TI Models of care for musculoskeletal health in Australia: now more than ever to drive evidence into health policy and practice
SO AUSTRALIAN HEALTH REVIEW
LA English
DT Article
ID systematic analysis; global burden; pain; osteoarthritis; management; arthritis; injury; diseases
AB Musculoskeletal health conditions such as arthritis, osteoporosis and pain syndromes impart a profound socioeconomic burden worldwide, particularly in developed nations such as Australia. Despite the identified burden, substantial evidence-practice and care disparity gaps remain in service delivery and access that limit the potential for improved consumer outcomes and system efficiencies. Addressing these gaps requires a whole-of-sector response, supported by evidence-informed health policy. Models of care (MoCs) serve as a policy vehicle to embed evidence into health policy and guide practice through changes in service delivery systems and clinician behaviour. In Australia, MoCs for musculoskeletal health have been developed by networks of multidisciplinary stakeholders and are incrementally being implemented across health services, facilitated by dedicated policy units and clinical champions. A web of evidence is now emerging to support this approach to driving evidence into health policy and practice. Understanding the vernacular of MoCs and the development and implementation of MoCs is important to embracing this approach to health policy.
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NR 28
TC 47
Z9 50
U1 0
U2 8
PU CSIRO PUBLISHING
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PA UNIPARK, BLDG 1, LEVEL 1, 195 WELLINGTON RD, LOCKED BAG 10, CLAYTON, VIC 3168, AUSTRALIA
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J9 AUST HEALTH REV
JI Aust. Health Rev.
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WC Health Care Sciences & Services; Health Policy & Services
SC Health Care Sciences & Services
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UT WOS:000341651200007
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ER

PT J
AU Reis, C
de Queiroz, MV
AF Reis, Catia
de Queiroz, Mario Viana
TI Prevalence of self-reported rheumatic diseases in a portuguese population
SO ACTA REUMATOLOGICA PORTUGUESA
LA English
DT Article
DE Epidemiology; Self-report; Rheumatic diseases
ID epidemiology; burden
AB Objectives: With this study we attempted to estimate the prevalence of

self-reported rheumatic diseases in a Portuguese population. It was also our objective to evaluate the influence of the variables sex and age on the prevalence of these diseases. Patients and Methods: The study population was comprised of 297 individuals from a total of 573 random telephone numbers selected from the city of Lisbon telephone book (landline/residents). Those 297 were the ones that agreed to answer the proposed questionnaire. Results: The prevalence value of self-reported rheumatic diseases was 26.3%. A prevalence value of self-declared osteoarthritis of 21.2% was found, 7.7% for osteoporosis, 1.3% for rheumatoid arthritis and 0.3% each for gout, systemic lupus erythematosus, Behcet's disease and fibromyalgia. An association with the variables sex and age was achieved for the total of rheumatic diseases. The same association was obtained for osteoarthritis and osteoporosis. Conclusions: This study emphasizes the good self-judgment that the inquired population has about their rheumatic diseases, and some of the obtained results are in agreement with the national and worldwide literature.
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NR 24
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Z9 11
U1 0
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PU PUBLISAUDE-EDICOES MEDICAS LDA
PI ALGES
PA ALAMEDA ANTONIO SERGIO 22, 4 B EDIF AMADEO SOUZA-CARDOSO, ALGES, 1495-132, PORTUGAL
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J9 ACTA REUMATOL PORT
JI Acta Reumatol. Port.
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WC Rheumatology
SC Rheumatology
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PT J
AU Chang, CB
Kim, TK
Kang, YG
Seong, SC
Kang, SB
AF Chang, Chong Bum
Kim, Tae Kyun
Kang, Yeon Gwi

Seong, Sang Cheol
Kang, Seung-Baik
TI Prevalence of Osteoporosis in Female Patients with Advanced Knee Osteoarthritis Undergoing Total Knee Arthroplasty
SO JOURNAL OF KOREAN MEDICAL SCIENCE
LA English
DT Article
DE Bone Density; Osteoporosis; Female Knee Osteoarthritis Patient; Arthroplasty; Knee
ID bone-mineral density; body-mass index; total hip; joint replacement; risk-factors; health; population; fractures
AB This study sought to demonstrate bone mineral density (BMD) conditions in elderly female patients with knee osteoarthritis (OA) undergoing total knee arthroplasty (TKA). In addition, we sought to determine whether their BMD conditions differ from those of community-based females without knee OA. Finally we sought to determine whether clinical statuses are related to BMD in the knee OA patients. BMD conditions in 347 female patients undergoing TKA and 273 community-based females were evaluated. Additionally, comparative analyses of BMD between age and body mass index-matched knee OA groups (n=212) and the control groups (n=212) were performed. In the pre-matched knee OA group, regression analyses were performed to determine whether preoperative clinical statuses were related to BMD. Considerable prevalence of coexistent osteoporosis (31%) was found in the pre-matched knee OA patients undergoing TKA. We found no significant differences of the BMD T-scores and the prevalence of osteoporosis between the age and body mass index-matched knee OA and control groups. In the pre-matched knee OA patients, poorer preoperative clinical scores were related to poorer BMD T-scores in the proximal femur and/or lumbar spine. Our study suggests that more attention should be paid to identify and treat osteoporosis in elderly female patients with advanced knee OA undergoing TKA.
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NR 30
TC 30
Z9 41
U1 2
U2 16
PU KOREAN ACAD MEDICAL SCIENCES
PI SEOUL

PA 302 75 DONG DU ICHON, DONG YONGSAN KU, SEOUL 140 031, SOUTH KOREA
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J9 J KOREAN MED SCI
JI J. Korean Med. Sci.
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WC Medicine, General & Internal
SC General & Internal Medicine
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PT J
AU Chen, K
Zhang, N
Ding, L
Zhang, W
Hu, J
Zhu, S
AF Chen, K.
Zhang, N.
Ding, L.
Zhang, W.
Hu, J.
Zhu, S.
TI Early intra-articular injection of alendronate reduces cartilage changes and subchondral bone loss in rat temporomandibular joints after ovariectomy
SO INTERNATIONAL JOURNAL OF ORAL AND MAXILLOFACIAL SURGERY
LA English
DT Article
DE cartilage; subchondral bone; temporomandibular joint; osteoporosis; drug delivery
ID condyle following ovariectomy; drug-delivery; osteoarthritis; model; osteoporosis; degeneration; receptor; erosion; rabbits; mass
AB This study investigated the effects of intra-articular injection of alendronate on

the mandibular condyle in ovariectomized rats. Sixty rats were divided into five groups: ovariectomy with vehicle treatment alone, early alendronate treatment at ovariectomy, late alendronate treatment at 4 weeks after ovariectomy, sham-operation with vehicle treatment, and normal controls. The changes in cartilage and subchondral bone were evaluated by micro-computed tomography, histology, tartrate-resistant acid phosphatase (TRAP) staining, immunohistochemistry, and real-time quantitative polymerase chain reaction. Compared with late alendronate treatment, early alendronate treatment completely inhibited cartilage thickening (727.6 +/- 39.3 vs. 1013.3 +/- 51.6; P = 0.017) and improved microstructural properties of the subchondral bone, with a higher bone volume ratio (46.4 +/- 2.5 vs. 37.5 +/- 2.1; P = 0.038), trabecular thickness (47.3 +/- 1.7 vs. 34.6 +/- 1.4; P = 0.029), and trabecular number (8.5 +/- 0.6 vs. 6.2 +/- 0.3; P = 0.041) and lower trabecular separation (30.2 +/- 1.6 vs. 37.7 +/- 2.6; P = 0.034). Fewer TRAP-positive cells (4.2 +/- 0.2 vs. 6.8 +/- 0.4; P = 0.019) and a higher OPG/RANKL ratio (0.38 +/- 0.01 vs. 0.25 +/- 0.03; P = 0.043) in the subchondral bone were observed in the animals with early treatment compared to late treatment or ovariectomy/vehicle treatment. In addition, early alendronate treatment blocked the up-regulation of matrix metalloproteinase (MM?)-13 expression in the chondrocytes, whereas late alendronate treatment attenuated the up-regulation of MMP-13 expression. Our results suggest the therapeutic potential of intra-articular alendronate injection in the treatment of osteoporosis-associated temporomandibular disorders.
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NR 30
TC 26
Z9 27
U1 0
U2 14
PU CHURCHILL LIVINGSTONE
PI EDINBURGH
PA JOURNAL PRODUCTION DEPT, ROBERT STEVENSON HOUSE, 1-3 BAXTERS PLACE, LEITH WALK, EDINBURGH EH1 3AF, MIDLOTHIAN, SCOTLAND
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JI Int. J. Oral Maxillofac. Surg.
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SC Dentistry, Oral Surgery & Medicine; Surgery
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ER

PT J
AU Lindner, C
Wallis, GA
Cootes, TF
AF Lindner, C.
Wallis, G. A.
Cootes, T. F.
TI Increasing shape modelling accuracy by adjusting for subject positioning: An application to the analysis of radiographic proximal femur symmetry using data from the Osteoarthritis Initiative
SO BONE
LA English
DT Article
DE Statistical shape model; Hip morphology; Preoperative planning; Total hip arthroplasty; Osteoarthritis; Osteoporosis
ID total hip-replacement; bilateral asymmetry; progression; prediction; length; oa
AB In total hip arthroplasty, the shape of the contra-lateral femur frequently serves as a template for preoperative planning. Previous research on contra-lateral femoral symmetry has been based on conventional hip geometric measurements (which reduce shape to a series of linear measurements) and did not take the effect of subject positioning on radiographic femur shape into account. The aim of this study was to analyse proximal femur symmetry based on statistical shape models (SSMs) which quantify global femoral shape while also adjusting for differences in subject positioning during image acquisition. We applied our recently developed fully automatic shape model matching (FASMM) system to automatically segment the proximal femur from AP pelvic radiographs to generate SSMs of the proximal femurs of 1258 Caucasian females (mean age: 61.3 SD = 9.0). We used a combined SSM (capturing the left and right femurs) to identify and adjust for shape variation attributable to subject positioning as well as a single SSM (including all femurs as left femurs) to analyse proximal femur symmetry. We also calculated conventional

hip geometric measurements (head diameter, neck width, shaft width and neck-shaft angle) using the output of the FASMM system. The combined SSM revealed two modes that were clearly attributable to subject positioning. The average difference (mean point-to-curve distance) between left and right femur shape was 1.0 mm before and 0.8 mm after adjusting for these two modes. The automatic calculation of conventional hip geometric measurements after adjustment gave an average absolute percent asymmetry of within 3.1% and an average absolute difference of within 1.1 mm or 2.9 degrees for all measurements. We conclude that (i) for Caucasian females the global shape of the right and left proximal femurs is symmetric without isolated locations of asymmetry; (ii) a combined left-right SSM can be used to adjust for radiographic shape variation due to subject positioning; and (iii) adjusting for subject positioning increases the accuracy of predicting the shape of the contra-lateral hip. (C) 2014 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by-nc-nd/3.0/).
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FU Medical Research Council, UK [G1000399-1/1]; National Institutes of Health, a branch of the Department of Health and Human Services [N01-AR-2-2258, N01-AR-2-2259, N01-AR-2-2260, N01-AR-2-2261, N01-AR-2-2262]; Merck Research Laboratories; Novartis Pharmaceuticals Corporation; GlaxoSmithKline; Pfizer, Inc.; Medical Research Council [973611] Funding Source: researchfish
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Zeggini E, 2012, LANCET, V380, P815, DOI 10.1016/S0140-6736(12)60681-3
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TC 10
Z9 11
U1 0
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PU ELSEVIER SCIENCE INC
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SN 8756-3282
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J9 BONE
JI Bone
PD APR 15
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WC Endocrinology & Metabolism

SC Endocrinology & Metabolism
GA AC8WL
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ER

PT J
AU Orth, P
Cucchiarini, M
Wagenpfeil, S
Menger, MD
Madry, H
AF Orth, P.
Cucchiarini, M.
Wagenpfeil, S.
Menger, M. D.
Madry, H.
TI PTH [1-34]-induced alterations of the subchondral bone provoke early osteoarthritis
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE PTH [1-34]; Osteochondral unit; Early osteoarthritis; Articular cartilage; Subchondral bone; Femoral head
ID parathyroid-hormone 1-34; articular-cartilage defects; in-vivo; rabbit knee; progression; repair; model; histopathology; osteoporosis; chondrocytes
AB Objective: To test the hypothesis that changes in the subchondral bone induced by parathyroid hormone (PTH [1-34]) reciprocally affect the integrity of the articular cartilage within a naive osteochondral unit in vivo. Design: Daily subcutaneous injections of 10 mu g PTH [1-34]/kg were given to adult rabbits for 6 weeks, controls received saline. Blood samples were continuously collected to monitor renal function. The subchondral bone plate and subarticular spongiosa of the femoral heads were separately assessed by micro-computed tomography. Articular cartilage was evaluated by macroscopic. and histological osteoarthritis scoring, polarized light microscopy, and immunohistochemical determination of type-I, type-II, type-X collagen contents, PTH [1-34] receptor and caspase-3 expression. Absolute and relative extents of hyaline and calcified articular cartilage layers were measured histomorphometrically. The correlation between PTH-induced changes in subchondral bone and articular cartilage was determined. Results: PTH [1-34] enhanced volume, mineral density, and trabecular thickness within the subarticular spongiosa, and increased thickness of the calcified cartilage layer (all $P < 0.05$). Moreover, PTH [1-34] led to cartilage surface irregularities and reduced matrix staining (both $P < 0.03$). These early osteoarthritic changes correlated with and

were ascribed to the increased thickness of the calcified cartilage layer (P = 0.026) and enhanced mineral density of the subarticular spongiosa (P = 0.001). Conclusions: Modifications of the subarticular spongiosa by PTH [1-34] cause broadening of the calcified cartilage layer, resulting in osteoarthritic cartilage degeneration. These findings identify a mechanism by which PTH-induced alterations of the normal subchondral bone microarchitecture may provoke early osteoarthritis. (C) 2014 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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TC 33
Z9 38
U1 0
U2 9
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JI Osteoarthritis Cartilage
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SC Orthopedics; Rheumatology
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PT J
AU Erdem, E
AF Erdem, Erkan
TI Prevalence of Chronic Conditions Among Medicare Part A Beneficiaries in 2008 and 2010: Are Medicare Beneficiaries Getting Sicker?
SO PREVENTING CHRONIC DISEASE
LA English
DT Article
AB Introduction Medicare beneficiaries who have chronic conditions are responsible for a disproportionate share of Medicare fee-forservice expenditures. The objective of this study was to analyze the change in the health of Medicare beneficiaries enrolled in Part A (hospital insurance) between 2008 and 2010 by comparing the prevalence of ii chronic conditions. Methods We conducted descriptive analyses using the 2008 and 2010 Chronic Conditions Public Use Files, which are newly available from the Centers for Medicare and Medicaid Services and have administrative (claims) data on 100% of the Medicare fee-for-service

population. We examined the data by age, sex, and dual eligibility (eligibility for both Medicare and Medicaid). Results Medicare Part A beneficiaries had more chronic conditions on average in 2010 than in 2008. The percentage increase in the average number of chronic conditions was larger for dual-eligible beneficiaries (2.8%) than for nondual-eligible beneficiaries (1.2%). The prevalence of some chronic conditions, such as congestive heart failure, ischemic heart disease, and stroke/transient ischemic attack, decreased. The deterioration of average health was due to other chronic conditions: chronic kidney disease, depression, diabetes, osteoporosis, rheumatoid arthritis/osteoarthritis. Trends in Alzheimer's disease, cancer, and chronic obstructive pulmonary disease showed differences by sex or dual eligibility or both. Conclusion Analyzing the prevalence of ii chronic conditions by using Medicare claims data provides a monitoring tool that can guide health care providers and policy makers in devising strategies to address chronic conditions and rising health care costs.
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Unknown -, 2019, INT CLASS DIS, V0, P0
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NR 13
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U1 0
U2 0
PU CENTERS DISEASE CONTROL
PI ATLANTA
PA 1600 CLIFTON RD, ATLANTA, GA 30333 USA
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EI
J9 PREV CHRONIC DIS
JI Prev. Chronic Dis.
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IS
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DI 10.5888/pcd11.130118
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WC Public, Environmental & Occupational Health
SC Public, Environmental & Occupational Health
GA AR3XD
UT WOS:000343521600002
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PT J
AU Yang, Y
Bhandari, KH
Panahifar, A
Doschak, MR
AF Yang, Yang
Bhandari, Krishna H.
Panahifar, Arash
Doschak, Michael R.
TI Synthesis, Characterization and Biodistribution Studies of 125I-Radioiodinated di-PEGylated Bone Targeting Salmon Calcitonin Analogue in Healthy Rats
SO PHARMACEUTICAL RESEARCH
LA English
DT Article
DE biodistribution; HPLC; osteoporosis; radio-iodination; sCT-2(PEG-BP)
ID bisphosphonate conjugation; polyethylene-glycol; imaging agent; delivery; dosimetry; receptors; proteins
AB The objective of this study was to prepare a bisphosphonate (BP) mediated bone targeting di-PEGylated salmon calcitonin analogue sCT-2(PEG-BP) as a novel bone targeting pharmaceutical. HPLC was used for isolation of sCT-2(PEG-BP) from the reaction mixture, followed by determination of possible PEGylation sites by trypsin digestion. Stability of the compound over time, bone mineral affinity using hydroxyapatite, and biodistribution in normal rats after radiolabeling of sCT-2(PEG-BP) or control sCT with I-125 was evaluated. PEGylated sCT analogues were synthesized, and sCT-2(PEG-BP) was isolated by HPLC and confirmed by MALDI-TOF and ICP-MS. MALDI-TOF analysis of trypsinized fragments suggested Cys(1) (or Lys(11)) and Lys(18) to be the two PEGylation sites. Bone mineral affinity test showed sCT-2(PEG-BP) or I-125-sCT-2(PEG-BP) exhibited significantly increased bone mineral affinity over sCT or I-125-sCT, respectively. sCT-2(PEG-BP)

remained stable for at least 1 month. In vivo biodistribution study showed significantly increased bone retention and prolonged plasma circulation time for sCT-2(PEG-BP) compared to the control sCT. Those results support sCT-2(PEG-BP) as a promising new drug candidate for the treatment of resorptive and/or maladaptive bone conditions, such as Osteoporosis, Osteoarthritis, Rheumatoid Arthritis, Paget's disease and bone cancers.
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10.1016/0169-409X(95)00023-Z
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WC Chemistry, Multidisciplinary; Pharmacology & Pharmacy
SC Chemistry; Pharmacology & Pharmacy
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PT J
AU Zaghloul, A
Haddad, B

Barksfield, R
Davis, B
AF Zaghloul, Ahmed
Haddad, Behrooz
Barksfield, Richard
Davis, Ben
TI Early complications of surgery in operative treatment of ankle fractures in those over 60: A review of 186 cases
SO INJURY-INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED
LA English
DT Review
DE Ankle fracture; Elderly; Surgery; Outcomes; Complications
ID internal-fixation; open reduction; epidemiology; management
AB Introduction: Ankle fractures are among the most common injuries of the lower extremity encountered by orthopaedic surgeons. With increasing population age and osteoporosis, the prevalence of these fractures is expected to increase. The aim of this study was to evaluate complications and the need for revision surgery after the surgical treatment of ankle fractures in patients over 60 years of age. We report the outcomes of 186 consecutive patients who underwent operative treatment for rotational ankle fractures in our institution from 2007 to 2010. Materials and methods: Data were collected retrospectively for the purpose of this study. The outcome measures included minor complications which did not need further surgical intervention, that is, superficial wound infections, delayed wound healing, prominent implants and skin irritation, and major complications that prompted surgical intervention (due to deep wound infection, loosening of implants or loss of fixation). Medical complications were also recorded. Long-term complications (postoperative osteoarthritis) were not assessed in this study. Logistic regression analysis and Fisher's exact test were used to identify factors predicting higher risk of complications. Results: The average age was 70.67 years (standard deviation (SD) 7.40). There were 132 (71%) females and 54 (29%) males. The overall rate of complications was 21.5% with 10.8% of them being major complications prompting surgical intervention for wound washout, removal of implants and revision of fixation. Statistical analysis showed that smoking, age, diabetes, local factors (osteopaenia, peripheral neuropathy, peripheral vascular disease, lymphoedema and venous insufficiency) and modified Charlson score were significantly associated with occurrence of complications. Gender had a marginally significant effect. Coronary artery disease and fracture type (Weber classification) did not have a significant effect on the outcome. Discussion and conclusion: Our data show that surgical treatment of ankle fractures in the elderly is associated with a high rate of complications. The factors predicting a high rate of complications include smoking, age, diabetes, local factors and a higher modified Charlson score. It is important to bear the factors in mind whilst deciding whether surgical treatment should be used in the treatment of such fractures in the elderly and explains these to patients at the time of obtaining consent. Further large-scale studies are needed to validate

the predictive value of the suggested modified Charlson score. (C) 2013 Elsevier Ltd. All rights reserved.
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NR 27
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U1 0
U2 20
PU ELSEVIER SCI LTD
PI OXFORD
PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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WC Critical Care Medicine; Emergency Medicine; Orthopedics; Surgery
SC General & Internal Medicine; Emergency Medicine; Orthopedics; Surgery
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PT J
AU Chan, MY
Center, JR
Eisman, JA
Nguyen, TV
AF Chan, M. Y.

Center, J. R.
Eisman, J. A.
Nguyen, T. V.
TI Bone mineral density and association of osteoarthritis with fracture risk
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Fracture risk; Osteoporosis; Bone mineral density; BMI
ID radiographic knee osteoarthritis; femoral-neck; postmenopausal women; hip osteoarthritis; trabecular bone; elderly-men; osteoporosis; incident; progression; prevalence
AB Objective: High body mass index (BMI) is associated with increased risk of osteoarthritis (OA) and reduced risk of fragility fracture. However, the relationship between fragility fracture and OA remained unclear. This study sought to investigate the effect of bone mineral density (BMD) in the OA-fracture relationship. Methods: Data from 2412 women and 1452 men aged >45 years in the Dubbo Osteoporosis Epidemiology Study (DOES) were analyzed. Individuals have been followed for up to 22 years (median: 7.5 years; range: 0.1-22 years). Femoral neck BMD (FNBMD) and lumbar spine BMD (LSBMD) was measured by dual energy X-ray absorptiometry (DXA) (GE LUNAR, Madison, WI). The presence of OA was ascertained at baseline by self-reported diagnosis. The incidence of low-trauma fracture was ascertained from X-ray reports. Results: Overall, 29% of women and 26% of men had reported a diagnosis of OA. Fracture risk was significantly higher in women with OA than those without OA (Hazard ratio (HR) = 1.50; 95% confidence interval (CI), 1.28-1.76). However, the association was mainly observed in women with osteopenic BMD (HR = 1.74; 95% CI, 1.38-2.17) and normal-BMD (HR = 1.50; 95% CI, 1.06-2.13) and not in those with osteoporosis. Further analysis revealed that osteopenic women with OA had significant increase in risk of vertebral (HR = 1.85; 95% CI, 1.24-2.75) and limb fracture (HR = 2.49; 95% CI, 1.77-3.48), but not in hip fracture. In men, no comparable relationship was found before and after adjustment for covariates. Conclusion: Women with OA have an increased risk of fragility fracture, and the risk was mainly observed in non-osteoporotic group. (C) 2014 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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TI Vitamin K: Novel molecular mechanisms of action and its roles in osteoporosis
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DT Review
DE -glutamyl carboxylase; pregnane X receptor; steroid and xenobiotic receptor; vitaminK
ID gamma-carboxyglutamic acid; xenobiotic receptor sxr; coronary-heart-disease; bone-mineral density; nuclear receptor; hip-fracture; dependent carboxylation; glutamyl carboxylase; extracellular-matrix; dietary-intake
AB VitaminK is a fat-soluble vitamin, which is involved in blood coagulation mediated by maintaining the activity of coagulation factors in the liver. VitaminK also has extrahepatic actions and has been shown to prevent bone fractures in clinical studies. In addition, epidemiological studies suggest that a lack of vitaminK is associated with several geriatric diseases, including osteoporosis, osteoarthritis, dementia and arteriosclerosis. It has also been shown that vitaminK contributes to the prevention and treatment of some kinds of malignancies. Recently, we discovered a novel role for vitaminK as a ligand of the nuclear receptor, steroid and xenobiotic receptor (SXR), and its murine ortholog, pregnane X receptor (PXR). In addition to its established roles as a cofactor of -glutamyl carboxylase (GGCX) in mediating post-transcriptional modifications, vitaminK has a different mode of action mediated by transcriptional regulation of SXR/PXR target genes. Analysis of bone tissue from PXR-deficient mice showed that the bone protective effects of vitaminK are partially mediated by SXR/PXR-dependent signaling. The discoveries of a novel mode of vitaminK action have opened up new possibilities that vitaminK might be useful for prevention or treatment of a variety of diseases that affect the geriatric population. Geriatr Gerontol Int 2014; 14: 1-7.
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Wang, Lin
TI Association of IL-6 G-174C polymorphism with bone mineral density
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE IL-6; Polymorphism; Bone mineral density; Osteoporosis; Caucasian elderly women
ID interleukin-6 gene polymorphism; postmenopausal women; promoter polymorphisms; knee osteoarthritis; sp1 polymorphism; japanese women; mexican women; osteoporosis; metaanalysis; variant
AB Functional polymorphisms in the promoter region of interleukin-6 (IL-6) are known to be involved in bone mineral density (BMD) and the development of

osteoporosis, but the reported results have been inconsistent. Using the meta-analysis approach, the present study is designed to provide a relatively comprehensive picture of the relationship between bone mineral density (BMD) or osteoporosis and polymorphisms in the promoter region of IL-6 (rs1800795 and rs1800796). The difference of bone mineral density (BMD) values between genotypes was examined by mean difference and 95 % confidence intervals (CIs). Association between IL-6 polymorphism and clinical osteoporosis was evaluated by pooled odds ratios (ORs) and 95 % CIs. A total of 13 articles with 11,499 subjects were included in the present study. For -174 (rs1800795), we found that individuals with the G/G genotype had a significantly lower BMD value than those with C/C genotype at femoral neck (0.02 g/cm(2), 95 % CI 0.00-0.03) (p = 0.04) and distal radius (0.01 g/cm(2), 95 %CI 0.01-0.01) (p < 0.0001). However, we did not find a statistically significant difference of BMD at the spine. When analysis was limited to postmenopausal women, similar results were obtained. We further found that the C/C genotype was associated with a reduced risk of osteoporosis compared to G/G genotype, and the pooled OR was 0.72 (95 % CI 0.54-0.95, p = 0.02). In addition, a significant relationship was found between G-634C (rs1800796) polymorphism and distal radius BMD (CC vs. GG: 0.02 g/cm(2), 95 % CI 0.01-0.03; GC vs. GG: 0.02 g/cm(2), 95 % CI 0.00-0.03) in the Asian population. These findings suggest that the CC genotype of IL-6 G-174C polymorphism may be associated with high BMD at femoral neck and distal radius and decreased risk of osteoporosis in the Caucasian population whereas G-634C polymorphism was associated with distal radius BMD in Asians.
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TC 10
Z9 14
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PU SPRINGER JAPAN KK
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TI Telomerase Activity in Articular Chondrocytes Is Lost after Puberty
SO CARTILAGE
LA English
DT Article
DE chondrocyte; telomerase; mesenchymal stem cells
ID mesenchymal stem-cells; age-related-changes; osteogenic protein-1; in-vivo; senescence; osteoarthritis; expression; gene; maintains; expansion
AB Objective: Telomere length and telomerase activity are important indicators of cellular senescence and replicative ability. Loss of telomerase is associated with ageing and the development of osteoarthritis. Implantation of telomerase-positive cells, chondrocytes, or stem cells expressing a normal chondrocyte phenotype is desired for cartilage repair procedures. The objective of this study was to identify at what age chondrocytes and at what passage bone marrow-derived mesenchymal stem cells (MSCs) become senescent based on telomerase activity. The effect of osteogenic protein-1 (OP-1) or interleukin-1 alpha (IL-1 alpha) treatment on telomerase activity in chondrocytes was also measured to determine the response to anabolic or catabolic stimuli. Methods: Articular cartilage was collected from horses (n = 12) aged 1 month to 18 years. Chondrocytes from prepubescent horses (< 15 months) were treated with OP-1 or IL-1 alpha. Bone marrow aspirate from adult horses was collected and cultured for up to 10 days to isolate MSCs. Telomerase activity was measured using the TeloTAGGG Telomerase PCR ELISA kit. Results: Chondrocytes from prepubescent horses were positive for telomerase activity. Treatment with IL-1 alpha resulted in a decrease in chondrocyte telomerase activity; however, treatment with OP-1 did not change telomerase activity. One MSC culture sample was positive for telomerase activity on day 2; all samples were negative for telomerase activity on day 10. Conclusions: These results suggest that chondrocytes from prepubescent donors are potentially more suitable for cartilage repair procedures and that telomerase activity is diminished by anabolic and catabolic cytokine stimulation. If MSCs are utilized in cartilage repair, minimal passaging should be performed prior to implantation.
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TI A reference case for economic evaluations in osteoarthritis: An expert consensus article from the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO)
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE Comparative effectiveness; Cost-effectiveness analysis; Cost utility analysis; Economics; Hip; Hand; Knee; Methods; Reference case; Rheumatic disease; Osteoarthritis; Outcome assessment
ID quality-of-life; evidence based recommendations; eular-standing-committee; acceptable symptom state; secondary data sources; eq-5d index scores; knee osteoarthritis; cost-effectiveness; task-force; outcome measures
AB Background: General recommendations for a reference case for economic studies in rheumatic diseases were published in 2002 in an initiative to improve the comparability of cost-effectiveness studies in the field. Since then, economic evaluations in osteoarthritis (OA) continue to show considerable heterogeneity in methodological approach. Objectives: To develop a reference case specific for economic studies in OA, including the standard optimal care, with which to judge new pharmacologic and non-pharmacologic interventions. Methods: Four subgroups of an ESCEO expert working group on economic assessments (13 experts representing diverse aspects of clinical research and/or economic evaluations) were charged with producing lists of recommendations that would potentially improve the comparability of economic analyses in OA: outcome measures, comparators, costs and methodology. These proposals were discussed and refined during a face-to-face meeting in 2013. They are presented here in the format of the recommendations of the recently published Consolidated Health Economic Evaluation Reporting Standards (CHEERS) statement, so that an initiative on economic analysis methodology might be consolidated with an initiative on reporting standards. Results: Overall, three distinct reference cases are proposed, one for each hand, knee and hip OA; with diagnostic variations in the first two, giving rise to different treatment options: interphalangeal or thumb based disease for hand OA and the presence or absence of joint malalignment for knee OA. A set of management strategies is proposed, which should be further evaluated to help establish a consensus on the "standard optimal care" in each proposed reference case. The recommendations on outcome measures, cost itemisation and methodological approaches are also provided. Conclusions: The ESCEO group proposes a set of disease-specific recommendations on the conduct and reporting of economic evaluations in OA that could help the standardisation and comparability of studies that evaluate therapeutic strategies of OA in terms of costs and effectiveness. (C) 2014 The Authors. Published by Elsevier HS journals, Inc.
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NR 121
TC 30
Z9 30
U1 0
U2 21
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J9 SEMIN ARTHRITIS RHEU
JI Semin. Arthritis Rheum.
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WC Rheumatology
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PT J
AU Queen, RM
Butler, RJ
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TI Bilateral differences in gait mechanics following total ankle replacement: A two year longitudinal study
SO CLINICAL BIOMECHANICS
LA English
DT Article
DE Total ankle replacement; Gait symmetry; Walking mechanics; Ankle arthritis
ID consecutive ankles; foot kinematics; walking speed; arthrodesis; arthroplasty; osteoarthritis; prostheses; fractures; arthritis; disease
AB Background: Following total ankle replacement (TAR) patients demonstrate improvements in gait. The purpose of this study was to assess the changes in gait symmetry from a pre-operative assessment through two years following TAR. Methods: Seventy-eight patients who received a primary TAR and had no contralateral pain were examined. Three-dimensional joint mechanics and ground reaction forces were collected during seven walking trials preoperatively, and 1 and 2-years post-operatively. Data was analyzed using a 2 x 3 repeated measures ANOVA to determine significant differences between limbs and across time points (alpha = 0.05). Findings: Walking speed improved from pre-operative to each post-operative time point (P<.001; ES = 1.5). Peak dorsiflexion was not changed across time or between sides, however, the dorsiflexion angle at heel strike was increased on the nonsurgical side (P = 0.049; ES = 0.32). Peak plantar flexion moment (P<.001; ES = .80), stance (P<.001; ES = .29) and step time (P<.001; ES = .41) were improved from pre-op to 1 year post-surgery on the surgical side. Step (P<.001; ES = 1.2) and stride length (P<.001; ES = 1.2) demonstrated improvements across all time points, while the weight acceptance (P<.001; ES = 27) and propulsion ground reaction forces (P<.001; ES = .22) showed improvements between pre-op and 1 year post-op. Interpretation: The results of the study indicate that the patients are able to walk faster and demonstrate an improvement in gait symmetry; however, this improvement does not return the patient to a symmetric walking pattern by 2 years post-TAR. (C) 2014 Elsevier Ltd. All rights reserved.
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PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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SC Engineering; Orthopedics; Sport Sciences
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TI Molecular evidence of osteoblast dysfunction in elderly men with osteoporotic hip fractures
SO EXPERIMENTAL GERONTOLOGY
LA English
DT Article
DE Osteoporosis; Hip fracture; Gene expression; Bone formation
ID male idiopathic osteoporosis; bone-formation; postmenopausal women; femoral-neck; osteoclast differentiation; trabecular bone; binding-protein; bmp antagonist; messenger-rna; osteoarthritis
AB Osteoporosis is extremely frequent in post-menopausal women; nevertheless, osteoporosis in men is also a severe and frequently occurring but often underestimated disease. Increasing evidence links bone loss in male idiopathic osteoporosis and age related osteoporosis to osteoblast dysfunction rather than increased osteoclast activity as seen in postmenopausal osteoporosis. The aim of this study was to investigate gene expression of osteoblast related genes and of bone architecture in bone samples derived from elderly osteoporotic men with hip fractures (OP) in comparison to bone samples from age matched men with osteoarthritis of the hip (OA). Femoral heads and adjacent neck tissue were collected from 12 men with low-trauma hip fractures and consecutive surgical hip replacement. Bone samples of age matched patients undergoing hip replacement due to osteoarthritis served as controls. One half of the bone samples was subjected to RNA extraction, reverse transcription, and real-time polymerase chain reactions. The second half of the bone samples was analyzed by static histomorphometry. From each half samples from four different regions, the central and subcortical region of the femoral head and neck, were analyzed. OP patients displayed a significantly decreased RUNX2, Osterix and SOST expression compared to OA patients. Major microstructural changes in OP bone were seen in the subcortical region of the neck and were characterized by a significant decrease of bone volume, and a significant increase of trabecular separation. In conclusion, decreased local gene expression of RUNX2 and Osterix in men with hip fractures strongly supports the concept of osteoblast dysfunction in male osteoporosis. Major microstructural changes in the trabecular structure associated with osteoporotic hip fractures in men are localized in the subcortical region of the femoral neck. (C) 2014 Elsevier Inc. All rights reserved.
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NR 49
TC 19
Z9 19
U1 0
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AU Tang, B
Fong, MK
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AF Tang, B.
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Chiu, K. Y.
Lu, W. W.
TI Nanostiffness of Collagen Fibrils Extracted from Osteoarthritic Cartilage Characterized with AFM Nanoindentation
SO SOFT MATERIALS
LA English
DT Article
DE Articular cartilage; Atomic force microscopy; Collagen fibril; Nanoindentation; Stiffness
ID atomic-force microscopy; mechanical-property; nanomechanics
AB Osteoarthritis (OA) is a prevalent and deliberating joint disorder, which acts as

the leading cause for the disability and poor quality of life of the middle-age and elderly people. It is generally believed that OA is degeneration of articular cartilage. However, the debate remains on the role of subchondral bone in pathogenesis of OA. In this study, the nanostiffness of collagen fibrils from articular cartilage in patients with entirely different bone metabolism, that is, OA, osteoporosis (OP), and health, was quantitatively measured with AFM nanoindentation technique. It was found that the stiffness of individual collagen fibril from healthy cartilage was 2.67 +/- 0.12GPa under ambient condition and 11.24 +/- 0.74MPa in hydrated state respectively. The collagen fibrils were softer in osteoporosis (OP) group (ambient: 1.64 +/- 0.12GPa; hydrated: 8.59 +/- 0.59MPa). By contrast, the extracted fibrils from OA cartilages were stiffer (ambient: 4.65 +/- 0.25GPa; hydrated: 17.26 +/- 1.77MPa). The results obtained demonstrated that the collagen fibrils extracted from OA patients are stiffer than those from healthy patients, and therefore the nanomechanical characterization of extracted collagen fibrils may be a promising way for early diagnosis of OA.

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NR 30
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U1 0
U2 57
PU TAYLOR & FRANCIS INC
PI PHILADELPHIA
PA 530 WALNUT STREET, STE 850, PHILADELPHIA, PA 19106 USA
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WC Materials Science, Multidisciplinary
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AU Corrao, S
Santalucia, P
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TI Gender-differences in disease distribution and outcome in hospitalized elderly: Data from the REPOSI study
SO EUROPEAN JOURNAL OF INTERNAL MEDICINE
LA English
DT Article
DE Elderly; Sex-gender difference; In-hospital mortality; Disease distribution
ID coronary-heart-disease; quality-of-life; womens health; cardiovascular-disease; postmenopausal women; antidepressant use; depression; risk; epidemiology; population
AB Background and purpose: Women live longer and outnumber men. On the other hand, older women develop more chronic diseases and conditions such as arthritis, osteoporosis and depression, leading to a greater number of years of living with disabilities. The aim of this study was to describe whether or not there are gender differences in the demographic profile, disease distribution and outcome in a population of hospitalized elderly people. Methods: Retrospective observational study including all patients recruited for the REPOSI study in the year 2010. Analyses are referred to the whole group and gender categorization was applied. Results: A total of 1380 hospitalized elderly subjects, 50.5% women and 49.5% men, were considered. Women were older than men, more often widow and living alone or in nursing homes. Disease distribution showed that malignancy, diabetes, coronary artery disease, chronic kidney disease and chronic obstructive pulmonary disease were more frequent in men, but hypertension, osteoarthritis, anemia and depression were more frequent in women. Severity and comorbidity indexes according to the Cumulative Illness Rating Scale (CIRS-s and CIRS-c) were higher in men, while cognitive impairment evaluated by the Short Blessed Test (SBT), mood disorders by the Geriatric Depression Scale (GDS) and disability in daily life measured by Barthel Index (BI) were worse in women. In-hospital and 3-month mortality rates were higher in men. Conclusions: Our study showed a gender dimorphism in the demographic and morbidity profiles of hospitalized elderly people, emphasizing once more the need for a personalized process of healthcare.
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AF Lissarrague, Mara H.
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TI Acrylic Bone Cements: The Role of Nanotechnology in Improving Osteointegration and Tunable Mechanical Properties
SO JOURNAL OF BIOMEDICAL NANOTECHNOLOGY
LA English
DT Review
DE Acrylic Bone Cement; Vertebroplasty; Kyphoplasty; Osteointegration; Mechanical Behavior; Biocompatibily; Bone Tissue Engineering
ID vertebral compression fractures; in-vitro release; percutaneous vertebroplasty; carbon nanotubes; particle-size; total hip; antibacterial activity; hydroxyapatite cement; physical-property; gentamicin release
AB Nanotechnology is an extremely powerful emerging technology, which is expected to have a substantial impact on biomedical technology, especially in tissue engineering and drug delivery. The use of nanocompounds and nanoparticles in the synthesis of improved bone cements to be applied in vertebroplasty/kyphoplasty and arthroplasty, is of great interest due to the increasing incidence of osteoporosis and osteoarthritis. This review reports new advances in the development of acrylic bone cements, using different radio-opalescent nanomaterials taking into consideration their influence on the mechanical behavior and biocompatibility of the resulting acrylic bone cement. Furthermore, other non-radiopaque nanoparticles capable of mechanically reinforcing the bone cement as well as induce osteointegration, are also reviewed.

Additionally, nanoparticles used to improve the controlled release of antibiotics contained in acrylic bone cements are briefly described.
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TC 13
Z9 14
U1 0
U2 91
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JI J. Biomed. Nanotechnol.
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WC Nanoscience & Nanotechnology; Materials Science, Biomaterials
SC Science & Technology - Other Topics; Materials Science
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UT WOS:000342793600005
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PT J
AU Cho, YJ
Gong, HS
Song, CH
Lee, YH
Baek, GH
AF Cho, Young Jae
Gong, Hyun Sik
Song, Cheol Ho
Lee, Young Ho
Baek, Goo Hyun
TI Evaluation of Physical Performance Level as a Fall Risk Factor in Women with a Distal Radial Fracture
SO JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME
LA English
DT Article
ID hand grip strength; quality-of-life; hip fracture; follow-up; forearm fractures; older-women; osteoporosis; men; disability; prevention
AB Background: Decreased physical performance has been associated with an increased risk of falls and fragility hip fractures. The purpose of our study was to compare physical performance measures and fall risk factors in middle-aged and elderly patients with recent distal radial fractures relative to age-matched control patients. Methods: We prospectively recruited forty postmenopausal women over

fifty years of age who sustained a distal radial fracture due to a fall and forty age-matched controls without a recent history of falls. We excluded those patients with cognitive impairment, neuromuscular diseases, or other chronic conditions affecting muscle function. We compared the two groups for the level of physical performance and other risk factors of a fall. Other known risk factors assessed were low body mass index; osteoarthritis; arrhythmia; depression; visual disturbance; hypotension; use of antihypertensive drugs, sedatives, hypnotics, or antidepressants; and use of four or more medications. Results: There was no significant difference in the Short Physical Performance Battery summary score between the two groups. However, when patients with distal radial fracture were compared with control patients, significantly lower scores were observed for chair stand ($p = 0.034$) and grip strength (adjusted for hand dominance) ($p = 0.038$). Conclusions: This study suggests that overall physical performance level is not different between women with a distal radial fracture and those without a distal radial fracture. Differences in chair stand test scores and grip strength may imply an early subtle decrease in physical performance level in patients with distal radial fracture.
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Z9 26
U1 0
U2 7
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
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JI J. Bone Joint Surg.-Am. Vol.

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WC Orthopedics; Surgery
SC Orthopedics; Surgery
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PT J
AU Lucas, R
   Norbury, CF
AF Lucas, Rebecca
   Norbury, Courtenay Frazier
TI Orthography facilitates vocabulary learning for children with autism spectrum disorders (ASD)
SO QUARTERLY JOURNAL OF EXPERIMENTAL PSYCHOLOGY
LA English
DT Article
DE Orthography; Reading; Vocabulary; Word learning; Autism spectrum disorder
ID word-recognition; picture; sleep; consolidation; information; impairment; deficits; ability; speech; skills
AB This study investigated the extent to which children with autism spectrum disorders (ASD) can use orthography to facilitate vocabulary learning, as is the case for typically developing (TD) children. Forty-one children aged 7-12 years, 20 with a formal diagnosis of ASD and 21 TD peers, were taught 16 low-frequency concrete science words, such as "breccia". Half of the stimuli had the written word presented alongside a picture of the target item (orthography present: OP) while the remaining items were taught with orthography absent (OA). During the learning phase, eye movements were recorded; there were no group differences in the time spent fixating the written form. Production, comprehension, and recognition of orthographic forms of new words were assessed immediately after learning and again after a 24-hour delay. The vocabulary learning of both groups was facilitated by the presence of orthography. Overall, the groups did not differ in comprehension of new words or recognition of new orthographic forms, although the children with ASD demonstrated superior phonological learning (as measured by a picture naming task) relative to TD peers. Additionally, both groups retained

or increased new knowledge after 24 hours. The results suggest that presenting the written form during oral vocabulary teaching will enhance learning and provide a mechanism for children with ASD to increase word knowledge despite potential limitations in social learning.
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NR 65
TC 25
Z9 44
U1 1
U2 43
PU SAGE PUBLICATIONS LTD
PI LONDON
PA 1 OLIVERS YARD, 55 CITY ROAD, LONDON EC1Y 1SP, ENGLAND
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JI Q. J. Exp. Psychol.
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WC Psychology, Biological; Physiology; Psychology; Psychology, Experimental
SC Psychology; Physiology
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PT J
AU Mizukami, S
Abe, Y
Tsujimoto, R
Arima, K
Kanagae, M
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AF Mizukami, S.
Abe, Y.
Tsujimoto, R.

Arima, K.
Kanagae, M.
Chiba, G.
Aoyagi, K.
TI Accuracy of spinal curvature assessed by a computer-assisted device and anthropometric indicators in discriminating vertebral fractures among individuals with back pain
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Lumbar kyphotic angle (LKA); Osteoporosis; Rib-pelvis distance (RPD); Thoracic kyphotic angle (TKA); Vertebral fracture; Wall-occiput distance (WOD)
ID thoracic kyphosis; compression fractures; postmenopausal women; osteoporosis; prevalence; deformity; mobility; lordosis; distance; posture
AB This study examined the accuracy of thoracic and lumbar kyphotic angles as well as anthropometric indicators for discriminating patients with vertebral fracture among Japanese women > 50 years old with back pain. Along with region-specific kyphotic angles and anthropometric indicators, the combination of thoracic and lumbar kyphotic angles offered the highest accuracy. Vertebral fractures have been associated with thoracic kyphosis. However, reports on lumbar kyphotic changes in association with vertebral fracture are scarce. This study investigated the accuracy of thoracic kyphotic angle (TKA) and lumbar kyphotic angle (LKA) measurements as well as anthropometric indicators (wall-occiput distance (WOD) and rib-pelvis distance (RPD)) in discriminating patients with vertebral fracture. Lateral radiographs of the spine were obtained in 70 postmenopausal Japanese women who visited an orthopedic clinic with low back pain (mean age, 76.2 +/- 9.0 years). Radiographic vertebral fracture was diagnosed using quantitative measurement according to Japanese criteria. Osteoarthritis (OA) was defined as Kellgren-Lawrence (KL) grade 3 or higher. TKA and LKA were measured using SpinalMouseA (R). WOD and RPD were also measured. At least one vertebral fracture was present in 49 subjects (70 %). Women with vertebral fractures showed significant increases in LKA, TKA + LKA, and WOD and decreases in RPD. Logistic regression analysis showed significant association between TKA + LKA and vertebral fracture independent of the presence of OA. Receiver operating characteristic analysis revealed that TKA was useful for discriminating thoracic fractures (area under the curve (AUC), 0.730) and LKA was useful for lumbar fractures (AUC, 0.691). The combination of TKA + LKA offered the highest accuracy for detecting thoracic, lumbar, and any vertebral fractures, with AUCs of 0.779, 0.728, and 0.783, respectively. WOD and RPD showed low-to-moderate accuracies for thoracic, lumbar, and any vertebral fractures. Assessment of spinal kyphosis by SpinalMouseA (R) as well as anthropometric indicators proved useful in discriminating subjects with vertebral fractures. These convenient and radiation-free methods could contribute to early diagnosis of vertebral fractures and subsequent appropriate treatment, thus preventing additional osteoporotic

fractures.
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NR 42
TC 7
Z9 8
U1 0
U2 7
PU SPRINGER LONDON LTD
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
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J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Pasquale, MK
Dufour, R
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AF Pasquale, Margaret K.
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TI Pain Conditions Ranked by Healthcare Costs for Members of a National Health Plan
SO PAIN PRACTICE
LA English
DT Article
DE chronic pain; acute pain; back pain; osteoarthritis; cost drivers; claims analysis
ID osteoporosis; obesity; hip; antidepressants; osteoarthritis; prevention; patterns; back
AB Healthcare resource utilization (HCRU) and associated costs specific to pain are a growing concern, as increasing dollar amounts are spent on pain-related conditions. Understanding which pain conditions drive the highest utilization and cost burden to the healthcare system would enable providers and payers to better target conditions to manage pain adequately and efficiently. The current study focused on 36 noncancer chronic and 14 noncancer acute pain conditions and measured the HCRU and costs per member over 365days. These conditions were

ranked by per-member costs and total adjusted healthcare costs to determine the most expensive conditions to a national health plan. The top 5 conditions for the commercial line of business were back pain, osteoarthritis (OA), childbirth, injuries, and non-hip, non-spine fractures (adjusted annual total costs for the commercial members were $119 million, $98 million, $69 million, $61 million, and $48 million, respectively). The top 5 conditions for Medicare members were OA, back pain, hip fractures, injuries, and non-hip, non-spine fractures (adjusted annual costs for the Medicare members were $327 million, $218 million, $117 million, $82 million, and $67 million, respectively). The conditions ranked highest for both per-member and total healthcare costs were hip fractures, childbirth, and non-hip, non-spine fractures. Among these, hip fractures in the Medicare member population had the highest mean cost per member (adjusted per-member cost was $21,058). Further examination specific to how pain is managed in these high-cost conditions will enable providers and payers to develop strategies to improve patient outcomes through appropriate pain management.

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NR 36
TC 21
Z9 25
U1 0
U2 4
PU WILEY
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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JI Pain Pract.
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WC Anesthesiology; Clinical Neurology
SC Anesthesiology; Neurosciences & Neurology
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PT J
AU Devogelaer, JP
Geusens, P
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TI Remission Over 3 Years in Patients with Paget Disease of Bone Treated with a Single Intravenous Infusion of 5 mg Zoledronic Acid
SO CALCIFIED TISSUE INTERNATIONAL
LA English
DT Article
DE Paget disease of bone; Bisphosphonate; Zoledronic acid; Treatment; Remission
ID bisphosphonates; persistence; adherence; profile
AB Using data from the Belgian Paget's Disease Registry of 142 patients treated with a 5 mg intravenous infusion of zoledronic acid, we examined disease remission over 3 years in 98 patients with Paget disease of bone (PDB) seen in routine practice. Median age was 76 years, most patients (60.2 %) were male, and all were Caucasian. Median time since PDB diagnosis was 11.5 years, few patients

(5.1 %) had a family history of PDB, and 32.6 % had received prior bisphosphonate and/or other treatments. The most common pagetic locations were pelvis, spine, femur, tibia, and skull. The most common symptoms included pain, impaired mobility, bone deformities, and joint disease: 36.7 % of patients had comorbid osteoarthritis and 16.3 % comorbid osteoporosis. Response rates were 93.3 % at 1 year, 89.5 % at 2 years, and 91.6 % at 3 years, statistically similar to an extension study of the original zoledronic acid trials. Twenty-one patients experienced a relapse over the 3-year period at a median of 20.7 months posttreatment; of these, 13 regained remission by the end of the observation period. Relapse was not associated with osteoarthritis, osteoporosis, or other comorbidities. Safety data were similar to those reported elsewhere. In summary, in this somewhat frailer sample of patients with PDB, effectiveness and safety data were similar to those observed in the original trial populations. These findings, which are the first on the use of zoledronic acid for PDB in routine clinical practice, underscore the therapeutic benefits and relative safety of zoledronic acid in the management of PDB in "real-world'' clinical settings.
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NR 18
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U1 0
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PU SPRINGER
PI NEW YORK
PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
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AU Liu, Y
Wu, JM
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Zhu, Youming
Han, Jinxiang
TI Therapeutic application of mesenchymal stem cells in bone and joint diseases
SO CLINICAL AND EXPERIMENTAL MEDICINE
LA English
DT Review
DE Mesenchymal stem cells (MSCs); Osteoarthritis (OA); Osteogenesis imperfecta (OI); Osteoporosis; Osteonecrosis of the femoral head (ONFH); Rheumatoid arthritis (RA)
ID collagen-induced arthritis; marrow stromal cells; severe osteogenesis imperfecta; mediated gene-therapy; femoral-head; rheumatoid-arthritis; cartilage defects; progenitor cells; adipose-tissue; induced osteonecrosis
AB Mesenchymal stem cells (MSCs), the non-hematopoietic progenitor cells, are multi-potent stem cells from a variety of tissues with the capability of self-renewal, proliferation, differentiation into multi-lineage cell types, as well as anti-inflammatory and immunomodulatory. These properties make MSCs an ideal source of cell therapy in bone and joint diseases. This review describes the advances of animal study and preliminary clinical application in the past few years, related to MSC-based cell therapy in the common bone and joint diseases, including osteoarthritis, rheumatoid arthritis, osteoporosis, osteonecrosis of the femoral head and osteogenesis imperfecta. It highlights the promising prospect of MSC in clinical application of bone and joint diseases.
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U1 0
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TI An Ex Vivo Model in Human Femoral Heads for Histopathological Study and Resonance Frequency Analysis of Dental Implant Primary Stability
SO BIOMED RESEARCH INTERNATIONAL
LA English
DT Article
ID bone-density; computerized-tomography; biomechanical aspects; surgical techniques; insertion torque; quality; quotient; values
AB Objective. This study was designed to explore relationships of resonance frequency analysis (RFA)-assessed implant stability (ISQ values) with bone

morphometric parameters and bone quality in an ex vivo model of dental implants placed in human femoral heads and to evaluate the usefulness of this model for dental implant studies. Material and Methods. This ex vivo study included femoral heads from 17 patients undergoing surgery for femoral neck fracture due to osteoporosis (OP) (n = 7) or for total prosthesis joint replacement due to severe hip osteoarthrosis (OA) (n = 10). Sixty 4.5 x 13 mm Dentsply Astra implants were placed, followed by RFA. CD44 immunohistochemical analysis for osteocytes was also carried out. Results. As expected, the analysis yielded significant effects of femoral head type (OA versus OA) ($P < 0.001$), but not of the implants ($P = 0.455$) or of the interaction of the two factors ($P = 0.848$). Bonferroni post hoc comparisons showed a lower mean ISQ for implants in decalcified (50.33 +/- 2.92) heads than in fresh (66.93 +/- 1.10) or fixated (70.77 +/- 1.32) heads (both $P < 0.001$). The ISQ score (fresh) was significantly higher for those in OA (73.52 +/- 1.92) versus OP (67.13 +/- 1.09) heads. However, mixed linear analysis showed no significant association between ISQ scores and morphologic or histomorphometric results ($P > 0.5$ in all cases), and no significant differences in ISQ values were found as a function of the length or area of the cortical layer (both $P > 0.08$). Conclusion. Although RFA-determined ISQ values are not correlated with morphometric parameters, they can discriminate bone quality (OP versus OA). This ex vivo model is useful for dental implant studies.
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NR 43
TC 10
Z9 11
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PU HINDAWI LTD
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TI Bovine Collagen Peptides Compounds Promote the Proliferation and Differentiation of MC3T3-E1 Pre-Osteoblasts
SO PLOS ONE
LA English
DT Article
ID alkaline-phosphatase; antioxidant activity; bone; expression; cells; hydrolysate; disease; rats; mineralization; gelatin
AB Objective: Collagen peptides (CP) compounds, as bone health supplements, are known to play a role in the treatment of osteoporosis. However, the molecular mechanisms of this process remain unclear. This study aimed to investigate the effects of bovine CP compounds on the proliferation and differentiation of MC3T3-E1 cells. Methods: Mouse pre-osteoblast cell line MC3T3-E1 subclone 4 cells were treated with bovine CP compounds. Cell proliferation was analyzed by MTT assays and the cell cycle was evaluated by flow cytometry scanning.

Furthermore, MC3T3-E1 cell differentiation was analyzed at the RNA level by real-time PCR and at the protein level by western blot analysis for runt-related transcription factor 2 (Runx2), a colorimetric p-nitrophenyl phosphate assay for alkaline phosphatase (ALP), and ELISA for osteocalcin (OC). Finally, alizarin red staining for mineralization was measured using Image Software Pro Plus 6.0. Results: Cell proliferation was very efficient after treatment with different concentrations of bovine CP compounds, and the best concentration was 3 mg/mL. Bovine CP compounds significantly increased the percentage of MC3T3-E1 cells in G(2)/S phase. Runx2 expression, ALP activity, and OC production were significantly increased after treatment with bovine CP compounds for 7 or 14 days. Quantitative analyses with alizarin red staining showed significantly increased mineralization of MC3T3-E1 cells after treatment with bovine CP compounds for 14 or 21 days. Conclusions: Bovine CP compounds increased osteoblast proliferation, and played positive roles in osteoblast differentiation and mineralized bone matrix formation. Taking all the experiments together, our study indicates a molecular mechanism for the potential treatment of osteoarthritis and osteoporosis.
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AF McAuley, C.
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TI A Survey of Physiotherapists' Experience Using Outcome Measures in Total Hip and Knee Arthroplasty
SO PHYSIOTHERAPY CANADA
LA English
DT Article
DE hip arthroplasty; knee arthroplasty; outcome assessment; survey
ID performance-based tests; international classification; physical function; patient concerns; clinical-trials; health-care; osteoarthritis; rehabilitation; replacement; disability
AB Purpose: To identify physiotherapists' familiarity with and experience using outcome measures (OMs) along the care continuum for patients undergoing total joint arthroplasty (TJA) of the hip and knee. Views on future use and barriers were also captured. Methods: A stratified random sample of physiotherapists in one Canadian province completed a questionnaire about 19 standardized and clinically feasible OMs. Analyses included descriptive statistics and chi-square and McNemar tests to compare use of OMs for clinical decision making and program evaluation. Results: Of 694 physiotherapists surveyed, 298 (43%) responded. Of these, 172 (58%) treated TJA clients and completed the full questionnaire. A majority worked in public practice settings and >1 care phase (e.g., pre-op, acute, rehab). All physiotherapists reported using >1 OM and having greater experience using performance-based measures than patient-reported OMs. OMs were used more often for clinical decision making than for program evaluation. Dissatisfaction with available tools was evident from respondents' comments. Several barriers to using OMs were identified in varied clinical settings and care phases. Conclusions: While

physiotherapists use a variety of OMs along the TJA continuum, there remain challenges to routine use across clinical settings, care phases, and patient sub-groups.
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TI Moving from evidence to practice: Models of care for the prevention and management of musculoskeletal conditions
SO BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Model of care; Policy; Musculoskeletal; Arthritis; Osteoporosis; Pain; Injury; Evidence; Implementation
ID fracture liaison services; minimal trauma fracture; evidence based recommendations; chronic disease management; eular-standing-committee; quality-of-life; low-back-pain; rheumatoid-arthritis; self-management; knee osteoarthritis
AB With musculoskeletal conditions now identified as the second highest cause of the morbidity-related global burden of disease, models of care for the prevention and management of disability related to musculoskeletal conditions are an imperative. Musculoskeletal models of care aim to describe how to operationalise evidence-based guidelines for musculoskeletal conditions and thus support implementation by clinical teams and their health systems. This review of models of care for musculoskeletal pain conditions, osteoarthritis, rheumatoid arthritis, osteoporosis and musculoskeletal injuries and trauma outlines health system and local implementation strategies to improve consumer outcomes, including supporting access to multidisciplinary teams, improving access for vulnerable populations and levering digital technologies to support access and self-management. However, the challenge remains of how to inform health system decision-makers and policy about the human and fiscal benefits for broad implementation across health services. Recommendations are made for potential solutions, as well as highlighting where further evidence is required. (C) 2014 Elsevier Ltd. All rights reserved.
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JI Best Pract. Res. Clin. Rheumatol.
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WC Rheumatology
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GA AY5BT
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PT J
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TI Acute total hip replacement for acetabular fractures: A systematic review of the literature
SO INJURY-INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED
LA English
DT Review
DE Acute total hip replacement; Immediate total hip replacement; Acetabular fracture; Walking ability; Weight-bearing
ID internal-fixation; arthroplasty; management; reduction
AB Introduction: Immediate total hip replacement (THR) in patients with acetabular fractures is controversial because of concerns about high complication rates. The current article is a systematic review of the literature on the use of acute THR for the treatment of acetabular fractures. Materials and methods: This systematic review included studies published in English between 1992 and 2012 of subjects with acetabular fracture undergoing immediate THR. Outcomes of interest included indications; clinical assessment, including walking ability; comparison with control

group; associated procedures, and rate of complications, such as loosening or revision surgery. Results: This review identified six studies, of which only one included a control group. Acute THR was associated with satisfying outcomes with regard to clinical assessment and walking ability. The comparative study assessed the difference between acute THR and delayed THR in acetabular fractures: improved outcomes were observed in the delayed THR group, although the differences between the two groups were not statistically significant. Discussion: According to data reported in the literature, acute primary THR can be successful in patients with poor bone quality, combined acetabular and femoral neck fractures, or pathological fractures and concurrent osteoarthritis of the hip. Relative indications include old age, delayed presentation, substantial medical comorbidities, and pathologic obesity. Clinical outcomes with acute THR were similar to those with delayed THR. Although the results reported in the six studies reviewed here were satisfying overall, there is limited evidence in this area in the existing literature and future prospective investigations are required. Conclusion: Data reported in the literature indicate that immediate THR can be successful in appropriately selected elderly patients or patients with extensive osteoporosis, combined acetabular and femoral neck fractures or pathological fractures. There is currently a limited evidence base for THR in patients with acetabular fractures; therefore, physicians' practice and expertise are the most useful tools in clinical practice. (C) 2013 Elsevier Ltd. All rights reserved.
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PT J
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Balaj, C
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AF Teixeira, Pedro Augusto Gondim
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TI Linear signal hyperintensity adjacent to the subchondral bone plate at the knee on T2-weighted fat-saturated sequences: imaging aspects and association with structural lesions
SO SKELETAL RADIOLOGY
LA English
DT Article
DE Magnetic resonance imaging; Knee; Subchondral bone; Tibial menisci; Insufficiency fracture
ID marrow edema syndrome; transient osteoporosis; articular-cartilage; mr; osteoarthritis; intensity; echo
AB To describe the association between linear T2 signal abnormalities in the subchondral bone and structural knee lesions. MR studies of patients referred for the evaluation of knee pain were retrospectively evaluated and 133 of these patients presented bone marrow edema pattern (BMEP) (study group) and while 61 did not (control group). The presence of linear anomalies of the subchondral bone on T2-weighted fat-saturated sequences was evaluated. The findings were correlated to the presence of structural knee lesions and to the duration of the patient's symptoms. Histologic analysis of a cadaveric specimen was used for anatomic correlation. Linear T2 hyperintensities at the subchondral bone were present in 41 % of patients with BMEP. None of the patients in the control group presented this sign. When a subchondral linear hyperintensity was present, the prevalence of radial or root tears was high and that of horizontal tears was low (71.4 and 4.8 %, respectively). Sixty-nine percent of the patients with a subchondral insufficiency fracture presented a subchondral linear hyperintensity. It was significantly more prevalent in patients with acute or sub-acute symptoms (p <

0.0001). The studied linear T2 hyperintensity is located at the subchondral spongiosa and can be secondary to local or distant joint injuries. Its presence should evoke acute and sub-acute knee injuries. This sign is closely related to subchondral insufficiency fractures and meniscal tears with a compromise in meniscal function.
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NR 29
TC 10
Z9 14
U1 0
U2 6
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0364-2348
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J9 SKELETAL RADIOL
JI Skeletal Radiol.
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WC Orthopedics; Radiology, Nuclear Medicine & Medical Imaging
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PT J

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Branco, J
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Kanis, J. A.
Petermans, J.
Ringe, J. D.
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Weinman, J.
Reginster, J-Y.
TI Management of osteoporosis of the oldest old
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Review
DE Ageing; Drug adherence; Fracture risk; Frailty; Malnutrition; Muscle weakness; Osteoporosis; Review
ID bone-mineral density; clinical vertebral fractures; serum 25-hydroxyvitamin d; postmenopausal women; vitamin-d; zoledronic acid; hip fracture; strontium

ranelate; venous thromboembolism; nonvertebral fractures
AB This consensus article reviews the diagnosis and treatment of osteoporosis in geriatric populations. Specifically, it reviews the risk assessment and intervention thresholds, the impact of nutritional deficiencies, fall prevention strategies, pharmacological treatments and their safety considerations, the risks of sub-optimal treatment adherence and strategies for its improvement. This consensus article reviews the therapeutic strategies and management options for the treatment of osteoporosis of the oldest old. This vulnerable segment (persons over 80 years of age) stands to gain substantially from effective anti-osteoporosis treatment, but the under-prescription of these treatments is frequent. This report is the result of an ESCEO (European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis) expert working group, which explores some of the reasons for this and presents the arguments to counter these beliefs. The risk assessment of older individuals is briefly reviewed along with the differences between some intervention guidelines. The current evidence on the impact of nutritional deficiencies (i.e. calcium, protein and vitamin D) is presented, as are strategies to prevent falls. One possible reason for the under-prescription of pharmacological treatments for osteoporosis in the oldest old is the perception that anti-fracture efficacy requires long-term treatment. However, a review of the data shows convincing anti-fracture efficacy already by 12 months. The safety profiles of these pharmacological agents are generally satisfactory in this patient segment provided a few precautions are followed. These patients should be considered for particular consultation/follow-up procedures in the effort to convince on the benefits of treatment and to allay fears of adverse drug reactions, since poor adherence is a major problem for the success of a strategy for osteoporosis and limits cost-effectiveness.
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TI Prevalence and progression of radiographic ossification of the posterior longitudinal ligament and associated factors in the Japanese population: a 3-year follow-up of the ROAD study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Bone mineral density; Diffuse idiopathic skeletal hyperostosis; Ossification of posterior longitudinal ligament of cervical spine; Plasma pentosidine; Prevalence; Progression
ID bone-mineral density; glycation end-product; body-mass index; cervical-spine; plasma pentosidine; renal-failure; risk; opll; collagen; dish
AB The prevalence of radiographic cervical ossification of the posterior longitudinal ligament (OPLL) in 1,562 Japanese from a population-based cohort was 1.9 %. The presence of OPLL showed a significant association with the femoral neck bone mineral density (BMD), presence of diffuse idiopathic skeletal hyperostosis (DISH) and plasma pentosidine levels. Only one new case of radiographic OPLL was detected, but OPLL progressed in all affected subjects. The purpose of this study was to clarify the prevalence and progression of radiographic OPLL and the associated factors, using the population-based cohort Research on Osteoarthritis/osteoporosis Against Disability (ROAD). In the ROAD study, 1,690 participants underwent X-ray examination of the entire spine and both knees. Radiographic OPLL, lumbar spondylosis, knee osteoarthritis and DISH were diagnosed by a single, well-experienced orthopaedic surgeon. An interviewer-administered questionnaire and tests for anthropometric measurements were administered, and the BMDs of the lumbar spine and proximal femur were determined. A new OPLL case was considered if heterotopic ossification in the posterior longitudinal ligament was absent at baseline but present during follow-up. Progression was defined as an increase in the maximum length or width of the ossification at follow-up over that at baseline. Radiographic OPLL was detected in 30 (17 men, 13 women) of 1,562 individuals who underwent X-ray examination of the cervical spine (prevalence = 1.9 %). Its prevalence was significantly higher in men than in women ($p = 0.007$), but no association with age was observed. In a logistic regression analysis, OPLL showed a significant association with the femoral neck BMD, presence of DISH and plasma pentosidine levels. Only one new case of radiographic OPLL was detected, but OPLL progressed in all affected subjects. This population-based study clarified the prevalence of radiographic OPLL in the Japanese population as well as its progression. OPLL

showed significant association with plasma pentosidine levels, BMD and DISH.
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PT J
AU Muraki, S
Akune, T
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TI Association of knee osteoarthritis with onset and resolution of pain and physical functional disability: The ROAD study
SO MODERN RHEUMATOLOGY
LA English
DT Article
DE Knee joint; Osteoarthritis; Epidemiology; Longitudinal studies

ID radiographic osteoarthritis; united-states; bone-marrow; prevalence; cohort; population; validation; arthritis; symptoms; health
AB Objectives. To examine the onset and resolution of pain and physical functional disability using Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and their association with knee osteoarthritis (OA) in the longitudinal large-scale population of the nationwide cohort study, Research on Osteoarthritis/osteoporosis Against Disability (ROAD). Methods. Subjects from the ROAD study who had been recruited during 2005-2007 were followed up 3 years later. A total of 1,578 subjects completed the WOMAC questionnaire at baseline and follow up, and the onset and resolution rate of pain and physical functional disability were examined. We also examined the association of onset of pain and physical functional disability and their resolution with severity of knee OA as well as age, body-mass index and grip strength. Results. After a 3.3-year follow-up, the onset rate of pain was 35.0% and 35.3% in men and women, respectively, and the onset rate of physical functional disability was 38% and 40%, respectively. Resolution rate of pain was 20.3% and 26.2% in men and women, respectively, and resolution rate of physical functional disability was 16% and 14% in men and women, respectively. Knee OA was significantly associated with onset and resolution of pain and physical functional disability in women, but there was no significant association of knee OA with onset of pain and resolution of physical functional disability in men. Conclusions. The present longitudinal study revealed the onset rate of pain and physical functional disability as well as their resolution, and their association with knee OA.
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NR 30
TC 6
Z9 10
U1 0
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PA 2-4 PARK SQUARE, MILTON PARK, ABINGDON OR14 4RN, OXON, ENGLAND
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PT J
AU Stucinskas, J
Clauss, M
Tarasevicius, S
Wingstrand, H
Ilchmann, T
AF Stucinskas, Justinas
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TI Dynamics of femoral bone remodelling in well fixed total hip arthroplasty. A 20-year follow-up of 20 hips
SO HIP INTERNATIONAL
LA English
DT Article
DE Arthroplasty; Remodelling; Cemented; Cortical thinning
ID muller straight stem; x-ray absorptiometry; mineral density; women; osteoporosis; prostheses; bmd
AB The aim of our study was to investigate the dynamics of cortical thinning around well fixed cemented Muller straight stems without osteolysis at different time periods during long term follow-up. We investigated patients operated on for

osteoarthritis with a cemented Muller straight stem, all with more than 15 years follow-up and no radiological signs of osteolysis. Cortical thinning in 20 THA hips (19 patients) followed for a mean of 20 (16 to 22) years was measured medially and laterally at six levels from the first postoperative, five, 10 years and the last follow-up x-rays. Sixty percent of observed cortical thinning occurred during the first five postoperative years, which was more evident proximally. We conclude that significantly greater cortical bone loss occurs around cemented Muller straight stems during the first five years, than is seen subsequently. We feel that this is a non-pathological process mainly related to the Muller straight stem.
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PT J
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Darling, Eric M.
TI Impact of Aging on the Regenerative Properties of Bone Marrow-, Muscle-, and Adipose-Derived Mesenchymal Stem/Stromal Cells
SO PLOS ONE
LA English
DT Article
ID stem-cells; stromal cells; in-vitro; chondrogenic differentiation; proliferation rate; cartilage repair; tissue; age; transcription; enrichment
AB Mesenchymal stem/stromal cells (MSCs) are promising cell sources for regenerative therapies due to their multipotency and ready availability, but their application can be complicated by patient-specific factors like age or illness. MSCs have been investigated for the treatment of many musculoskeletal disorders, including osteoarthritis and osteoporosis. Due to the prevalence of these diseases in older populations, researchers have studied how aging affects MSC properties and have found that proliferation and differentiation potential are impaired. However, these effects have never been compared among MSCs isolated from multiple tissue sources in the same, healthy donor. Revealing differences in how MSCs are affected by age could help identify an optimal cell source for musculoskeletal therapies targeting older patients. MSCs were isolated from young and old rabbit bone marrow, muscle, and adipose tissue. Cell yield and viability were quantified after isolation procedures, and expansion properties were assessed using assays for proliferation, senescence, and colony formation. Multipotency was also examined using lineage-specific stains and spectrophotometry of metabolites. Results were compared between age groups and among MSC sources. Results showed that MSCs are differentially influenced by aging, with bone marrow-derived stem cells having impaired proliferation, senescence, and chondrogenic response, whereas muscle-derived stem cells and adipose-derived stem cells exhibited no negative effects. While age reduced overall cell yield and adipogenic potential of all MSC populations, osteogenesis and clonogenicity remained unchanged. These findings indicate the importance of age as a factor when designing cell-based therapies for older patients.
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NR 65
TC 264
Z9 294
U1 0
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J9 PLOS ONE
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WC Multidisciplinary Sciences
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PT J
AU Nelson, FR
Craig, J
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Oyetakin-White, P
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AF Nelson, Fred R.
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Oyetakin-White, Patricia
King, Brandon
TI Subchondral insufficiency fractures and spontaneous osteonecrosis of the knee may not be related to osteoporosis
SO ARCHIVES OF OSTEOPOROSIS
LA English
DT Article
DE Insufficiency fracture; Spontaneous osteonecrosis of the knee (SONK); Osteopenia; Osteoarthritis; Osteoporosis
AB A Summary The term insufficiency fracture implies inadequate bone and is applied to some subchondral knee magnetic resonance images. We reviewed bone

mineral density, body mass index, meniscal extrusion, comorbidities, and demographics in 32 knee insufficiency fracture patients. Only five were osteoporotic. Meniscal extrusion was predominant. Purpose The literature supports systemic osteoporosis as a risk fracture for spontaneous osteonecrosis of the knee (SONK). SONK is also called a subchondral insufficiency fracture. Recognizing that insufficiency fracture and SONK are related, we designed this retrospective study to determine if knee subchondral insufficiency fractures were associated with osteoporosis based on bone mineral density. Methods Based on magnetic resonance imaging findings, 32 patients were diagnosed as having an insufficiency fracture by an orthopaedic surgeon with magnetic resonance imaging confirmation by a musculoskeletal radiologist. We reviewed body mass index, age, sex, comorbidities, demographics, and bone mineral density using both T-scores and Z-scores. Results The average age was 70, and only five patients were osteoporotic. Twenty-six of the 32 patients were female. The average age-related Z-score was 1 standard deviation above normal. Conclusions We conclude that osteoporosis is not the underlying cause of this disorder in the majority of patients.
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AU Hardcastle, SA
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Gregson, CL
Hunter, D
Thomas, GER
Arden, NK
Spector, TD
Hart, DJ
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Clague, GA
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TI Prevalence of radiographic hip osteoarthritis is increased in high bone mass
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Osteoporosis; DXA; Radiology; Epidemiology
ID mineral density; knee osteoarthritis; elderly-men; women; risk; incident; standardization; osteoporosis; definitions; individuals
AB Objective: Epidemiological studies have shown an association between increased bone mineral density (BMD) and osteoarthritis (OA), but whether this

represents cause or effect remains unclear. In this study, we used a novel approach to investigate this question, determining whether individuals with High Bone Mass (HBM) have a higher prevalence of radiographic hip OA compared with controls. Design: HBM cases came from the UK-based HBM study: HBM was defined by BMD Z-score. Unaffected relatives of index cases were recruited as family controls. Age-stratified random sampling was used to select further population controls from the Chingford and Hertfordshire cohort studies. Pelvic radiographs were pooled and assessed by a single observer blinded to case-control status. Analyses used logistic regression, adjusted for age, gender and body mass index (BMI). Results: 530 HBM hips in 272 cases (mean age 62.9 years, 74% female) and 1702 control hips in 863 controls (mean age 64.8 years, 84% female) were analysed. The prevalence of radiographic OA, defined as Croft score >= 3, was higher in cases compared with controls (20.0% vs 13.6%), with adjusted odds ratio (OR) [95% CI] 1.52 [1.09, 2.11], P = 0.013. Osteophytes (OR 2.12 [1.61, 2.79], P < 0.001) and subchondral sclerosis (OR 2.78 [1.49, 5.18], P = 0.001) were more prevalent in cases. However, no difference in the prevalence of joint space narrowing (JSN) was seen (OR 0.97 [0.72, 1.33], P = 0.869). Conclusions: An increased prevalence of radiographic hip OA and osteophytosis was observed in HBM cases compared with controls, in keeping with a positive association between HBM and OA and suggesting that OA in HBM has a hypertrophic phenotype. (C) 2014 The Authors. Published by Elsevier Ltd and Osteoarthritis Research Society International.
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PI OXFORD
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PT J
AU Bhutia, SC
Singh, TA
Sherpa, ML
AF Bhutia, Sonam Choden
Singh, Takhelmayum Amumacha
Sherpa, Mingma Lhamu
TI Production of a polyclonal antibody against osteogenic protein-1, and its role in the diagnosis of osteoarthritis
SO SINGAPORE MEDICAL JOURNAL
LA English
DT Article
DE osteoarthritis; osteogenic protein-1; sandwich ELISA; synovial fluid
ID age-related-changes; fluid
AB INTRODUCTION Osteoarthritis (OA) is a progressive degenerative disorder of the articular cartilage. Available diagnostic radiography has been poorly associated with the progress and severity of this clinical disease. As osteogenic protein-1 (OP-1) has been identified as a bone morphogenetic protein with a major role in cartilage repair, we aimed to evaluate its potential role in the diagnosis of OA. METHODS This was an experimental study conducted at the Department of Biochemistry, Sikkim Manipal Institute of Medical Sciences, India. Polyclonal antibodies (i. e. anti-OP-1[f]) were raised against OP-1 in mice, and subsequently used in a sandwich enzyme-linked immunosorbent assay (ELISA) to detect the presence of OP-1 in the synovial fluids of 75 osteoarthritic patients. For the purpose of correlation, the radiographic assessments of the knees of the 75 patients were graded using the Kellgren-Lawrence scoring system. RESULT The polyclonal antibody (i. e. anti-OP-1[f]) raised against OP-1 was able to detect the

presence of OP-1 in the synovial fluids of all the osteoarthritic patients via sandwich ELISA. The level of the OP-1 was found to be much higher than the reference range and correlated positively with the severity of OA (r = 0.24; p = 0.04). CONCLUSION Our study shows that the polyclonal antibody, anti OP-1(f), could be used for the immunodiagnosis of osteoarthritis via sandwich ELISA.
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PA 2985 JALAN BUKIT MERAH, #02-2C, SMF BUILDING, SINGAPORE, SINGAPORE
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Stevenson, JC
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TI The role of dietary protein and vitamin D in maintaining musculoskeletal health in postmenopausal women: A consensus statement from the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO)
SO MATURITAS
LA English
DT Article
DE Musculoskeletal health; Menopause; Osteoporosis; Sarcopenia; Prevention; Physical exercise
ID hormone replacement therapy; randomized controlled-trial; muscle mass sarcopenia; essential amino-acids; frail elderly-people; bone-mineral density; skeletal-muscle; older-adults; resistance exercise; physical performance
AB From 50 years of age, postmenopausal women are at an increased risk of developing sarcopenia and osteoporosis as a result of deterioration of musculoskeletal health. Both disorders increase the risk of falls and fractures. The risk of developing sarcopenia and osteoporosis may be attenuated through healthy lifestyle changes, which include adequate dietary protein, calcium and vitamin D intakes, and regular physical activity/exercise, besides hormone replacement therapy when appropriate. Protein intake and physical activity are the main anabolic stimuli for muscle protein synthesis. Exercise training leads to increased muscle mass and strength, and the combination of optimal protein intake and exercise produces a greater degree of muscle protein accretion than either intervention alone. Similarly, adequate dietary protein intake and resistance exercise are important contributors to the maintenance of bone strength. Vitamin D helps to maintain muscle mass and strength as well as bone health. These findings suggest that healthy lifestyle measures in women aged >50 years are essential to allow healthy ageing. The European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO) recommends optimal dietary protein intake of 1.0-1.2 g/kg body weight/d with at least 20-25 g of high-quality protein at each main meal, with adequate vitamin D intake at 800 IU/d to maintain serum 25-hydroxyvitamin D levels >50 nmol/L as well as calcium intake of 1000 mg/d, alongside regular physical activity/exercise 3-5 times/week combined with protein intake in close proximity to exercise, in postmenopausal women for prevention of age-related deterioration of musculoskeletal health. (C) 2014 Elsevier Ireland Ltd. All rights reserved.
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TI Dephosphorylation of Sp1 at Ser-59 by Protein Phosphatase 2A (PP2A) is required for induction of CYP1A1 transcription after treatment with 2,3,7,8-tetrachlorodibenzo-p-dioxin or omeprazole
SO BIOCHIMICA ET BIOPHYSICA ACTA-GENE REGULATORY MECHANISMS
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DT Article
DE Sp1; Protein phophatase 2A; CYP1A1; Aryl hydrocarbon receptor
ID aryl-hydrocarbon receptor; dioxin receptor; caco-2 cells; cancer cells; hepg2 cells; gene; activation; expression; element; phosphorylation
AB The aryl hydrocarbon receptor (AhR) is a transcription factor that is activated by either 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or omeprazole (OP). Activated AhR can induce CYP1A1 transcription by binding to the xenobiotic responsive element (XRE). However, the mechanism of activation of the CYP1A1 promoter region is poorly understood. Previous reports showed that Sp1 could bind to a GC-rich region near the CYF'1A1 promoter. This study sought to clarify the function of Sp1 in CYP1A1 transcription. Phosphorylation of Sp1 at Ser-59 (pSer-59) was previously reported to be closely related to transcriptional regulation. We used a site-specific phospho-antibody to show that treatment with TCDD or OP drastically reduced the level of pSer-59 in Sp1 from HepG2 cells. This reduction was too much, we hypothesized that the reduced phosphorylation level resulted from activation of phosphatase activity. Given that pSer-59 is dephosphorylated by PP2A, we examined the effect of a PP2A inhibitor, okadaic acid (OA), on pSer-59 and transcription of CYP1A1. The results showed that OA blocked dephosphorylation of Ser-59 and drastically inhibited transcription of CYP1A1. Similar results were obtained after knockdown of PP2A. Treatment with OA had no effect on the expression of AhR, its nuclear translocation, or its ability to bind to the XRE. Furthermore, dephosphorylation of SO at Ser-59 was not affected by knockdown of AhR. These results indicate that the signals from TCDD or OP caused PP2A-mediated dephosphotylation of Sp1 at Ser-59 and induced CYP1A1 transcription. This signaling pathway was independent of the AhR-mediated pathway. (C) 2013 Elsevier B.V. All rights reserved.
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TI A multicenter observational study on the role of comorbidities in the recurrent episodes of benign paroxysmal positional vertigo
SO AURIS NASUS LARYNX
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DT Article
DE BPPV; Vertigo; Hypertension; Diabetes; Osteoarthrosis; Osteoporosis; Otolaryngology; Comorbidity; Neurology; Elderly
ID postural restrictions; hearing-loss; depression; prevalence; nystagmus; otoconia
AB Objective: Primary objective of this study was to find a statistical link between the most worldwide comorbidities affecting the elderly population (hypertension, diabetes, osteoarthrosis, osteoporosis and depression) and recurrent episodes of BPPV. Secondary objective was defining possible "groups of risk" for people suffering recurrent positional vertigo related to the presence of a well documented comorbidity. Methods: This was an observational, cross-sectional, multicenter, spontaneous, non-pharmacological study. The data of 1092 patients suffering BPPV evaluated in 11 different Departments of Otolaryngology, Otoneurology and Neurology, referring Centers for positional vertigo evaluation, were retrospectively-collected. Results: Regarding evaluated comorbidities (hypertension, diabetes, osteoarthrosis, osteoporosis and depression), data analysis showed the presence of at least one comorbid disorder in 216 subjects (19.8%) and 2 or more in 408 subjects (37.4%). Moreover there was a statistical significant difference between the number of comorbidities and the number of recurrences, otherwise said as comorbidity disorders increased the number of relapses increased too. Conclusion: The presence of a systemic disease may worsen the status of the posterior labyrinth causing a more frequent otolith detachment. This condition increases the risk for patients suffering BPPV to have recurrent episodes, even if correctly managed by repositioning maneuvers. The combination of two or more of aforementioned comorbidities further increases the risk of relapsing BPPV, worsened by the presence of osteoporosis. On the basis of this results it was possible to define "groups of risk" useful for predicting BPPV recurrence in patients with one or more comorbidity. (C) 2013 Published by Elsevier Ireland Ltd.
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TI Microstructural trabecular bone from patients with osteoporotic hip fracture or osteoarthritis: Its relationship with bone mineral density and bone remodelling

markers
SO MATURITAS
LA English
DT Article
DE Osteoarthritis; Osteoporosis; Microstructural trabecular bone; Biomechanical trabecular bone, Bone mineral density; Bone turnover markers
ID postmenopausal women; cancellous bone; femoral-head; risk; microarchitecture; difference; fragility; damage
AB Osteoporosis (OP) and osteoarthritis (OA) are the most prevalent musculoskeletal disorders in the elderly but the relationship between them is unclear. The purposes of this study are to analyze the bone turnover markers (BTM), bone mineral density (BMD) and the structural and mechanical properties of trabecular bone in patients with OP and OA, and to explore the relationship between these two diseases. We studied 12 OP patients and 13 OA patients. We analyzed BTM (beta-CrossLaps and PINP), BMD and microstructural and biomechanical parameters (micro-CT). Our results were: OP group has higher levels of beta-CrossLaps and lower BMD at the femoral neck. Also, OP patients have a decreased volume of trabecular bone and less trabecular number, with architecture showing prevalence of rod-like trabeculae and worse connectivity than OA patients. The biomechanical parameters were worse in OP patients. BMD was correlated with almost all the structural and biomechanical parameters. Moreover, beta-CrossLaps was negatively correlated with hip BMD and with bone surface density and positively with trabecular separation. BTM, BMD and bone microstructural changes in osteoporosis are opposite to those of OA. These findings justify a less resistant bone with higher risk of fragility fractures in OP patients. These histomorphometric and biomechanical changes may be suspected by measuring of BMD and beta-CrossLaps levels. (C) 2014 Elsevier Ireland Ltd. All rights reserved.
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TI Vitamin D receptor gene polymorphisms and risk of osteoarthritis: A meta-analysis
SO EXPERIMENTAL BIOLOGY AND MEDICINE
LA English
DT Article
DE Vitamin D receptor; meta-analysis; polymorphism; osteoarthritis
ID bone-mineral density; postmenopausal women; knee osteoarthritis; hip osteoarthritis; radiographic osteoarthritis; disc degeneration; association; osteoporosis; alleles; disease
AB The vitamin D receptor (VDR) gene polymorphisms have been reported to be involved in the development of many musculoskeletal disorders, including osteoarthritis (OA). However, results were inconsistent and there is no definite conclusion regarding the association between any VDR polymorphism and the risk of OA. In this study, we conducted a meta-analysis to determine whether BsmI, TaqI, and ApaI polymorphisms in the VDR gene are associated with OA susceptibility. Literature research was performed using PubMed and EMBASE databases. Studies illustrating the association between the three VDR polymorphisms and OA were included, and their qualities were assessed using Newcastle-Ottawa scale. Eight eligible studies, recruiting 1626 cases and 2024 controls were identified. Their methodological qualities were generally good, with scores ranging from 6 to 8 points. However, throughout all summary analyses, which were performed for multiple categories and on four contrasts (allele contrast, contrast of homozygotes, recessive and dominant models), none of the VDR BsmI, TaqI, and ApaI gene polymorphisms were found to be significantly associated with the risk of OA. On the other hand, there was no significant publication bias. Results from this meta-analysis suggested that the VDR BsmI, TaqI, and ApaI gene polymorphisms might not be important predictors of OA. More studies further investigating these associations, especially taking into account of gene-gene, gene-environment interactions, and other confounding factors are warranted.
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TI The association of fatigue, comorbidity burden, disease activity, disability and gross domestic product in patients with rheumatoid arthritis. Results from 34 countries participating in the Quest-RA programme
SO CLINICAL AND EXPERIMENTAL RHEUMATOLOGY
LA English
DT Article
DE QUEST-RA; rheumatoid arthritis; fatigue; comorbidity; disease activity

ID subclinical atherosclerosis; prevalence; impact; pain
AB Objective The aim is to assess the prevalence of comorbidities and to further analyse to which degree fatigue can be explained by comorbidity burden, disease activity, disability and gross domestic product (GDP) in patients with rheumatoid arthritis (RA). Methods Nine thousands eight hundred seventy-four patients from 34 countries, 16 with high GDP (>24.000 US dollars [USD] per capita) and 18 low-GDP countries (<24.000 USD) participated in the Quantitative Standard monitoring of Patients with RA (QUEST-RA) study. The prevalence of 31 comorbid conditions, fatigue (0-10 cm visual analogue scale [VAS] [10 worst]), disease activity in 28 joints (DAS28), and physical disability (Health Assessment Questionnaire score MAW) were assessed. Univariate and multivariate linear regression analyses were performed to assess the association between fatigue and comorbidities, disease activity, disability and GDP. Results Overall, patients reported a median of 2 comorbid conditions of which hypertension (31.5%), osteoporosis (17.6%), osteoarthritis (15.5%) and hyperlipidaemia (14.2%) were the most prevalent. The majority of comorbidities were more common in high-GDP countries. The median fatigue score was 4.4 (4.8 in low-GDP countries and 3.8 in high-GDP countries, $p<0.001$). In low-GDP countries 25.4% of the patients had a high level of fatigue (>6.6) compared with 23.0% in high-GDP countries ($p<0.001$). In univariate analysis, fatigue increased with increasing number of comorbidities, disease activity and disability in both high- and low-GDP countries. In multivariate analysis of all countries, these 3 variables explained 29.4% of the variability, whereas GDP was not significant. Conclusion Fatigue is a widespread problem associated with high comorbidity burden, disease activity and disability regardless of GDP.
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Z9 59
U1 0
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PU CLINICAL & EXPER RHEUMATOLOGY
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TI Radiographic and clinical results after surgically treated tibial plateau fractures at three and twenty two years postsurgery
SO INTERNATIONAL ORTHOPAEDICS
LA English
DT Article
DE Tibial plateau fractures; Follow-up studies; Osteoarthritis; Fracture fixation; Radiography
ID follow-up; condylar fractures; operative treatment; trabecular pattern; bone loss; osteoporosis; index; calcaneum; arthritis; knee
AB Purpose We examined the development of osteoarthritis (OA) and post-traumatic bone loss after surgery for tibial plateau fractures (TPF). Methods Patients who had participated in previous follow-up (FU) examinations after TPF and primary reduction and internal fixation were re-evaluated. At the first FU, a median of three years after the accident (short-term FU), the patients underwent functional assessments and standardised X-rays to grade radiological OA and

post-traumatic bone loss. At the second FU, a median of 22 years after the accident (long-term FU), 30 patients were available. An identical protocol was applied, and additional investigations [Knee Injury and Osteoarthritis Outcome Score (KOOS) and magnetic resonance imaging (MRI) of the injured knee] were performed. Results When the subjective and objective results at first FU were compared with those of the second FU for the same patients, deterioration of symptoms, signs and radiological OA was noted; however, ten patients had no OA even after the long-term FU. Some patients developed post-traumatic bone loss. In 13 of 31 knees, there was little or no radiological evidence of bone loss at the second FU. Conclusions The short-term FU examination results after TPF have little prognostic value for the individual patient, as good results may deteriorate over the long run; however, there were some knees with no OA at the long-term FU. This is the first report focusing on post-traumatic bone loss after TPF.
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NR 31
TC 29
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U2 3
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Choi, Jin-Su
TI Cohort Profile: The Namwon Study and the Dong-gu Study
SO INTERNATIONAL JOURNAL OF EPIDEMIOLOGY
LA English
DT Article
ID intima-media thickness; aged 50 years; genetic association analysis; nutrition examination survey; cumulative smoking exposure; cardiovascular risk-factors; carotid-artery structure; korea national-health; bone-mineral density; knee osteoarthritis
AB These two cohorts were designed to examine the increasing burden of chronic diseases among Korean populations. The studies investigated determinants for stroke, osteoporosis, dementia and cancer among middle-aged and elderly Korean populations. The Namwon Study baseline survey was performed between 2004 and 2007 (n = 10 667), and followed up 4 years later (n = 8157, follow-up rate = 76.5%). The baseline survey of the Dong-gu Study was administered over 2007-2010 (n = 9260), and will be followed up between 2014 and 2015. Questionnaires included

assessment of cognitive function, psychiatric health and lifestyle factors. Clinical examinations, biochemical tests and genotyping focused on evaluating the determinants of target diseases and their intermediate phenotypes. Potential collaborators will be invited to contact the chief investigators.
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TI Effects of tibolone on osteoarthritis in ovariectomized rats: Association with nociceptive pain behaviour
SO EUROPEAN JOURNAL OF PAIN
LA English
DT Article

ID anterior cruciate ligament; estrogen replacement therapy; low-calcium diet; postmenopausal women; knee osteoarthritis; cartilage turnover; induced arthritis; receptor-alpha; bone mass; expression
AB Background To investigate the role of the synthetic steroid tibolone in the progression of osteoarthritis (OA) and in nociceptive behaviour in an experimental rat model of OA and ovariectomy (OVX)-induced osteoporosis. Methods OA was induced in Wistar rats by anterior cruciate ligament transection (ACLT) of the right knee. Osteoporosis was induced by bilateral OVX. Groups of animals were subjected to ACLT, OVX, sham or OVX + ACLT. In addition, two groups were subjected to OVX + ACLT surgeries and were orally administered 0.1 or 0.5 mg tibolone every other day for 14 consecutive weeks, starting 6 weeks after surgery. Nociceptive behaviours (secondary mechanical allodynia and weight-bearing distribution of the hind paws) were analysed prior to and every 3 weeks after surgery up to 24 weeks. At 24 weeks, histopathological studies were performed on the cartilage and synovial membranes of the knee joints, and bone metabolism was assessed by measuring serum concentrations of calcium, phosphorus and alkaline phosphatase. Results Rats undergoing ACLT or OVX + ACLT surgeries showed obvious OA changes in the joints. Animals subjected to ACLT + OVX and treated with tibolone had significantly less cartilage degeneration and synovitis and showed improved nociceptive tests compared with animals undergoing ACLT + OVX surgeries alone. OVX increased the severity of the ACLT-induced OA changes. There was a significant increase in serum alkaline phosphatase in the tibolone-treated ACLT + OVX groups. Conclusions Treatment with tibolone attenuated the development of OA, concomitantly reduced nociception and increased serum alkaline phosphatase in ACLT + OVX rats.
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PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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WC Anesthesiology; Clinical Neurology; Neurosciences
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TI Bone mineral density in patients with destructive arthrosis of the hip joint
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Bone mineral density (BMD); Dual-energy X-ray absorptiometry (DXA); Osteoarthritis of the hip; Rapidly destructive arthrosis
ID subchondral insufficiency fracture; early mri findings; femoral-head; rapid

destruction; osteoarthritis; osteoporosis; coxarthrosis; replacement; acetabulum; age
AB Recent reports have shown the existence of subchondral insufficiency fracture in rapidly destructive arthrosis of the hip joint (RDA), and the findings suggest that osteopenia is related to the pathogenesis of the rapid progression of this disease. Therefore, we measured bone mineral density (BMD) in RDA patients. We measured BMD of the lumbar spine, radius, and calcaneus using dual-energy X-ray absorptiometry in 19 patients with RDA and 75 with osteoarthritis of the hip (OA) and compared BMD at different skeletal sites between RDA and OA patients. No significant differences were observed in BMD of the lumbar spine, ultradistal radius, mid-radius, and calcaneous between the RDA and OA groups. Our data suggest that RDA is not accompanied by generalized osteoporosis. Factors other than generalized bone status, for example, BMD around the affected hip joint before destruction, need to be analyzed to elucidate the pathophysiological mechanism of RDA.
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AU Skarphedinsdottir, SJ
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TI Vitamin D deficiency in anesthesia department caregivers at the end of winter
SO ACTA ANAESTHESIOLOGICA SCANDINAVICA
LA English
DT Article
ID d insufficiency; health; assays
AB Background: To test whether the vitamin D status of anesthesia department caregivers practicing at high Northern latitudes is compatible with current recommendations, the 25-hydroxyvitamin D (25(OH) D) levels of caregivers at hospitals in Iceland (64 degrees 08' N) and in Wisconsin (43 degrees 07' N) were compared at the end of winter. Methods: Anesthesia department faculty and resident physicians, non-physician anesthetists, and critical care nurses completed a questionnaire, and provided blood samples for analysis of 25(OH) D by reverse-phase high performance liquid chromatography. Results: One hundred and six participants in Iceland and 124 participants in Wisconsin were enrolled. No difference in mean serum 25(OH) D levels between Iceland [70.53 nmol/l, standard deviation (SD) 30.87 nmol/l] and Wisconsin (70.0 nmol/l, SD 30.0 nmol/l) was observed. In Iceland and Wisconsin, 25(OH) D levels below 25 nmol/l were observed in 4.7% and 4.0%, below 50 nmol/l in 34.9% and 25.0%, and below 75

nmol/l in 56.6% and 61.3% of caregivers, respectively. Conclusions: 25(OH) D levels below the 50 nmol/l (20 ng/ml) threshold recommended by the Institute of Medicine and the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis, and below the 75 nmol/l (30 ng/ml) threshold recommended by The Endocrine Society, are highly prevalent among anesthesia caregivers working at two Northern hospitals at the end of winter who may otherwise not meet criteria to be tested. Anesthesia and critical care providers may wish to determine their 25(OH) D levels and use effective, safe, and low cost supplementation to target a 25(OH) D level compatible with optimal health. (C) 2014 The Acta Anaesthesiologica Scandinavica Foundation. Published by John Wiley & Sons Ltd
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AU Kanis, JA
McCloskey, E
Branco, J
Brandi, ML
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AF Kanis, J. A.
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TI Goal-directed treatment of osteoporosis in Europe
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE BMD; Bone marker; FRAX; Management strategy; Osteoporosis; Target-to-treat; Treat-to-target
ID bone-mineral density; vertebral fracture risk; american-diabetes-association; parathyroid-hormone 1-34; postmenopausal women; rheumatoid-arthritis; hip fracture; raloxifene treatment; strontium ranelate; blood-pressure
AB Despite the proven predictive ability of bone mineral density, Fracture Risk Assessment Tool (FRAXA (R)), bone turnover markers, and fracture for osteoporotic fracture, their use as targets for treatment of osteoporosis is limited.
Treat-to-target is a strategy applied in several fields of medicine and has recently become an area of interest in the management of osteoporosis. Its role in this setting remains controversial. This article was prepared following a European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO) working group meeting convened under the auspices of the International Osteoporosis Foundation (IOF) to discuss the feasibility of applying such a strategy in osteoporosis in Europe. Potential targets range from the absence of an incident fracture to fixed levels of bone mineral density (BMD), a desired FRAXA (R) score, a specified level of bone turnover markers or indeed changes in any one or a combination of these parameters. Despite the proven predictive ability of all of these variables for fracture (particularly BMD and FRAX), their use as targets remains limited due to low sensitivity, the influence of confounders and current lack of evidence that targets can be consistently reached. ESCEO considers that it is not currently feasible to apply a treat-to-target strategy in osteoporosis, though it did identify a need to continue to improve the targeting of treatment to those at higher risk (target-to-treat strategy) and a number of issues for the research agenda. These include international consensus on intervention thresholds and

definition of treatment failure, further exploration of the relationship between fracture and BMD, and FRAX and treatment efficacy and investigation of the potential of short-term targets to improve adherence.
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TC 51
Z9 61

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PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 0937-941X
EI 1433-2965
J9 OSTEOPOROSIS INT
JI Osteoporosis Int.
PD NOV 15
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DI 10.1007/s00198-014-2787-1
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA AS3HE
UT WOS:000344167500003
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ER

PT J
AU Hardcastle, SA
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Tobias, Jon H.
TI Osteophytes, Enthesophytes, and High Bone Mass A Bone-Forming Triad With Potential Relevance in Osteoarthritis
SO ARTHRITIS & RHEUMATOLOGY
LA English
DT Article
ID idiopathic skeletal hyperostosis; mineral density; knee osteoarthritis; hip osteoarthritis; spinal involvement; elderly-men; enthesopathy; osteoporosis; cartilage; women
AB Objective. Previous studies of skeletal remains have suggested that both enthesophytes and osteophytes are manifestations of an underlying bone-forming tendency. A greater prevalence of osteophytes has been observed among individuals with high bone mass (HBM) compared with controls. This study was undertaken to examine the possible interrelationships between bone mass, enthesophytes, and osteophytes in a population of individuals with extreme HBM. Methods. Cases of HBM (defined according to bone mineral density [BMD] Z scores on dual x-ray absorptiometry) from the UK-based HBM study were compared with a control group comprising unaffected family members and general population controls from the Chingford and Hertfordshire cohort studies. Pelvic radiographs from cases and controls were pooled and evaluated, in a blinded manner, by a single observer, who performed semiquantitative grading of the radiographs for the presence and severity of osteophytes and enthesophytes (score range 0-3 for each). Logistic regression analysis was used to identify significant associations, with a priori adjustment for age, sex, and body mass index. Results. In this study, 226 radiographs from HBM cases and 437 radiographs from control subjects were included. Enthesophytes (grade > 1) and moderate enthesophytes (grade > 2) were more prevalent in HBM cases compared with controls (adjusted odds ratio [OR] 3.00 [95% confidence interval (95% CI) 1.96-4.58], P < 0.001 for any enthesophyte; adjusted OR 4.33 [95% CI 2.67-7.02], P < 0.001 for moderate enthesophytes). In the combined population of cases and controls, the enthesophyte grade was positively associated with BMD at both the total hip and lumbar spine (adjusted P for trend < 0.001). In addition, a positive association between osteophytes and enthesophytes was observed; for each unit increase in enthesophyte grade, the odds of any osteophyte being present were increased >2-fold (P < 0.001). Conclusion. Strong interrelationships were observed between osteophytes, enthesophytes, and HBM, which may be helpful in defining a distinct subset of patients with osteoarthritis characterized by excess bone formation.
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NR 49
TC 51
Z9 58
U1 0
U2 18
PU WILEY-BLACKWELL
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J9 ARTHRITIS RHEUMATOL
JI Arthritis Rheumatol.
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IS 9
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WC Rheumatology
SC Rheumatology
GA AO3RD
UT WOS:000341251100015
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PT J
AU Lau, AG
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TI Joint bleeding in factor VIII deficient mice causes an acute loss of trabecular bone and calcification of joint soft tissues which is prevented with aggressive factor replacement
SO HAEMOPHILIA
LA English
DT Article
DE bone density; factor VIII; haemarthrosis; joint degradation; microCT; mineralization
ID long-term prophylaxis; hemophilic arthropathy; mineral density; mouse model; hemarthrosis; cartilage; disease; protein; osteoarthritis; osteoporosis
AB While chronic degenerative arthropathy is the main morbidity of haemophilia, a very high prevalence of low bone density is also seen in men and boys with haemophilia. This study investigates bone degradation in the knee joint of haemophilic mice resulting from haemarthrosis and the efficacy of aggressive treatment with factor VIII in the period surrounding injury to prevent bone pathology. Skeletally mature factor VIII knock-out mice were subjected to knee joint haemorrhage induced by puncture of the left knee joint capsule. Mice received either intravenous factor VIII treatment or placebo immediately prior to injury and at hours 4, 24, 48, 72 and 96 after haemorrhage. Mice were killed 2-weeks after injury and the joint morphology and loss of bone in the proximal tibia was assessed using microCT imaging. Quantitative microCT imaging of the knee joint found acute bone loss at the proximal tibia following injury including loss of trabecular bone volumetric density and bone mineral density, as well as trabecular connectivity density, number and thickness. Unexpectedly, joint injury also resulted in calcification of the joint soft tissues including the tendons, ligaments, menisci and cartilage. Treatment with factor VIII prevented this bone and soft tissue degeneration. Knee joint haemorrhage resulted in acute changes in adjacent bone including loss of bone density and mineralization of joint soft tissues. The rapid calcification and loss of bone has implications for the initiation and progression of osteoarthritic degradation following joint bleeding.
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NR 38
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Z9 31
U1 0
U2 2
PU WILEY-BLACKWELL
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SN 1351-8216
EI 1365-2516
J9 HAEMOPHILIA
JI Haemophilia
PD SEP 15
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VL 20
IS 5
BP 716
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DI 10.1111/hae.12399
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WC Hematology
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PT J
AU Hamidi, MS
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AF Hamidi, Maryam S.
Cheung, Angela M.
TI Vitamin K and musculoskeletal health in postmenopausal women
SO MOLECULAR NUTRITION & FOOD RESEARCH
LA English
DT Review
DE Bone; Cartilage; Osteoarthritis; Osteoporosis; Vitamin K
ID bone-mineral density; matrix gla protein; osteocalcin-deficient mice; circulating levels; gene-expression; undercarboxylated osteocalcin; osteoporotic fractures; knee osteoarthritis; biochemical markers; hand osteoarthritis
AB Aside from its important role in blood clotting, vitamin K is an important dietary factor in regulating bone and cartilage mineralization. The vitamin K requirements to maintain musculoskeletal health may be more than the current recommendations and subclinical vitamin K deficiency may be involved in the pathogenesis of osteoporosis and osteoarthritis. Observational studies suggest that diets low in vitamin K are associated with increased risk of fractures and osteoarthritis in older adults. However, so far randomized controlled trials of vitamin K supplementation in Caucasian populations have not shown clinically significant improvements in bone mineral density at major skeletal sites. Supplementation with vitamin K may reduce the risk of fractures, but this conclusion comes from clinical trials with methodological limitations. At this time, only one randomized controlled trial has examined the effect of vitamin K supplementation on radiographic hand osteoarthritis and found no overall effect. Large well-designed randomized controlled trials are needed to compare the efficacies of vitamin K1 and K2 on fractures and osteoarthritis among older adults. In summary, currently there is not enough evidence to recommend the use of vitamin K supplements for the prevention of bone loss, fractures, or osteoarthritis in postmenopausal women.
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TI Osteoblast ontogeny and implications for bone pathology: an overview
SO CELL AND TISSUE RESEARCH
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DT Review
DE Osteoblasts; Bone; Osteoblasts ontogeny; Mesenchymal stemcell; Bone pathology
ID mesenchymal stem-cells; subchondral bone; stromal cells; osteogenic differentiation; gene-expression; regulatory role; amniotic-fluid; growth-factors; transcription; receptor
AB Osteoblasts are specialized mesenchyme-derived cells accountable for bone synthesis, remodelling and healing. Differentiation of osteoblasts from mesenchymal stem cells (MSC) towards osteocytes is a multi-step process strictly controlled by various genes, transcription factors and signalling proteins. The aim of this review is to provide an update on the nature of bone-forming osteoblastic

cells, highlighting recent data on MSC-osteoblast-osteocyte transformation from a molecular perspective and to discuss osteoblast malfunctions in various bone diseases. We present here the consecutive stages occurring in the differentiation of osteoblasts from MSC, the transcription factors involved and the role of miRNAs in the process. Recent data concerning the pathogenic mechanisms underlying the loss of bone mass and architecture caused by malfunctions in the synthetic activity and metabolism of osteoblasts in osteoporosis, osteogenesis imperfecta, osteoarthritis and rheumatoid arthritis are discussed. The newly acquired knowledge of the ontogeny of osteoblasts will assist in unravelling the abnormalities taking place during their differentiation and will facilitate the prevention and/or treatment of bone diseases by therapy directed against altered molecules and mechanisms.
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TI Pulsed Electromagnetic Fields Partially Preserve Bone Mass, Microarchitecture, and Strength by Promoting Bone Formation in Hindlimb-Suspended Rats
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DT Article
DE PULSED ELECTROMAGNETIC FIELDS; DISUSE; HINDLIMB UNLOADING; THREE-POINT BENDING TEST; BONE TURNOVER; WNT/LRP5/beta-CATENIN SIGNALING
ID affects osteoclast formation; hormone replacement therapy; trabecular architecture; knee osteoarthritis; osteoporosis; stimulation; model; sclerostin; disuse; alendronate
AB A large body of evidence indicates that pulsed electromagnetic fields (PEMF), as a safe and noninvasive method, could promote in vivo and in vitro osteogenesis. Thus far, the effects and underlying mechanisms of PEMF on disuse osteopenia and/or osteoporosis remain poorly understood. Herein, the efficiency of PEMF on osteoporotic bone microarchitecture, bone strength, and bone metabolism, together with its associated signaling pathway mechanism, was systematically investigated in hindlimb-unloaded (HU) rats. Thirty young mature (3-month-old), male Sprague-Dawley rats were equally assigned to control, HU, and HU + PEMF groups. The HU + PEMF group was subjected to daily 2-hour PEMF exposure at 15 Hz, 2.4 mT. After 4 weeks, micro-computed tomography (mu CT) results showed that PEMF ameliorated the deterioration of trabecular and cortical bone microarchitecture. Three-point bending test showed that PEMF mitigated HU-induced reduction in femoral mechanical properties, including maximum load, stiffness, and elastic modulus. Moreover, PEMF increased serum bone formation markers, including osteocalcin (OC) and N-terminal propeptide of type 1 procollagen (P1NP); nevertheless, PEMF exerted minor inhibitory effects on bone resorption markers, including C-terminal crosslinked telopeptides of type I collagen (CTX-I) and tartrate-resistant acid phosphatase 5b (TRAcP5b). Bone histomorphometric analysis demonstrated that PEMF increased mineral apposition rate, bone formation rate, and osteoblast numbers in cancellous bone, but PEMF caused no obvious changes on osteoclast numbers. Real-time PCR showed that PEMF promoted tibial gene expressions of Wnt1, LRP5, beta-catenin, OPG, and OC, but did not alter RANKL, RANK, or Sost mRNA levels. Moreover, the inhibitory effects of PEMF on disuse-induced osteopenia were further confirmed in 8-month-old mature adult HU rats. Together, these results demonstrate that PEMF alleviated disuse-induced bone loss by promoting skeletal anabolic activities, and imply that PEMF might become a potential biophysical treatment modality for disuse osteoporosis. (c) 2014 American Society for Bone and Mineral Research.
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TI Designing a strategy to implement optimal conservative treatments in patients with knee or hip osteoarthritis in orthopedic practice: a study protocol of the BART-OP study

SO IMPLEMENTATION SCIENCE
LA English
DT Article
DE Osteoarthritis; Hip; Knee; Conservative treatment; Implementation strategy; Barriers and facilitators
ID stepped-care strategy; clinical-practice; eular recommendations; management; practitioners; guidelines; interview; adults
AB Background: National and international evidence-based guidelines for hip and knee osteoarthritis recommend to start with (a combination of) conservative treatments, followed by surgical intervention if a patient does not respond sufficiently to conservative treatment options. Despite these recommendations, there are strong indications that conservative treatments are not optimally used in orthopedic practice. Our study aims to quantify the use of conservative treatments in Dutch orthopedic practice and to explore the barriers and facilitators for the use of conservative treatments that should be taken into account in a strategy to improve the embedding of conservative treatments in hip and knee osteoarthritis in orthopedic practice. Methods: This study consists of three phases. First, current use of conservative treatments in patients with hip and knee osteoarthritis will be explored using an internet-based survey among at least 100 patients to identify the underused conservative treatments. Second, barriers and facilitators for the use of conservative treatments in orthopedic practice will be identified using semi-structured interviews among 10 orthopedic surgeons and 5 patients. The interviews will be followed by an internet-based survey among approximately 450 orthopedic surgeons and at least 100 patients in which the identified barriers and facilitators will be ranked by importance. Finally, an implementation strategy will be developed based on the results of the previous phases using intervention mapping. Discussion: The developed strategy is likely to result in an optimal and standardized use of conservative treatment options in hip and knee osteoarthritis in orthopedic practice, because it is focused on identified barriers and facilitators. In addition, the results of this study can be used as an example for optimizing the use of conservative care in other patient groups. In a subsequent study, the developed implementation strategy will be assessed on its effectiveness, feasibility and costs.
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NR 35
TC 8
Z9 10
U1 0
U2 10
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TI Osteoarthritis of the Second Metatarsophalangeal Joint Associated With Hallux Valgus Deformity
SO FOOT & ANKLE INTERNATIONAL
LA English
DT Article
DE degenerative osteoarthritis; hallux valgus; second metatarsophalangeal joint
ID freibergs-disease; foot
AB Background: Hallux valgus is speculated to increase the load on the second metatarsophalangeal (MTP) joint, possibly inducing degenerative osteoarthritis. In addition, the severity of arthritis may be correlated with the severity of hallux valgus. This study evaluated the association of arthritis of the second MTP joint in hallux valgus patients and the relationship between arthritis of the second MTP joint and hallux valgus deformity. Methods: A total of 382 patients (509 feet) underwent surgery for symptomatic hallux valgus deformities by the 2 senior authors (KTL, YUP) from November 2011 to December 2012. A total of 54 patients (61 feet), all female, were included in the osteoarthritis (OA) group. The rest were assigned to the nonosteoarthritis (NOA) group. There were 328 patients (448 feet) consisting of 16 men and 432 women. Osteoarthritis patients were then evaluated and classified according to joint space narrowing (JSN) and osteophyte (OP) formation. A statistical analysis was conducted to compare the 2 groups in terms of their hallux valgus angle (HVA), intermetatarsal angle (IMA), distal metatarsal articular angle (DMAA), hypermobility of the first metatarsal ray, the length of the second metatarsal bone, and the length ratio of the first and second metatarsal bones. Correlation coefficients were calculated to compare the severity of hallux valgus and the degree of osteoarthritis of the second MTP joint. Results: The IMA of the OA group was 16.2 +/- 2.9 degrees, and that of the NOA group was 15.4 +/- 3.3 degrees (P = .034, Mann-Whitney U test). The DMAA of the OA group was 18.2 +/- 8.3 degrees, and that of the NOA group was 16.1 +/- 8.0 degrees (P = .029, Mann-Whitney U test). There were no significant differences between the 2 groups in terms of the HVA, hypermobility, the length of the second metatarsal bone, and the length ratio of the second and first metatarsal bones. In the OA group, there was a positive correlation between the HVA and the degree of osteoarthritis (osteophyte formation) (gamma = 0.278, P = .030). In addition, there was a positive correlation between the IMA and the degree of osteoarthritis (. = 0.284 [JSN], 0.327 [OP] for the HVA, P = .026 [JSN],.010 [OP]). However, there was no significant difference between hypermobility and the degree of osteoarthritis (P =.356 [JSN],.635 [OP], Mann-Whitney U test). Furthermore, there were no positive correlations between the DMAA, the length of the second metatarsal bone, and the metatarsal length ratio. Conclusion: Our study demonstrated a positive correlation between HVA, IMA, and osteoarthritis of the second MTP joint. Other studies will be needed to determine the factors that are responsible for this correlation.

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AU Jones, G
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TI Lifestyle modifications to improve musculoskeletal and bone health and reduce disability - A life-course approach
SO BEST PRACTICE & RESEARCH IN CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Prevention; Epidemiology; Osteoarthritis; Osteoporosis; Rheumatoid arthritis; Smoking
ID vitamin-d supplementation; randomized controlled-trial; rheumatoid-arthritis patients; knee structural-change; body-mass index; mineral density; physical-activity; alcohol-consumption; cigarette-smoking; disease-activity
AB This review covers the evidence relating to lifestye modification in the big three musculoskeletal conditions: osteoarthritis, osteoporosis and rheumatoid arthritis. Lifestyle is of considerable importance in the first two and there is emerging evidence for rheumatoid arthritis despite it not traditionally being considered a lifestyle disease. (C) 2014 Elsevier Ltd. All rights reserved.
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TC 12
Z9 13
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AU Myszka, A
AF Myszka, A.
TI Septal aperture aetiology: still more questions than answers
SO FOLIA MORPHOLOGICA
LA English
DT Article
DE septal aperture; subtrochlear foramen; musculoskeletal stress markers; humeral robusticity; skeletal material
ID musculoskeletal stress markers; standardized scoring method; coronoid-olecranon septum; supratrochlear foramen; occupational stress; muscle markers; humerus; population; bone; age
AB Many theories have been suggested in order to explain the aetiology of septal aperture. The influence of genes, the size and shape of ulna processes, joint laxity, bone robusticity, osteoarthritis, and osteoporosis has been discussed; however, the problem has not yet been solved. The aim of the study was to examine the correlations between musculoskeletal stress markers, humeral robusticity and septal aperture. Additionally, the frequency of septal aperture according to sex, age, and skeletal side had been analysed. The skeletal material had come from a medieval cemetery in Cedynia, Poland. Skeletons of 201 adults (102 males, 99 females) had been examined and septal aperture had been scored. Six muscle attachment sites of upper limb bones had been analysed. Humeral robusticity had been calculated by use of the humeral robusticity index. The frequency of septal aperture among the population from Cedynia is 7.5%. There are no differences in septal aperture prevalence between males and females, the skeletal sides or age groups. In the analysed material, males with less developed muscle markers of right upper bones proved a higher predictable rate in having septal aperture (R = -0.34). On the left bones and among females, the converse correlation had also been found, but it is not statistically significant. The correlation between septal aperture and humeral robusticity is converse, yet small and insignificant. These results can confirm the theory of joint laxity and suggest that stronger bones (heavier muscles, more robust bones) increase joint tightness, and therefore protect the humeral lamina from septal aperture formation. But this theory needs a further detailed analysis.
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Kim, Bong-Jo
Lee, Juyoung
TI A genome-wide association study of copy-number variation identifies putative loci associated with osteoarthritis in Koreans
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
DE Osteoarthritis; Copy number variation; OA risk gene; TNKS; CA10
ID susceptibility locus; bone; disease; polymorphism; mechanisms; periostin; genetics; women; gdf5
AB Background: OA is a complex disease caused by environmental and genetic risk factors. The purpose of this study is to identify candidate copy number variations (CNVs) associated with OA. Methods: We performed a genome-wide association study of CNV to identify potential loci that confer susceptibility to or protection from OA. CNV genotyping was conducted using NimbleGen HD2 3 x 720K comparative hybridization array and included samples from 371 OA patients and 467 healthy controls. The putative CNV regions identified were confirmed with a

TaqMan assay. Results: We identified six genomic regions associated with OA encompassing CNV loci. None of six loci had previously been reported in genome-wide association studies with OA, although a genetic analysis suggested that they have functional effects. The protein product of a candidate risk gene for obesity, TNKS, targets Wnt inhibition, and this gene was significantly associated with hand and knee OA. Copy number deletion on TNKS was associated with a 1.37-fold decreased risk for OA. In addition, CA10, which shows a strong association with osteoporosis, was also significant in our study. Copy number deletion on this gene was associated with a 1.69-fold decreased risk for OA. Conclusion: We identified several CNV loci that may contribute to OA susceptibility in Koreans. Further functional investigations of these genes are warranted to fully characterize their putative association.
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NR 35
TC 9
Z9 12
U1 0
U2 4
PU BIOMED CENTRAL LTD

PI LONDON
PA 236 GRAYS INN RD, FLOOR 6, LONDON WC1X 8HL, ENGLAND
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WC Orthopedics; Rheumatology
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PT J
AU Yoshida, K
Barr, RJ
Galea-Soler, S
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Gregory, JS
AF Yoshida, Kanako
Barr, Rebecca J.
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TI Reproducibility and Diagnostic Accuracy of Kellgren-Lawrence Grading for Osteoarthritis Using Radiographs and Dual-Energy X-ray Absorptiometry Images
SO JOURNAL OF CLINICAL DENSITOMETRY
LA English
DT Article
DE Bone mineral density; DXA; Kellgren-Lawrence; osteoarthritis; osteoporosis
ID hip osteoarthritis; reliability; kappa
AB Advances in image quality from modern dual-energy X-ray absorptiometry (DXA) scanners now allow near radiograph-like quality images at a low radiation

dose. This opens potential new applications for the use of DXA scanners to study other musculoskeletal conditions, such as osteoarthritis, which is often investigated by visual assessment of radiographs. Together, osteoporosis and osteoarthritis are the 2 most common musculoskeletal conditions, both of which primarily affect older people. The aim of this study was to determine whether Kellgren-Lawrence grading of DXA images can be used to grade hip osteoarthritis as effectively as radiographs. People who had attended for recent pelvic radiographs underwent DXA of hips (50 hips from 25 people) using a GE Healthcare iDXA scanner. Three observers assigned Kellgren-Lawrence grades to each image, and grading was repeated at least 1 week apart. Intraobserver and interobserver reliability for radiographs and DXA images were calculated using quadratic-weighted kappa (QWK). People were recalled 12 months later, and the tests were repeated with both the radiograph and DXA scans taken within 2 weeks of each other. Hip DXA intraobserver reproducibility achieved a QWK range of 0.88-0.95 and interobserver reproducibility of 0.85-0.88, similar to QWK from hip radiographs. Intraobserver reliability between subject-matched radiograph and iDXA images revealed QWK ranging between 0.80 and 0.88. Reproducibility of hip osteoarthritis grading using DXA was comparable with that of radiographs in this study and similar to repeatability scores previously published in literature. Given the lower radiation dose and the opportunity to simultaneously investigate osteoporosis, DXA presents an attractive imaging option for osteoarthritis.
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FU Translational Medicine Research Initiative a consortium made up of the Universities of Aberdeen, Dundee, Edinburgh and Glasgow [WHMSB_AU_068_071]; Grampian Osteoporosis Trust (GOT); Medical Research Council [G0901242]; NHS Health Board (Grampian); NHS Health Board (Tayside); NHS Health Board (Lothian); NHS Health Board (Greater Glasgow Clyde); Scottish Enterprise; Pfizer; MRC [G0901242] Funding Source: UKRI; Medical Research Council [G0901242] Funding Source: researchfish
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U1 0
U2 4
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PI NEW YORK
PA STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA
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JI J. Clin. Densitom.
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
AU Sun, GJ
Chen, JM
Yang, SF
Parker, TMN
Goodman, GMP
Hasama, JM
Zhao, JN
AF Sun, Guojing
Chen, Jianmin
Yang, Shufeng
Parker, Thomas M. N.
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TI Therapeutic effects of OP-1 on metal wear particle induced osteoblasts injury in vitro
SO INTERNATIONAL JOURNAL OF CLINICAL AND EXPERIMENTAL MEDICINE
LA English
DT Article
DE Bone morphogenetic pritein-7; osteoblast formation; cobalt wear particles
ID total joint arthroplasty; total hip; bmp-7; osteoarthritis; cartilage; replacement; progression; impact
AB Aseptic lossening is a main reason for the revision of total joint arthroplasty. Metal-wear particles induced deregulation of bone resorption or formation has been considered as the major process of aseptic lossening. Osteogenic protein-1 (OP-1) can be used to improve bone formation. However, such effect is not clearly understood after the metal-wear particles injury. Here, we investigated the molecular mechanisms by which OP-1 regulates the activity of bone formation and anti-inflammatory after injury. Results showed that OP-1 increased cell viability and bone formation ability of impaired osteoblast cells at 72 hours after being injured

by cobalt particles. Pathway analyses revealed that both mRNA and protein levels of Smad1 and Smad5 were significantly increased upon the treatment of OP-1 in the cell injury model. Similarly, runt-related transcription factor 2 (Runx2) was also significantly upregulated in the OP-1 treated cells. Moreover, treatment with OP-1 inhibited the secretion of interleukin 6 (IL-6), tumor necrosis factor alpha (TNF-a), and IL-18 in cobalt impaired cells. Collectively, these results suggest that OP-1 could inhibit cobalt particles induced cell injury by activating Smad1, Smad5, and Runx2, and such procedure is accompanied by anti-inflammatory reaction.
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FU Nanjing Science and Technology Project [201402052]; Grant of Nanjing Military Command [14MS046]
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WC Medicine, Research & Experimental
SC Research & Experimental Medicine
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PT J
AU Khamaisy, S
Nam, D
Thein, R
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Nam, Denis
Thein, Ran
Rivkin, Gurion
Liebergall, Meir
Pearle, Andrew
TI Limb Alignment, Subluxation, and Bone Density Relationship in the Osteoarthritic Varus Knee
SO JOURNAL OF KNEE SURGERY
LA English
DT Article
DE knee; arthroplasty; subluxation; angulation
ID mineral density; proximal tibia; computed-tomography; arthroplasty; deformity; severity; osteoporosis; progression; component; condyle
AB Lower limb alignment, tibiofemoral (TF) subluxation, and bone density changes around the knee are significant factors related to the development of knee osteoarthritis (OA) and have great impact on its severity. The relation of each factor to knee OA was evaluated separately in previous studies; however, few studies have attempted to integrate their respective effects. The purpose of this study was to determine if an identifiable interaction exists between coronal limb alignment, TF subluxation, and bone density in the development of knee OA. A total of 120 patients with symptomatic, varus knee OA, with preoperative standing anteroposterior (AP) hip-to-ankle radiographs and a computed tomographic scan of the knee, were included in this study. Overall mechanical lower extremity alignment, and TF subluxation were measured on the AP radiographs, while trabecular bone density (TBD) wasmeasured in four regions of interest for both the tibial plateau and distal femur in all patients. The patients were stratified into the following four cohorts: (A) high subluxation, high angulation; (B) high subluxation, low angulation; (C) low subluxation, high angulation; and (D) low subluxation, low angulation. The mean TBD in group B was significantly higher than in groups C and D ($p = 0.003$ and 0.03, respectively). In addition, themeanTBD in group A was significantly higher than in group C. This study highlights the relationship between limb alignment, knee subluxation, and bone density in the osteoarthritic knee. These preliminary results present a proof-of-principle, that bone mineral density affects the degree of coronal alignment and TF subluxation in OA.
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PU GEORG THIEME VERLAG KG
PI STUTTGART
PA RUDIGERSTR 14, D-70469 STUTTGART, GERMANY
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JI J. Knee Surg.
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WC Orthopedics
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PT J
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TI Analysis of the Content of Cadmium and Zinc in Parts of the Human Hip Joint
SO BIOLOGICAL TRACE ELEMENT RESEARCH
LA English
DT Article
DE Cadmium; Zinc; Hip joint; Bone; AAS

ID femur head; bone; lead; exposure; tissue; metals; osteoporosis; accumulation; metabolism; fractures
AB Cadmium is an element with proven direct and indirect toxic effects on bones. Zinc affects the content of cadmium in the human body. These elements show antagonistic interactions. The aim of the research was to determine the levels of cadmium and zinc in the hip joint tissues and interactions between these elements. The study group consisted of 91 subjects, 66 women and 25 men. The tissues were obtained intraoperatively during hip endoprosthetic surgery. The levels of cadmium and zinc were assayed by the atomic absorption spectrophotometry (AAS) method. The analysis of the content of cadmium and zinc in different parts of the hip joint, i.e., articular cartilage, cortical bone, and cancellous bone of the femoral head as well as the articular capsule and a fragment of the cancellous bone taken from the intertrochanteric region of the femoral bone showed significant differences. The cancellous bone was found to have the highest potential to accumulate the elements studied, whereas part of the articular capsule the lowest. Higher levels of cadmium and zinc were observed in samples obtained from men. Patients with bone fractures had higher cadmium content than those with osteoarthritis. The study on the content of cadmium and zinc in the tissues of the hip joint is one of the primary research biomonitoring.
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PT J
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TI Disease-modifying effect of strontium ranelate in a subset of patients from the Phase III knee osteoarthritis study SEKOIA using quantitative MRI: reduction in bone marrow lesions protects against cartilage loss
SO ANNALS OF THE RHEUMATIC DISEASES
LA English
DT Article
ID placebo-controlled trial; double-blind; postmenopausal osteoporosis; joint replacement; clinical symptoms; volume loss; progression; risk; drug; osteoblasts
AB Objective To explore, using MRI, the disease-modifying effect of strontium ranelate (SrRan) treatment on cartilage volume loss (CVL) and bone marrow lesions (BMLs) in a subset of patients from a Phase III clinical trial in knee wosteoarthritis (OA) (SrRan Efficacy in Knee OsteoarthrItis triAl (SEKOIA)). Material and methods Patients with primary symptomatic knee OA were randomised to receive either SrRan 1 g/day or 2 g/day or placebo (SEKOIA study). A subset of these patients had MRIs at baseline, 12, 24 and 36 months to assess the knee cartilage volume and BMLs. Missing values were imputed and the analyses were adjusted according to Bonferroni. Results In this MRI subset, the distribution of patients (modified intention-to-treat; n=330) was 113, 105 and 112 for SrRan 1 g/day, 2 g/day and placebo, respectively. The groups were fairly balanced at baseline regarding demographics, clinical symptoms or imaging characteristics. Treatment with SrRan 2 g/day significantly decreased CVL on the plateaus at 12 (p=0.002) and 36 (p=0.003) months compared with placebo. Of note, in the medial femur and plateau, SrRan 1 g/day, but not SrRan 2 g/day, had more CVL than placebo. In patients with BML in the medial compartment at baseline, the BML score at 36 months was decreased in both treatment groups compared with the placebo group

(SrRan 1 g/day, p=0.002 and SrRan 2 g/day p=0.001, respectively), and CVL significantly decreased with SrRan 2 g/day (p=0.023) in the plateau compared with placebo. Conclusions In knee OA patients, treatment with SrRan 2 g/day was found to have beneficial effects on structural changes by significantly reducing CVL in the plateau and BML progression in the medial compartment.
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TI Satellite Cells CD44 Positive Drive Muscle Regeneration in Osteoarthritis Patients
SO STEM CELLS INTERNATIONAL
LA English
DT Article
ID femoral-neck; stem-cells; osteoporosis; bmp2
AB Age-related bone diseases, such as osteoarthritis and osteoporosis, are strongly associated with sarcopenia and muscle fiber atrophy. In this study, we analyzed muscle biopsies in order to demonstrate that, in osteoarthritis patients, both osteophytes formation and regenerative properties of muscle stem cells are related to the same factors. In particular, thanks to immunohistochemistry, transmission electron microscopy, and immunogold labeling we investigated the role of BMP-2 in muscle stem cells activity. In patients with osteoarthritis both immunohistochemistry and transmission electron microscopy allowed us to note a higher number of CD44 positive satellite muscle cells forming syncytium. Moreover, the perinuclear and cytoplasmic expression of BMP-2 assessed by in situ molecular characterization of satellite cells syncytia suggest a very strict correlation between BMP-2 expression and muscle regeneration capability. Summing up, the higher BMP-2 expression in osteoarthritic patients could explain the increased

bone mineral density as well as decreased muscle atrophy in osteoarthrosic patients. In conclusion, our results suggest that the control of physiological BMP-2 balance between bone and muscle tissues may be considered as a potential pharmacological target in bone-muscle related pathology.
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Z9 22
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PU HINDAWI LTD
PI LONDON
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WC Cell & Tissue Engineering
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PT J
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TI Comparison of microstructural and mechanical properties of trabeculae in femoral head from osteoporosis patients with and without cartilage lesions: a case-control study
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
DE Osteoporosis; Osteoarthritis; Mechanical properties; Microstructure
ID human articular-cartilage; hip osteoarthritis; cancellous bone; subchondral bone; postmenopausal women; knee osteoarthritis; european guidance; in-vitro; diagnosis; fracture
AB Background: Degeneration of cartilage will change load distribution, affecting bone remodeling progress and trabecular structure and strength. However, in human primary osteoporosis, whether cartilage lesions would also affect properties beneath trabecular bone remains unknown. In this study, we explored the differences in local trabecular properties between osteoporosis patients with and without cartilage lesions. Methods: Eighteen pairs of femoral heads with and without cartilage lesions in a weight-bearing area were collected from senile femoral neck fracture patients. The Mankin score and glycosaminoglycan (GAG) content were used to evaluate the severity of the cartilage lesions. Micro-CT and compression tests were used to obtain structural and mechanical characteristics of each trabecular column. Multivariate linear regression was performed to evaluate the association between mechanical parameters and the degree of cartilage lesion. Results: In osteoporosis patients with cartilage lesions, the bone volume fraction (BV/TV) and trabecular thickness (Tb.Th) of the trabecular column were significantly higher than that of osteoporotic control patients (all $P < 0.05$), while the Young's modulus was lower ($P = 0.024$). Multivariable linear regression indicated that in both groups, bone mineral density (BMD) significantly correlated with Young's modulus (all $P < 0.05$). While in patients with cartilage lesion, GAG content was also correlated with Young's modulus (standardized coefficient 0.443, $P < 0.01$). Conclusions: Osteoporosis patients with cartilage lesions exhibited a weaker mechanical property of trabeculae. The intimate association of cartilage lesions and impairment of trabecular mechanical properties indicate that cartilage and trabeculae belong to an interdependent functional unit. Previously proposed adaptive mechanisms in osteoarthritis might also be applicable to the progression

of osteoporosis.
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NR 38
TC 11
Z9 13
U1 1
U2 28
PU BIOMED CENTRAL LTD
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J9 BMC MUSCULOSKEL DIS
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SC Orthopedics; Rheumatology

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Nakamura, K.
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Akune, T.
TI Serum levels of 25-hydroxyvitamin D and the occurrence of musculoskeletal diseases: a 3-year follow-up to the road study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE 25-Hydroxyvitamin D; Epidemiology; Incidence; Osteoarthritis; Osteoporosis; Population-based cohort study
ID vitamin-d status; knee osteoarthritis; japanese men; hip osteoarthritis; risk-factors; osteoporosis; association; cohort; adults; women
AB Assessment of serum 25-hydroxyvitamin D levels in association with the occurrence of musculoskeletal diseases using a population-based cohort study design revealed that serum 25-hydroxyvitamin D levels could predict the occurrence of osteoporosis at the femoral neck within 3 years, but not the occurrence of knee osteoarthritis or lumbar spondylosis. The aim of this study is to clarify the association between serum 25-hydroxyvitamin D (25D) levels and occurrence of osteoporosis and osteoarthritis in the general population. The Research on Osteoarthritis/Osteoporosis Against Disability study, a large-scale population-based cohort study, was performed during 2005-2007. Serum 25D levels were measured in 1,683 participants. Of these, 1,384 individuals (81.9 %) completed a second follow-up survey 3 years later. Osteoporosis was defined according to World Health Organization criteria, in which osteoporosis is diagnosed by T-scores of bone mineral density (BMD) that are 2.5 standard deviations (SD) less than normal BMD. Knee osteoarthritis and lumbar spondylosis

were defined as Kellgren-Lawrence grade a parts per thousand yen2, using paired X-ray films. Cumulative incidences were determined according to changes in measurements using World Health Organization criteria for osteoporosis or Kellgren-Lawrence grades for osteoarthritis between the baseline and second survey. The mean (SD) serum 25D level of the 1,384 participants in both surveys was 23.4 ng/mL (6.5). The annual cumulative incidences of osteoporosis at L2-4 and the femoral neck were 0.76 and 1.83 %/year, respectively. The incidences of knee osteoarthritis and lumbar spondylosis were 3.3 and 11.4 %/year, respectively. After adjusting for potential associated factors, logistic regression analyses revealed that the odds ratio for the occurrence of femoral neck osteoporosis significantly decreased as serum 25D levels increased (+1 SD; odds ratio 0.67; 95 % confidence interval 0.49-0.92; p = 0.014). Higher serum 25D levels may prevent the occurrence of osteoporosis at the femoral neck, but not knee osteoarthritis, lumbar spondylosis, or osteoporosis at L2-4.
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FU Ministry of Education, Culture, Sports, Science and Technology [B23390172, B20390182, C20591737, C20591774, A18689031, 08033011-00262]; Ministry of Health, Labour and Welfare in Japan [H17-Men-eki-009, H18-Choujyu-037, H20-Choujyu-009, H23-Chojyu-002, H25-Nanchi-to (Men)-005, H25-Chojyu-007]; Japan Osteoporosis Society; Japanese Orthopaedic Association (JOA) [2006-1, 2010-2]; Grants-in-Aid for Scientific Research [26293329, 25670293] Funding Source: KAKEN
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10.1007/s00774-009-0080-8
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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PT J
AU Yamamoto, Y
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AF Yamamoto, Yuri
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TI Fragility Fractures in Patients with Rheumatoid Arthritis and Osteoarthritis Compared with the General Population
SO JOURNAL OF RHEUMATOLOGY
LA English
DT Article
DE RHEUMATOID ARTHRITIS; OSTEOARTHRITIS; FRACTURES; EPIDEMIOLOGY; OSTEOPOROSIS
ID bone-mineral density; knee osteoarthritis; hip osteoarthritis; risk; osteoporosis; association; register
AB Objective. To determine the rate ratios of hip and distal radius fractures in patients with rheumatoid arthritis (RA), hip osteoarthritis (OA), and knee OA. Methods. Cohort study using healthcare data (1998-2012) covering the entire population of the Skane region of Sweden. Results. We found an increased rate of

hip fracture in both female [standardized fracture rate ratio (SFR) 1.54, 95% CI 1.40-1.70] and male patients with RA (SFR 1.81, 95% CI 1.51-2.17). The hip fracture rate in female OA was reduced by 10-20%, and trochanteric fracture tended to have a higher rate ratio compared with the cervical. Conclusion. The 50-80% increased rate of hip fracture adds to the total burden of RA while the shifted distribution of cervical/trochanteric fractures in OA is in support of subchondral bone alterations.
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TC 27
Z9 30
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PU J RHEUMATOL PUBL CO
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AF Xia, Lu
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Qing, Yuxi
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TI Effects of ultrasound on estradiol level, bone mineral density, bone biomechanics and matrix metalloproteinase-13 expression in ovariectomized rabbits
SO EXPERIMENTAL AND THERAPEUTIC MEDICINE
LA English
DT Article
DE ultrasound therapy; estradiol; osteoporosis; osteoarthritis; matrix metalloproteinase-13
ID intensity pulsed ultrasound; hormone replacement therapy; distraction osteogenesis; estrogen deficiency; articular-cartilage; promoter activity; ii collagen; osteoarthritis; chondrocytes; osteoporosis
AB The aim of the present study was to observe the effect of ultrasound (US) on estradiol level, bone mineral density (BMD), bone biomechanics and matrix metalloproteinase-13 (MMP-13) expression in ovariectomized (OVX) rabbits. A total of 28 virgin New Zealand white rabbits were randomly assigned into the following groups: Control (control group), ovariectomy (OVX group), ovariectomy with ultrasound therapy (US group) and ovariectomy with estrogen replacement therapy group (ERT group). At 8 weeks after ovariectomy, the US group received ultrasound treatment while the ERT group were orally treated with conjugated estrogens, and the control and OVX groups remained untreated. The estradiol level, BMD and bone biomechanics, cartilage histology and the MMP-13 expression were analyzed after the intervention. The results indicate that the US treatment increased estradiol level, BMD and bone biomechanical function. Furthermore, the US treatment appeared to improve the recovery of cartilage morphology and decreased the expression of MMP-13 in OVX models. Furthermore, the results suggest that 10 days of US therapy was sufficient to prevent the reduction of estradiol, BMD and bone biomechanical function, to protect osteoarthritis cartilage structure, and to reduce MMP-13 transcription and expression in OVX rabbits. Therefore, US treatment may be a potential treatment for postmenopausal osteoarthritis and osteoporosis.
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PI ATHENS
PA POB 18179, ATHENS, 116 10, GREECE
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PT J
AU Pawson, DJ
Glanzmann, M
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Müller, R
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AF Pawson, D. J.
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Luechinger, R.
Mueller, R.
Stok, K. S.
TI Quantitative morphometric patterns in cartilage and bone from the humeral heads of end-stage osteoarthritis patients
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Shoulder; Arthritis; Osteoporosis; Morphometry; Micro-computed tomography; Magnetic resonance imaging
ID micro-computed tomography; subchondral bone; mineral density; articular-cartilage; glenohumeral relationships; rheumatoid-arthritis; osteoporosis; thickness; association; shoulder
AB Objective: The purpose of this work is to investigate in a quantitative manner, the gross and regional structural patterns in cartilage and bone from the humeral head of end-stage OA patients, with the goal of identifying patterns of disease. Since the prevalence of primary OA of the shoulder is increasing as the population ages and the non-traumatic degenerative changes leading to this disease are poorly understood, a site-specific morphometric analysis speaks to the structure-function remodelling relationship of the pathological anatomy. Methods: Humeral heads were harvested from twenty-one patients undergoing shoulder arthroplasty for end-stage primary OA. The samples were scanned with micro-computed tomography and magnetic resonance imaging (MRI), and registered to provide reconstructed 3D datasets of the cartilage, cortical and trabecular bone tissues. Gross visual examination of the datasets allowed samples

to be classified as OA-like, osteoporosis (OP)-like or OA/OP-like. Results: Volumes of interest (VOI) separating the OA-like samples into five distinct regions showed positive correlations between bone and cartilage morphometric parameters; specifically in areas where more cartilage has been lost, the underlying subchondral cortical bone was more porous and thicker, while the subchondral trabecular bone was more dense, including more connections and trabeculae. These differences were site-specific, where the central humeral head saw the greatest destruction of cartilage and bone sclerosis, followed by the anterior aspects. Conclusion: The ability to correlate bone and cartilage changes is valuable, as these structural cuesmay allow a more targeted diagnostic approach and a better classification of the disease, leading to improved therapies. (C) 2015 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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Z9 18
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U2 8
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PA THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND
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J9 OSTEOARTHR CARTILAGE
JI Osteoarthritis Cartilage
PD AUG 15
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PT J
AU Yang, CX
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Du, XJ
Dighe, AS
Cui, QJ
AF Yang, Chunxi
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TI Inhibition of differentiation and function of osteoclasts by dimethyl sulfoxide (DMSO)
SO CELL AND TISSUE RESEARCH
LA English
DT Article
DE DMSO; Osteoclasts; RANKL; RAW 264.7 cells; Osteoporosis
ID musculoskeletal disorders; cryopreservation; cells; bone; osteoarthritis; diseases; tissue
AB Dimethyl sulfoxide (DMSO) is an FDA-approved organosulfur solvent that is reported to have therapeutic value in osteoarthritis and osteopenia. DMSO is used as a cryoprotectant for the cryopreservation of bone grafts and mesenchymal stem cells which are later used for bone repair. It is also used as a solvent in the preparation of various scaffolds used for bone tissue engineering purposes. DMSO has been reported to inhibit osteoclast formation in vitro but the mechanism involved has remained elusive. We investigated the effect of DMSO on osteoclast differentiation and function using a conventional model system of RAW 264.7 cells. The differentiation of RAW 264.7 cells was induced by adding 50 ng/ml RANKL and the effect of DMSO (0.01 and 1 % v/v) on RANKL-induced osteoclastogenesis was investigated. Addition of 1 % DMSO significantly inhibited RANKL-induced formation of TRAP+, multinucleated, mature osteoclasts and osteoclast late-stage precursors (c-Kit(-) c-Fms(+) Mac-1(+) RANK(+)). While DMSO did not inhibit proliferation per se, it did inhibit the effect of RANKL on proliferation of RAW 264.7 cells. Key genes related to osteoclast function (TRAP, Integrin alpha V beta 3, Cathepsin K and MMP9) were significantly down-regulated by DMSO. RANKL-induced expression of RANK gene was significantly reduced in the presence of DMSO. Our data, and reports from other investigators, that DMSO enhances osteoblastic differentiation of mesenchymal stem cells and also prevents bone loss in ovarietcomized rats, suggest that DMSO has tremendous potential in the treatment of osteoporosis and bone diseases arising from uncontrolled activities of the osteoclasts.
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PU SPRINGER
PI NEW YORK
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SN 0302-766X
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J9 CELL TISSUE RES
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AU Aaron, JE
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AF Aaron, Jean E.
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TI Mapping trabecular disconnection "hotspots" in aged human spine and hip
SO BONE
LA English
DT Article
DE Cancellous bone disconnection; Fracture site microarchitecture; Ageing vertebra; Ageing femur; Osteoporosis; Osteoarthritis
ID vertebral cancellous bone; mechanical-property; regional-variations; disc degeneration; femoral-head; fracture; mass; men; osteoporosis; architecture
AB Trabecular bone disconnection is an independent factor in age-related skeletal failure where real termini (ReTm; rare in youth) may cause weakness disproportionate to tissue loss, yet their structural contribution at vulnerable locations remains uncertain. ReTm (previously recorded at the iliac crest) were mapped in "normal" aged vertebral bodies (T11-L5 autopsy; 20 females, 10 males) and corresponding proximal femora (autopsy; 10 females). Results were compared with biomechanically failed femora from orthopaedic subjects aged >58 yr (osteoporosis OP, 10 females; osteoarthritis OA, 10 females). A novel direct 2D/3D histological method was applied to large, thick (300 mu m) slices superficially silver-stained to separate ReTm (unstained) from apparent termini (planar artefacts, brown). Light microscope field co-ordinates enabled ReTm mapping and statistical testing relative to i) sex, ii) tissue sector and iii) slicing plane. In men ReTm populations were small and random while in women they were large and sector-specific. In vertebrae they clustered anterior/superior being rare posterior/inferior; in the femoral head they concentrated distal/superior and also near the fovea, being fewer distal/inferior. A distribution polarity was evident with 100% more ReTm observed transversely (i.e., on tensile-related cross struts) than longitudinally (i.e., on compression-related vertical struts). Their numbers rose in OP (BV/TV < 14%, microCT) and in OA (BV/TV > 14%), remaining polarised and sector-specific in OP only. Comparative experimentation by marrow elution of an OP animal model demonstrated "floating segments" as a possible outcome. Conclusions were supported statistically that trabecular disconnection "hotspots" at vulnerable locations are sex- and sector-specific, mainly transaxial, and subject to disease modulation. (C) 2015 The Authors. Published by Elsevier Inc.
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AU Sharifi, M
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TI Sclerostin and skeletal health
SO REVIEWS IN ENDOCRINE & METABOLIC DISORDERS
LA English
DT Review
DE Sclerostin; SOST; Osteoporosis; Wnt/beta-catenin pathway; Romosozumab; Blosozumab
ID bone-mineral density; postmenopausal women; articular-cartilage; wnt; osteoarthritis; gene; mice; sost; osteoporosis; inhibition
AB Sclerostin is a cysteine-knot glycoprotein product of the SOST gene, predominately expressed by osteocytes, that is a regulator of osteoblastic bone formation. When sclerostin binds to its low-density lipoprotein receptor-related proteins 5 and 6 on the cell membrane of osteoblasts, it inhibits canonical Wnt/beta-catenin signaling and reduces osteoblastic bone formation. Sclerostin was first identified in the study of two rare autosomal recessive disorders, sclerosteosis and van Buchem disease, which are associated with absent or reduced levels of sclerostin. Although homozygote patients with these disorders have serious adverse clinical consequences due to excessive bone growth, heterozygote patients have a normal phenotype, high bone mass, and very low risk of fractures. This has led to the concept that downregulation of sclerostin might be effective in the treatment of osteoporosis. Several humanized monoclonal antibodies to sclerostin, including romosozumab and blosozumab, are now in clinical development. Preliminary data show that these agents result in a transient increase in bone formation markers, a sustained decrease in bone resorption markers, and a robust increase in bone mineral density. If any of these agents are found to reduce fracture risk with a favorable safety profile, it will expand the options for osteoanabolic therapy for patients at high risk for fractures.

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NR 60
TC 30
Z9 34
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PT J
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TI The role of microRNAs in cellular senescence and age-related conditions of cartilage and bone
SO ACTA ORTHOPAEDICA
LA English
DT Article
ID mesenchymal stem-cells; oxidative stress; rheumatoid-arthritis; intraarticular injection; replicative senescence; osteosarcoma cells; life-span; differentiation; expression; apoptosis
AB Background and purpose - We reviewed the current state of research on microRNAs in age-related diseases in cartilage and bone. Methods - PubMed searches were conducted using separate terms to retrieve articles on (1) the role of microRNAs on aging and tissue degeneration, (2) specific microRNAs that influence

cellular and organism senescence, (3) microRNAs in age-related musculoskeletal conditions, and (4) the diagnostic and therapeutic potential of microRNAs in age-related musculoskeletal conditions. Results - An increasing number of studies have identified microRNAs associated with cellular aging and tissue degeneration. Specifically in regard to frailty, microRNAs have been found to influence the onset and course of age-related musculoskeletal conditions such as osteoporosis, osteoarthritis, and posttraumatic arthritis. Both intracellular and extracellular microRNAs may be suitable to function as diagnostic biomarkers. Interpretation - The research data currently available suggest that microRNAs play an important role in orchestrating age-related processes and conditions of the musculoskeletal system. Further research may help to improve our understanding of the complexity of these processes at the cellular and extracellular level. The option to develop microRNA biomarkers and novel therapeutic agents for the degenerating diseases of bone and cartilage appears to be promising.
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NR 92
TC 28
Z9 32
U1 0
U2 10
PU TAYLOR & FRANCIS LTD
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J9 ACTA ORTHOP
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TI The EULAR Outcome Measures Library: development and an example from a systematic review for systemic lupus erythematous instruments
SO CLINICAL AND EXPERIMENTAL RHEUMATOLOGY
LA English

DT Review
DE patient report outcomes; outcome measures; systematic review; systemic lupus erythematous
ID quality-of-life; patient-reported outcm; activity questionnaire; cultural-adaptation; validation; damage; portuguese; spanish; index
AB Objective. Patient reported outcomes (PROs) are relevant in rheumatology. Variable accessibility and validity of commonly used PROs are obstacles to homogeneity in evidence synthesis. The objective of this project was to provide a comprehensive library of "validated PROs". Methods. A launch meeting with rheumatologists, PROs methodological experts, and patients, was held to define the library's aims and scope, and basic requirements. To feed the library we performed systematic reviews on selected diseases and domains. Relevant information on PROs was collected using standardised data collection forms based on the COSMIN checklist. Results. The EULAR Outcomes Measures Library (OML), whose aims are to provide and to advise on PROs on a user-friendly manner albeit based on scientific grounds, has been launched and made accessible to all. PROs currently included cover any domain and, are generic or specifically target to the following diseases: rheumatoid arthritis, osteoarthritis, spondyloarthritis, low back pain, systemic lupus erythematosus, gout, osteoporosis, juvenile idiopathic arthritis, and fibromyalgia. Up to 236 instruments (106 generic and 130 specific) have been identified, evaluated, and included. The systematic review for SLE, which yielded 10 specific instruments, is presented here as an example. The OML website includes, for each PRO, information on the construct being measured and the extent of validation, recommendations for use, and available versions; it also contains a glossary on common validation terms. Conclusion. The OML is an in progress library led by rheumatologists, related professionals and patients, that will help to better understand and apply PROs in rheumatic and musculoskeletal diseases.
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NR 24
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Z9 13
U1 0
U2 6
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TI Association of Severe Disc Degeneration With All-Cause Mortality and Abdominal Aortic Calcification Assessed Prospectively in Older Men Findings of a Single-Center Prospective Study of Osteoporosis in Men
SO ARTHRITIS & RHEUMATOLOGY
LA English
DT Article
ID population-based cohort; hand osteoarthritis; follow-up; cardiovascular-disease; knee osteoarthritis; lumbar spine; risk-factors; back-pain; minos; atherosclerosis
AB Objective. To assess the association of disc degeneration with all-cause mortality and with the severity and rate of progression of abdominal aortic calcification (AAC) in older men. Methods. Men >50 years of age (n = 766) underwent lateral spine radiography and blood collection and were monitored prospectively. We assessed the association of disc degeneration with all-cause mortality (at 10 years), AAC severity (at baseline), and AAC progression (at 7.5 years). Results. After adjustment for confounders, including AAC, the total overall grade score for AAC predicted all-cause mortality (hazard ratio [HR] 1.20 per SD increase [95% confidence interval (95% CI) 1.01-1.43]). The highest tertile of the total overall grade score was associated with higher mortality rates (39.3/1,000 person-years for a score of >8 versus 20.9/1,000 person-years for a score of 0-8; adjusted HR 1.47 [95% CI 1.05-2.06]). The odds of severe AAC (score of >5) increased with the total disc space narrowing score (adjusted HR 1.44 per SD [95% CI 1.11-1.87]). The highest tertile of the total disc space narrowing score was associated with higher odds of severe AAC (adjusted HR 2.42 versus the lowest tertile [95% CI 1.24-4.73]). The probability of long-term AAC stability decreased with an increasing total osteophyte score (adjusted HR 0.66 per SD [95% CI 0.49-0.88]). The highest tertile of the total osteophyte score was associated with a lower probability of AAC stability (adjusted HR 0.35 versus the lowest tertile [95% CI 0.18-0.71]). Conclusion. Older men with severe disc degeneration have greater AAC severity, faster AAC progression, and higher all-cause mortality rates.
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NR 56
TC 19
Z9 19
U1 0
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TI Comments on the discordant recommendations for the use of symptomatic slow-acting drugs in knee osteoarthritis
SO CURRENT MEDICAL RESEARCH AND OPINION
LA English
DT Article
DE Chondroitin; Glucosamine; Hyaluronic acid; Osteoarthritis; Symptomatic slow-acting drugs in osteoarthritis
ID network metaanalysis; chondroitin sulfate; glucosamine sulfate; hip; placebo; viscosupplementation; management
AB Despite the near concurrent publication by influential scientific organizations, there are important differences in interpretation of the evidence base and the conclusions derived from the recent Osteoarthritis Research Society International (OARSI) guidelines for the management of knee osteoarthritis, the American College of Rheumatology (ACR) guidelines (concerning also hip and hand osteoarthritis) and the algorithm recommendations by the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO). This is particularly evident for the drug class of symptomatic slow-acting drugs in osteoarthritis. In this paper, we highlight these differences and try to understand where they derive from, proposing an evidence-based interpretation.
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TC 16
Z9 18
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TI Bone mineral density is not associated with musculoskeletal pain in postmenopausal Korean women aged aparts per thousandyen50 years
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Bone mineral density; Kellgren-Lawrence; Osteoarthritis; Osteoporosis; Pain; Postmenopausal women
ID ovariectomy-induced hyperalgesia; quality-of-life; back-pain; knee osteoarthritis; osteoporosis; alendronate; prevalence; calcitonin; teriparatide; innervation
AB Although many studies reported improvement of back pain after osteoporosis treatment, there is insufficient evidence to determine whether osteoporosis is painful. We investigated whether bone mineral density correlated with musculoskeletal pain in postmenopausal Korean women aged a parts per thousand yen50 years. Data for postmenopausal women aged a parts per thousand yen50 years were obtained from the fifth Korea National Health and Nutrition Examination Survey database. Demographics, Kellgren-Lawrence grade, and numeric rating scale for pain in the hip and knee joints, presence of back pain, and activity level were analyzed. Only subjects with dual-energy X-ray absorptiometry scans and hip and knee radiographs were included. Those with malignancy, pain medication use, or a history of fragility fractures were excluded. After univariate analysis, multiple linear regression analysis was performed to examine the significant factors correlated with the degree of hip and knee pain. Binary logistic regression analysis was performed to identify factors significantly associated with the presence of back pain. In total, 387 women were included in the data analysis. Age ($p = 0.005$) was the only significant factor correlated with the intensity of hip pain, while Kellgren-Lawrence grade ($p < 0.001$) was the only significant factor correlated with knee pain intensity in multiple regression analysis. Binary logistic regression analysis showed that age ($p = 0.002$) was the only significant factor associated with the presence of back pain. Musculoskeletal pain was not affected by or associated with the bone mineral density (BMD) of the affected body part in postmenopausal Korean women aged a parts per thousand yen50 years after adjusting for the degree of osteoarthritis.

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NR 35
TC 4
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Reginster, Jean-Yves
TI Can We Identify Patients with High Risk of Osteoarthritis Progression Who Will Respond to Treatment? A Focus on Epidemiology and Phenotype of Osteoarthritis
SO DRUGS & AGING
LA English
DT Article
ID radiographic knee osteoarthritis; evidence based recommendations; subchondral bone turnover; eular-standing-committee; task-force; hand osteoarthritis; cartilage

damage; obese women; weight-loss; field mri
AB Osteoarthritis is a syndrome affecting a variety of patient profiles. A European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis and the European Union Geriatric Medicine Society working meeting explored the possibility of identifying different patient profiles in osteoarthritis. The risk factors for the development of osteoarthritis include systemic factors (e.g., age, sex, obesity, genetics, race, and bone density) and local biomechanical factors (e.g., obesity, sport, joint injury, and muscle weakness); most also predict disease progression, particularly joint injury, malalignment, and synovitis/effusion. The characterization of patient profiles should help to better orientate research, facilitate trial design, and define which patients are the most likely to benefit from treatment. There are a number of profile candidates. Generalized, polyarticular osteoarthritis and local, monoarticular osteoarthritis appear to be two different profiles; the former is a feature of osteoarthritis co-morbid with inflammation or the metabolic syndrome, while the latter is more typical of post-trauma osteoarthritis, especially in cases with severe malalignment. Other biomechanical factors may also define profiles, such as joint malalignment, loss of meniscal function, and ligament injury. Early- and late-stage osteoarthritis appear as separate profiles, notably in terms of treatment response. Finally, there is evidence that there are two separate profiles related to lesions in the subchondral bone, which may determine benefit from bone-active treatments. Decisions on appropriate therapy should be made considering clinical presentation, underlying pathophysiology, and stage of disease. Identification of patient profiles may lead to more personalized healthcare, with more targeted treatment for osteoarthritis.
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FU Bayer; IBSA; Genevrier; Merck Sharp Dohme (MSD); Novartis; Nutraveris; Pfizer; Rottapharm; Servier; SMB; Theramex; AMGEN; GSK; Alliance for Better Bone Health; MSD; Eli Lilly; Merck; Medtronic; Roche; Flexion (PharmaNet); Lily; Q-Med; SmithNephew; Schering-Plough; GlaxoSmithKline (GSK); NiCox; Pierre Fabre; Expanscience; TRB Chemedica; Lilly; Iroko Pharmaceuticals; Bioiberica SA; AgNovos Healthcare USA; D3A; Medimaps; Unigene; Sanofi-Aventis; Warner-Chilcott; Sanofi Aventis; Samumed; Flexion; Fidia; NIH; Genevier; Danone; Negma; Wyeth; GlaxoSmithKline; Merckle; Nycomed-Takeda; NPS; IBSA-Genevrier; UCB; Asahi Kasei; Bristol Myers Squibb; Teva; Organon; Therabel; Boehringer; Chiltern; Galapagos; Teijin; Ebewee Pharma; Sodiac; Analis; Novo-Nordisk; Will Pharma; Medical Research Council [G0400491, MC_U147585824, MC_U147585827, MC_UP_A620_1014, MC_UU_12011/1, MC_U147585819, U1475000001] Funding Source: researchfish; National Institute for Health Research [NF-SI-0513-10085, NF-SI-0508-10082] Funding Source: researchfish; MRC [MC_U147585827, G0400491, MC_U147585819] Funding Source: UKRI
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TI Sarcopenia: a histological and immunohistochemical study on age-related muscle impairment
SO AGING CLINICAL AND EXPERIMENTAL RESEARCH
LA English
DT Article
DE Sarcopenia; BMP4; Osteoporosis; Osteoarthritis; Satellite stem cells; Myostatin
ID skeletal-muscle; fragility fractures; bone; mass; osteoporosis; dysfunction; diseases; cells; beta
AB Background Sarcopenia and osteoporosis increase the risk of bone fracture in the elderly due to the loss of muscle mass and the decrease in bone mineral density. Myostatin and Bone Morphogenetic Proteins (BMPs) are important molecules involved in muscle mass homeostasis. Aim In this study, we investigated the role of BMP4 and myostatin in the pathophysiogenesis of sarcopenia related to osteoporosis and osteoarthritis. Methods Muscle atrophy, BMP4 and myostatin expression were evaluated in 27 biopsies of osteoarthritic (OA) women and 27 biopsies from osteoporotic (OP) group by immunohistochemical reaction. Muscle stem cell niches were investigated by transmission electron microscopy analysis.

Results Myostatin and BMP4 expression was evaluated by counting the number of positive fibers on 25 high-power field. We found that OA muscle biopsies showed a significantly higher number of BMP4-positive fibers (37.35 +/- 5.63) as compared with muscle of OP patients (9.60 +/- 1.57). Unlike BMP4 expression, the number of myostatin-positive fibers in OP patients (33.95 +/- 4.10) was significantly higher compared to OA group (13.86 +/- 1.68). The ultrastructural analysis of BMP4-positive tissues displayed the presence of a high rate of satellite cells both single or as syncytium giving proof of muscle regeneration capability. Discussion Our results indicated that sarcopenia and osteoporosis shared an impairment of metabolic activity. Conversely, the molecular mechanisms of OA seem to inhibit the onset of an age-related sarcopenia. Conclusion The characterization of molecular mechanisms underlying the bone-muscle crosstalk could open new therapeutic perspectives in elderly diseases.
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AU Pomin, VH
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TI Medical Gains of Chondroitin Sulfate Upon Fucosylation
SO CURRENT MEDICINAL CHEMISTRY
LA English
DT Article
DE Carbohydrate-based drug discovery; carbohydrate-based drug development; chondroitin sulfate; fucosylation; fucosylated chondroitin sulfate; glycosaminoglycans
ID depolymerized holothurian glycosaminoglycan; sea-cucumber; anticoagulant activity; fucose branches; physicochemical characteristics; antithrombotic mechanisms; polysaccharide account; echinoderm; muscle; dhg
AB Chondroitin sulfate (CS) is a glycosaminoglycan (GAG) composed of alternating N-acetyl galactosamine and glucuronic acid units within disaccharide building blocks. CS is a key functional component in proteoglycans of cartilaginous tissues. Owing to its numerous biological roles, CS is widely explored in the pharmaceutical market as nutraceutical ingredient commonly utilized against arthritis, osteoarthrosis, and sometimes osteoporosis. Tissues like shark cartilage and bovine trachea are common sources of CS. Nonetheless, a new CS type has been introduced and investigated in the last few decades in what regards its medical potentials. It is named fucosylated chondroitin sulfate (FucCS). This less common CS type is isolated exclusively from the body wall of sea cucumbers. The presence of fucosyl branching units in the holothurian FucCS gives to this unique GAG, therapeutic properties in various pathophysiological systems which are inexistent in the common CS explored in the market. Examples of these systems are

coagulation, thrombosis, hemodialysis, atherosclerosis, cellular growth, angiogenesis, fibrosis, tumor growth, inflammation, viral and protozoan infections, hyperglycemia, diabetes-related pathological events and tissue damage. This report aims at describing the medical benefits gained upon fucosylation of CS. Clinical prospects of these medical benefits are also discussed herein.
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PA EXECUTIVE STE Y-2, PO BOX 7917, SAIF ZONE, 1200 BR SHARJAH, U ARAB EMIRATES
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J9 CURR MED CHEM
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PG 11
WC Biochemistry & Molecular Biology; Chemistry, Medicinal; Pharmacology & Pharmacy
SC Biochemistry & Molecular Biology; Pharmacology & Pharmacy
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PT J
AU Muraki, S
Akune, T
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TI Does osteophytosis at the knee predict health-related quality of life decline? A 3-year follow-up of the ROAD study
SO CLINICAL RHEUMATOLOGY
LA English
DT Article
DE Epidemiology; Longitudinal Studies; Osteoarthritis; Pain; WOMAC
ID individual radiographic features; osteoarthritis index; patellofemoral joint; hip osteoarthritis; united-states; association; prevalence; cohort; population; arthritis
AB The objective of the present longitudinal study was to clarify whether osteophytosis and joint space narrowing predict quality of life (QOL) decline using a longitudinal population-based cohort of the Research on Osteoarthritis/osteoporosis Against Disability (ROAD) study. The present study analyzed 1,525 participants who completed the radiographic examination at baseline and questionnaires regarding QOL at a 3-year follow-up (546 men and 979 women; mean age, 67.0 +/- 11.0 years). This study examined the associations of osteophyte area (OPA) and minimum joint space width (mJSW) in the medial compartment of the knee at baseline with pain and physical functional disability measured by the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). OPA and mJSW in the medial compartment of the knee were measured using a knee osteoarthritis (OA) computer-aided diagnosis system. Overall, OPA independently predicted physical functional disability after 3 years of follow-up.

When analyzed in men and women separately, OPA, rather than mJSW, was an independent predictor for pain and physical functional disability after 3 years of follow-up in men. OPA, rather than mJSW, also predicted worsening of pain in men during the 3-year follow-up, whereas in women, mJSW, rather than OPA, predicted worsening of pain. In conclusion, the present longitudinal study using a large-scale population from the ROAD study found gender differences in the association of osteophytosis and joint space narrowing with pain and physical functional disability.
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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WC Rheumatology
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TI Bone and cartilage characteristics in postmenopausal women with mild knee radiographic osteoarthritis and those without radiographic osteoarthritis
SO JOURNAL OF MUSCULOSKELETAL & NEURONAL INTERACTIONS
LA English
DT Article
DE Osteoarthritis; Bone Strength; Kellgren and Lawrence Grade; Quantitative MRI; Postmenopausal Women
ID gadolinium-enhanced mri; mineral density; articular-cartilage; osteo-arthritis; hip; osteoporosis; expression; association; population; patterns
AB Objectives: To evaluate the association between radiographically-assessed knee osteoarthritis and femoral neck bone characteristics in women with mild knee radiographic osteoarthritis and those without radiographic osteoarthritis. Methods: Ninety postmenopausal women (mean age [SD], 58 [4] years; height, 163 [6] cm; weight, 71 [11] kg) participated in this cross-sectional study. The severity of radiographic knee osteoarthritis was defined using Kellgren-Lawrence grades 0=normal (n=12), 1=doubtful (n=25) or 2=minimal (n=53). Femoral neck bone mineral content (BMC), section modulus (Z), and cross-sectional area (CSA) were measured with DXA. The biochemical composition of ipsilateral knee cartilage was estimated using quantitative MRI measures, T2 mapping and dGEMRIC. The associations between radiographic knee osteoarthritis grades and bone and cartilage characteristics were analyzed using generalized linear models. Results: Age-, height-, and weight-adjusted femoral neck BMC (p for linearity=0.019), Z (p for linearity=0.033), and CSA (p for linearity=0.019) increased significantly with higher knee osteoarthritis grades. There was no linear relationship between osteoarthritis grades and knee cartilage indices. Conclusions: Increased DXA assessed hip bone strength is related to knee osteoarthritis severity. These results are hypothesis driven that there is an inverse relationship between osteoarthritis and osteoporosis. However, MRI assessed measures of cartilage do not discriminate mild radiographic osteoarthritis severity.
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J9 J MUSCULOSKEL NEURON
JI J. Musculoskelet. Neuronal Interact.
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PT J
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TI Total hip arthroplasty for acute acetabular fractures: a review of the literature
SO EXPERT REVIEW OF MEDICAL DEVICES
LA English
DT Review
DE acetabulum; acute; arthroplasty; fracture; hip
ID reduction internal-fixation; low-friction arthroplasty; elderly-patients; heterotopic ossification; older population; risk-factors; dislocations; replacement; management; classification

AB There have been many advances in the treatment of acetabular fractures; however, the role of total hip arthroplasty (THA) as part of acute fracture management is not well-defined. The indications to acutely manage an acetabular fracture with THA include patients who were older than 65 years of age, who had extensive intra-articular comminution, impaction of the acetabular dome, a displaced-impacted femoral neck fracture, presented with severe osteopenia or osteoporosis, or preexisting osteoarthritis. Implant survivorship and clinical outcomes were favorable with low complications when managing an acetabular fracture with THA. THA may be an effective option for treating acetabular fractures in appropriately selected patients.
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CR Barrett WP, 2013, J ARTHROPLASTY, V28, P1634, DOI 10.1016/j.arth.2013.01.034
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U1 0
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TI Does primary total knee arthroplasty for acute knee joint fracture maintain autonomy in the elderly? A retrospective study of 21 cases
SO ORTHOPAEDICS & TRAUMATOLOGY-SURGERY & RESEARCH
LA English
DT Article
DE Knee; Joint fracture; Total knee arthroplasty; Osteoporosis; Peri-articular
ID tibial plateau fractures; distal femoral fractures; femur fractures; fixation; management; mortality; injury; old
AB INTRODUCTION: Due to poor results and failure encountered in osteosynthesis of peri-articular fracture of the knee, arthroplasty may be suggested to osteopenic elderly subjects. All osteosynthesis techniques entail loss of independence and are associated with elevated mortality. No studies definitively establish better management of such fractures. HYPOTHESIS: Total arthroplasty provides better autonomy after peri-articular fracture of the knee. MATERIAL AND METHOD: Seventy-nine patients aged over 65years were operated on for peri-articular fracture of the knee between April 2008 and March 2013. In 21 cases, treated by a single surgeon, total knee arthroplasty was performed in view of osteopenia or osteoarthritis. Mean age was 79years (range, 68-96years). There were 10 distal femoral and 11 proximal tibial fractures. Mean follow-up was 31months (range, 9-68months). Cases of pathologic fracture, failed osteosynthesis and non-operative management were excluded. All patients showed severe osteopenia on radiology and half already had advanced osteoarthritis. RESULTS: One-year mortality was 14%. At last follow-up, the revision rate was 9.5%. Fifteen patients were followed up. Mean Parker score fell from 7.2 (range, 2-9) preoperatively to 4.6 (range, 0-9) at last follow-up, indicating loss of independence. At follow-up, mean IKS score was 116.6 (range, 0-192) with mean IKS knee score of 78.4 (range, 0-100) and IKS

function score of 38.2 (range, 0-100). Mean Oxford score was 36/60 (range, 18-53). Global IKS and IKS function scores were significantly better in case of ASA-2 than ASA-3 ($P<0.05$). There was no difference between femoral and tibial fractures in terms of IKS or Oxford score or loss of independence. DISCUSSION: Total knee arthroplasty can be considered for peri-articular fracture of the knee in osteopenic geriatric patients. Although surgical revision was less frequent than after osteosynthesis and resumption of weight-bearing was immediate, autonomy was still impaired. Mortality was comparable to other reports. Copyright (C) 2015 Elsevier Masson SAS. All rights reserved.
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AU Malaise, O
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TI Selective glucocorticoid receptor modulator compound A, in contrast to prednisolone, does not induce leptin or the leptin receptor in human osteoarthritis synovial fibroblasts
SO RHEUMATOLOGY
LA English
DT Article
DE leptin; glucocorticoids; compound A; osteoarthritis; synovial fibroblast
ID rheumatoid-arthritis; knee osteoarthritis; mice; expression
AB Objective. Glucocorticoids are powerful anti-inflammatory compounds that also induce the expression of leptin and leptin receptor (Ob-R) in synovial fibroblasts through TGF-beta signalling and Smad1/5 phosphorylation. Compound A (CpdA), a selective glucocorticoid receptor agonist, reduces inflammation in murine arthritis models and does not induce diabetes or osteoporosis, thus offering an improved risk: benefit ratio in comparison with glucocorticoids. Due to the detrimental role of leptin in OA pathogenesis, we sought to determine whether CpdA also induced leptin and Ob-R protein expression as observed with prednisolone. Methods. Human synovial fibroblasts and chondrocytes were isolated from the synovium and

cartilage of OA patients after joint surgery. The cells were treated with prednisolone, TGF-beta 1, TNF-alpha and/or CpdA. Levels of leptin, IL-6, IL-8, MMP-1 and MMP-3 were measured by ELISA and expression levels of Ob-R phospho-Smad1/5, phospho-Smad2, alpha-tubulin and glyceraldehyde 3-phosphate dehydrogenase were analysed by western blotting. Results. CpdA, unlike prednisolone, did not induce leptin secretion or Ob-R protein expression in OA synovial fibroblasts. Moreover, CpdA decreased endogenous Ob-R expression and down-regulated prednisolone-induced leptin secretion and Ob-R expression. Mechanistically, CpdA, unlike prednisolone, did not induce Smad1/5 phosphorylation. CpdA, similarly to prednisolone, down-regulated endogenous and TNF-alpha-induced IL-6, IL-8, MMP-1 and MMP-3 protein secretion. The dissociative effect of CpdA was confirmed using chondrocytes with no induction of leptin secretion, but with a significant decrease in IL-6, IL-8, MMP-1 and MMP-3 protein secretion. Conclusion. CpdA, unlike prednisolone, did not induce leptin or Ob-R in human OA synovial fibroblasts, thereby demonstrating an improved risk: benefit ratio.
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Z9 16
U1 1
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AU Shah, M
Gburcik, V
Reilly, P
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AF Shah, M.
Gburcik, V.
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Pitsillides, A. A.
TI LOCAL ORIGINS IMPART CONSERVED BONE TYPE-RELATED DIFFERENCES IN HUMAN OSTEOBLAST BEHAVIOUR
SO EUROPEAN CELLS & MATERIALS
LA English
DT Article
DE In vitro; human osteoblasts; shoulder arthroplasty; vasculature; subchondral; trabecular; cortical; osteogenic differentiation
ID in-vitro; subchondral bone; trabecular bone; transcription factor; prostaglandin e-2; cortical bone; growth-factor; cells; differentiation; expression
AB Osteogenic behaviour of osteoblasts from trabecular, cortical and subchondral bone were examined to determine any bone type-selective differences in samples from both osteoarthritic (OA) and osteoporotic (OP) patients. Cell growth, differentiation; alkaline phosphatase (TNAP) mRNA and activity, Runt-related transcription factor-2 (RUNX2), SP7-transcription factor (SP7), bone sialoprotein-II (BSP-II), osteocalcin/bone gamma-carboxyglutamate (BGLAP), osteoprotegerin (OPG, TNFRSF11B), receptor activator of nuclear factor-kappa beta ligand (RANKL, TNFSF11) mRNA levels and proangiogenic vascular endothelial growth factor-A (VEGF-A) mRNA and protein release were assessed in osteoblasts from paired humeral head samples from age-matched, human OA/OP (n = 5/4) patients. Initial outgrowth and increase in cell number were significantly faster ($p < 0.01$) in subchondral and cortical than trabecular osteoblasts, in OA and OP, and this bone type-related differences were conserved despite consistently faster growth in OA. RUNX2/SP7 levels and TNAP mRNA and protein activity were, however, greater in trabecular than subchondral and cortical osteoblasts in OA and OP. BSP-II levels were significantly greater in trabecular and lowest in cortical osteoblasts in both OA and OP. In contrast, BGLAP levels showed divergent bone type-selective behaviour; highest in osteoblasts from subchondral origins in OA and trabecular origins in OP. We found virtually identical bone type-related differences, however, in TNFRSF11B:TNFSF11 in OA and OP, consistent with greater potential for paracrine effects on osteoclasts in trabecular osteoblasts. Subchondral osteoblasts (OA) exhibited highest VEGF-A mRNA levels and release. Our data indicate that human osteoblasts in trabecular, subchondral and cortical bone have inherent, programmed diversity, with specific bone type-related differences in growth, differentiation and pro-angiogenic potential in vitro.
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TI Exercise as medicine - evidence for prescribing exercise as therapy in 26 different chronic diseases
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DE physical activity; physical training; type 2 diabetes; cardiovascular; cancer; neuropsychiatric
ID quality-of-life; chronic heart-failure; polycystic ovarian syndrome; randomized controlled-trial; low-back-pain; cardiovascular risk-factors; time physical-activity; dependent diabetes-mellitus; resting blood-pressure; density-lipoprotein cholesterol
AB This review provides the reader with the up-to-date evidence-based basis for prescribing exercise as medicine in the treatment of 26 different diseases: psychiatric diseases (depression, anxiety, stress, schizophrenia); neurological diseases (dementia, Parkinson's disease, multiple sclerosis); metabolic diseases (obesity, hyperlipidemia, metabolic syndrome, polycystic ovarian syndrome, type 2 diabetes, type 1 diabetes); cardiovascular diseases (hypertension, coronary heart disease, heart failure, cerebral apoplexy, and claudication intermittent); pulmonary diseases (chronic obstructive pulmonary disease, asthma, cystic fibrosis); musculo-skeletal disorders (osteoarthritis, osteoporosis, back pain, rheumatoid arthritis); and cancer. The effect of exercise therapy on disease pathogenesis and symptoms are given and the possible mechanisms of action are discussed. We have interpreted the scientific literature and for each disease, we provide the reader with our best advice regarding the optimal type and dose for prescription of exercise.
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TI A novel 3D-printed device for localization and extraction of trabeculae from human femoral heads: a comparison with traditional visual extraction
SO OSTEOPOROSIS INTERNATIONAL
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DT Article
DE 3D printing; Bone sampling method; Heterogeneity; Spatial deviation error; Trabeculae
ID cancellous bone; mechanical-property; postmenopausal women; hip osteoarthritis; subchondral bone; micro-ct; osteoporosis; fractures; neck; microarchitecture
AB A Summary In this study, we propose a novel method for accurate trabeculae extraction from human femoral heads using 3D-printing techniques and compare spatial deviation errors between this novel method and the conventional method. We found that spatial deviation errors, which indicate inaccuracy and unreliability, were significantly higher with the conventional method. Introduction Assessment of structural and mechanical properties of local bone is important in the study of pathological changes associated with musculoskeletal degenerative diseases. However, the widely used visual extraction method (VIS) for trabecular columns showed large deviations from veridicality, referred to as spatial deviation errors (SDE). Here, we propose a novel method for accurately locating and trephining trabeculae using a 3D-printed (3DP) positioning device and also evaluate the SDE of the VIS. Methods Twenty femoral heads were obtained from osteoporotic patients, and the trabecular columns were extracted from the principal compressive trabeculae by VIS (n = 10) or the 3DP (n = 10) method. Morphological, structural, and mechanical properties were compared between both groups along with the recorded errors in spatial deviation. Results Compared with the 3DP group, the average angle of central axis deflection in the VIS group was significantly greater; SDE in the VIS group was 26.1, 8.8, 4.1, 9.8, 7.2, 8.1, and 10.1 % greater for bone mineral density, bone volume/tissue volume ratio, trabecular thickness, trabecular number, Young's modulus, yield strength, and ultimate strength. Conclusion In this study, a high degree of SDE was demonstrated in the VIS, which indicates that the conventional technique is unreliable. Additionally, accurate sample fabrication and credible quantitative analysis of local trabeculae among individuals can be achieved with the aid of computed tomography and the 3DP device, thus providing a more objective method for researching musculoskeletal degenerative diseases and possibly a better clinical understanding of these disorders.
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TI Prevalence of diffuse idiopathic skeletal hyperostosis (DISH) of the whole spine and its association with lumbar spondylosis and knee osteoarthritis: the ROAD study
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Prevalence; Diffuse idiopathic skeletal hyperostosis; Knee osteoarthritis; Lumbar spondylosis; ROAD study
ID posterior longitudinal ligament; metabolic syndrome; risk-factors; population; ossification; manifestations; fractures; hungary; insulin
AB We aimed to assess the prevalence of diffuse idiopathic skeletal hyperostosis (DISH) and its association with lumbar spondylosis (LS) and knee osteoarthritis (KOA) using a population-based cohort study entitled Research on Osteoarthritis/osteoporosis Against Disability (ROAD). In the baseline ROAD study, which was performed between 2005 and 2007, 1,690 participants in mountainous and coastal areas underwent anthropometric measurements and radiographic examinations of the whole spine (cervical, thoracic, and lumbar) and both knees. They also completed an interviewer-administered questionnaire. Presence of DISH was diagnosed according to Resnick criteria, and LS and KOA were defined as Kellgren-Lawrence (KL) grade a parts per thousand yen3. Among the 1,690 participants, whole-spine radiographs of 1,647 individuals (97.5 %; 573 men, 1,074 women; mean age, 65.3 years) were evaluated. Prevalence of DISH was 10.8 % (men 22.0 %, women 4.8 %), and was significantly higher in older participants (presence of DISH 72.3 years, absence of DISH 64.4 years) and mainly distributed at the thoracic spine (88.7 %). Logistic regression analysis revealed that presence of DISH was significantly associated with older age [+1 year, odds ratio (OR): 1.06, 95 % confidence interval (CI): 1.03-1.14], male sex (OR: 5.55, 95 % CI: 3.57-8.63), higher body mass index (+1 kg/m(2), OR: 1.08, 95 % CI: 1.02-1.14), presence of LS (KL2 vs KL0: 1, OR: 5.50, 95 % CI: 2.81-10.8) (KL a parts per thousand yen3 vs KL0: 1, OR:

4.09, 95 % CI: 2.08-8.03), and presence of KOA (KL a parts per thousand yen3 vs KL0: 1, OR: 1.89, 95 % CI: 1.14-3.10) after adjusting for smoking, alcohol consumption, and residential area (mountainous vs coastal). This cross-sectional population-based study clarified the prevalence of DISH in general inhabitants and its significant association with LS and severe KOA.
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NR 32
TC 87
Z9 98
U1 0
U2 5
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WC Endocrinology & Metabolism; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Research & Experimental Medicine
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AU Kielbowicz, Z
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TI The experimental osteoporosis in sheep - clinical approach
SO POLISH JOURNAL OF VETERINARY SCIENCES
LA English
DT Article
DE osteoporosis; animal model; indentation; mapping of elements; mechanical examinations; glucocorticosteroids
ID ovariectomy; model
AB The implementation of new methods of oseoporotic therapy requires tests on an animal model. One of the best is the sheep, whose numerous advantages over other models are described in the literature. The aim of this study was induction of osteoporosis using steroids and ovariorectomy methods in sheep and description of the change in parameters with regard to healthy sheep. The study was

performed on female "merino" breed sheep divided into three groups: Negative control (NC) healthy animals, positive control (PC) ovariorectomised animals and steroid group (SC) where methylprednisolone was implemented. Blood tests, diagnostic arthroscopy, quantitative computed tomography and X-Ray micro-tomography of bone were carried out. Blood tests revealed a decreased level of estrogens, progesterone and increased parathormone and cortisol levels in the SC group. A decrease in bone turnover markers and an increase in bone resorption markers in all groups were also noted. Diagnostic arthroscopy revealed osteoarthrosis in PC and SC groups. Radiological density tests showed a slight decrease in PC and NC groups whereas there was more than a triple decrease in SC. Results obtained from microCT showed quickly developing osteoporosis in the SC group, which is reflected in numerous parameters analysed in this study. The best effects for osteoporosis induction were obtained using ovariorectomised sheep with methylprednisolone injections.
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NR 19
TC 10
Z9 11
U1 0
U2 10
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AU Amirouche, F
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Barmada, R.
TI Primary cup stability in THA with augmentation of acetabular defect. A comparison of healthy and osteoporotic bone
SO ORTHOPAEDICS & TRAUMATOLOGY-SURGERY & RESEARCH
LA English
DT Article
DE Arthroplasty; Replacement; Hip prosthesis; Bone cements; Osteoporosis
ID total hip-arthroplasty; revision arthroplasty; knee arthroplasty; implant design; femoral-head; follow-up; osteoarthritis; reconstruction; micromotions; replacement
AB Background context: Reconstruction of acetabular defect has been advocated as standard procedure in total hip arthroplasty. The presence of bony defects at the acetabulum is viewed as a cause of instability and acetabular wall augmentation is often used without proper consideration of surrounding bone density. The initial cup-bone stability is, however, a challenge and a number of studies supported by clinical follow-ups of patients suggested that if the structural graft needs supporting more than 50% of the acetabular component, a reconstruction cage device spanning ilium to ischium should be preferred to protect the graft and provide structural stability. This study aims to (1) investigate the relationship between cup motion and bone density and (2) quantify the re-distribution of stress at the defect site after augmentation. Hyphotesis: Paprosky type I or II, acetabular defects, when reconstructed with bone screws supported by bioabsorbable calcified triglyceride bone cement are significantly less effective for osteoporotic bone than healthy bone. Materials and methods: Acetabular wall defects were reconstructed on six cadaveric subjects with bioabsorbable calcified triglyceride bone cement using a re-bar technique. Data of the specimen with higher bone density was used to validate a Finite Element Model. Values of bone apparent density ranging from healthy to osteoporotic were simulated to evaluate (1) the cup motion, through both displacement and rotation, (2) and the von Mises stress distribution. Results: Defect reconstruction with bone screws and bioabsorbable calcified triglyceride bone cement results in a re-distribution of stress at the defect site. For a reduction of 65% in bone density, the cup displacement was similar to a healthy bone for loads not exceeding 300 N, as load progressed up to 1500 N, the reconstructed defect showed increase of 99 mu m (128%) in displacement and of 0.08 degrees in rotation angle. Conclusions: Based on the results, we suggest that an alternative solution to wall defect augmentation with bone screws supported by bioabsorbable calcified triglyceride bone cement, be used for osteoporotic bone.
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TC 15
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U2 5
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PT J
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TI Characterization of Bone Perfusion by Dynamic Contrast-Enhanced Magnetic Resonance Imaging and Positron Emission Tomography in the Dunkin-Hartley Guinea Pig Model of Advanced Osteoarthritis
SO JOURNAL OF ORTHOPAEDIC RESEARCH
LA English
DT Article
DE Osteoarthritis; PET; MRI; subchondral bone; perfusion
ID f-18 fluoride-ion; subchondral bone; articular-cartilage; intraosseous pressure; avascular necrosis; blood-flow; pet; hip; histomorphometry; abnormality
AB This study characterizes changes in subchondral bone circulation in OA and examines relationships to bone structure and cartilage degeneration in Dunkin-Hartley guinea pigs. We have used dynamic contrast-enhanced MRI (DCE-MRI) and PET, with pharmacokinetic modeling, to characterize subchondral bone perfusion. Assessments are made of perfusion kinetics and vascular permeability by MRI, and blood volume and flow, and radionuclide incorporation into bone, by PET. These parameters are compared to cartilage lesion severity and bone histomorphometry. Assessments of intraosseous thrombi are made morphologically. Prolonged signal enhancement during the clearance phase of MRI correlated with OA severity and suggested venous stasis. Vascular permeability was not increased indicating that transvascular migration of contrast agent was not responsible for signal enhancement. Intraosseous thrombi were not observed. Decreased perfusion associated with severe OA was confirmed by PET and was associated with reduced radionuclide incorporation and osteoporosis. MRI and PET can be used to characterize kinetic parameters of circulation in OA and correlate them with subchondral bone metabolism of interest to the pathophysiology of OA. The significance of these observations may lie in alterations induced in the expression of cytokines by OA osteoblasts that are related to bone remodeling and cartilage breakdown. (c) 2014 Orthopaedic Research Society. Published by Wiley Periodicals, Inc. J Orthop Res 33:???-???, 2015.
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NR 34
TC 24
Z9 31
U1 0
U2 13
PU WILEY
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PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 0736-0266
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J9 J ORTHOP RES
JI J. Orthop. Res.
PD MAR 15
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VL 33
IS 3
BP 366
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DI 10.1002/jor.22768
PG 7
WC Orthopedics
SC Orthopedics
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ER

PT J
AU Kobayashi, N
Inaba, Y

Yukizawa, Y
Takagawa, S
Ike, H
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AF Kobayashi, Naomi
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Takagawa, Shu
Ike, Hiroyuki
Kubota, So
Naka, Takuma
Saito, Tomoyuki
TI Bone mineral density distribution in the proximal femur and its relationship to morphologic factors in progressed unilateral hip osteoarthritis
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Osteoarthritis of the hip; Bone mineral density; Dual energy X-ray absorptiometry
ID femoral-neck; postmenopausal women; fracture risk; osteoporosis; reliability; geometry; men
AB Although an adverse relationship between osteoporosis and osteoarthritis (OA) has been reported, it remains controversial. In most previous reports of OA, bone mineral density (BMD) changes in the subtrochanteric region have not been clarified, whilst BMD of the femoral neck and trochanteric region has been well investigated. In our current study, we investigated the BMD ratio compared to the contralateral side in the whole proximal femurs of hip OA patients. We aimed to clarify the morphologic factor that may influence these BMD ratios. We performed dual energy X-ray absorptiometry (DEXA) analysis of 69 hip joints from unilateral progressed OA cases. The minimum joint space, center edge angle, Sharp angle, acetabular head index, neck-shaft angle, and leg length discrepancy were also measured as radiographic factors. The correlation between BMD ratio and radiographic morphologic factors was then evaluated by logistic regression. The BMD ratio was higher in the femoral neck than in the distal region. In terms of radiographic factors, the neck-shaft angle was revealed to influence the decreased BMD ratio in the distal subtrochanteric part, whilst the leg length discrepancy and Sharp angle showed a relationship with the increased BMD ratio in the proximal neck region. The discrepancy in the BMD ratio between the femoral neck and the distal subtrochanteric region in the proximal femur is influenced by several morphologic factors.
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NR 26
TC 5
Z9 7

U1 0
U2 3
PU SPRINGER JAPAN KK
PI TOKYO
PA CHIYODA FIRST BLDG EAST, 3-8-1 NISHI-KANDA, CHIYODA-KU, TOKYO, 101-0065, JAPAN
SN 0914-8779
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JI J. Bone Miner. Metab.
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WC Endocrinology & Metabolism; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Research & Experimental Medicine
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PT J
AU Munshi, R
Kochhar, A
Garg, V
AF Munshi, Rafiya
Kochhar, Anita
Garg, Vishal
TI Impact of Dietary Habits and Physical Activity on Bone Health among 40 to 60 Year Old Females at Risk of Osteoporosis in India
SO ECOLOGY OF FOOD AND NUTRITION
LA English
DT Article
DE risk factors; osteoporosis; BMD
ID hip fracture risk; protein-intake; milk intake; prospective cohort; controlled-trial; mineral density; elderly-people; vitamin-k; metaanalysis; women
AB Osteoporosis is a disorder of bones with increasing risk among women. However, a number of modifiable factors can help in combating this disorder. Present study examined the relationship of diet and physical activity and risk of

osteoporosis through biochemical tests, bone mass density (BMD) scores, and standard questionnaires. Genetic risk for osteoporosis, presence of osteoarthritis, and thyroid problems were found among 8%, 7%, and 3% of participants, respectively; and 78% had onset of menopause between 47 to 55 years of age. Results revealed that less intake of proteins, minerals, and diverse fruit and vegetable consumption was significantly ($p <= 0.05$; 0.01) correlated with decreased BMD score and serum calcium. It was concluded that adequate intake of varied fruits and vegetables, good protein, habit of daily physical activity, adequate sun exposure, and dietary calcium, may play a promising role in decreasing the risk of osteoporosis among women of this age group.
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NR 51
TC 7
Z9 9
U1 0
U2 33
PU TAYLOR & FRANCIS INC
PI PHILADELPHIA

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SN 0367-0244
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J9 ECOL FOOD NUTR
JI Ecol. Food Nutr.
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IS 5
BP 470
EP 492
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WC Nutrition & Dietetics
SC Nutrition & Dietetics
GA CN0VY
UT WOS:000358133300003
PM 25782139
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ER

PT J
AU Heidari, B
Hosseini, R
Javadian, Y
Bijani, A
Sateri, MH
Nouroddini, HG
AF Heidari, Behzad
Hosseini, Reza
Javadian, Yahya
Bijani, Ali
Sateri, Mohammad Hassan
Nouroddini, Haj Ghorban
TI Factors affecting bone mineral density in postmenopausal women
SO ARCHIVES OF OSTEOPOROSIS
LA English
DT Article
DE Bone mineral density; Postmenopausal; Menopause; Obesity; Physical activity; Education; Parity
ID body-mass index; risk-factors; physical-activity; osteoporotic fractures; knee osteoarthritis; metabolic syndrome; elderly-men; prevalence; association; parity
AB This study aimed to determine the relationship between bone mineral density (BMD) and demographic, biochemical, and clinical features according to BMD

measurement sites. The results indicated that BMD correlates negatively with menopause duration, parity, and history of fractures but positively correlates with obesity, physical activity, education, and serum ferritin. Purpose/Introduction Osteoporosis (OP) is an important cause of morbidity and mortality in the elderly people. The impacts of various factors on bone mineral density (BMD) differ across diverse population. We hypothesized that the influences of factors which affect BMD vary according to BMD measurement sites. The aim of this study was to determine the relationship between BMD in the femoral neck (FN) and lumbar spine (LS) with some common clinical, demographic, and biochemical parameters in postmenopausal women. Methods In this cross-sectional case-control study, all postmenopausal women of the Amirkola Health and Ageing Project (AHAP) who performed bone densitometry were included. BMD at FN and LS was measured by DXA method. Data regarding clinical, demographic, and biochemical characteristics were provided. OP was diagnosed by the International Society for Clinical Densitometry criteria. Pearson correlation and multivariate regression analyses with simultaneous adjustment were performed to determine relationship. Results Five hundred thirty-seven women with mean age of 67.9 +/- 6.7 years and mean menopause duration (MD) of 15.8 +/- 5.1 years were studied. MD correlated negatively with FNBMD and LS-BMD g/cm(2) (r=-0.405, p=0.001 and r=-0.217, p=0.001). Body mass index (BMI) correlated positively with FN and LS-BMD g/cm(2) (r=0.397, p=0.001 and r=0.311, p=0.001). The association of MD with risk of FN-OP was stronger than LS-OP. Obesity and metabolic syndrome (MS) and higher serum ferritin reduced the risk of OP at both LS and FN similarly, whereas the impacts of parity, prior fracture, high level of education, and physical activity were significantly different across BMD measurement sites. Conclusion The results of this study indicated a significant association between OP and MD, obesity, parity, MS, history of fracture, serum ferritin, level of education, and physical activity. However, the direction and the strength of association varied across BMD measurement sites.
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NR 34
TC 76
Z9 88
U1 3
U2 30
PU SPRINGER LONDON LTD
PI LONDON
PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
SN 1862-3522
EI 1862-3514
J9 ARCH OSTEOPOROS
JI Arch. Osteoporos.
PD DEC 15
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BP
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DI 10.1007/s11657-015-0217-4
PG 7
WC Endocrinology & Metabolism; Orthopedics
SC Endocrinology & Metabolism; Orthopedics
GA CN2ZI
UT WOS:000358291800015
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PT J
AU Kraus, VB
Blanco, FJ
Englund, M
Karsdal, MA
Lohmander, LS
AF Kraus, V. B.
Blanco, F. J.
Englund, M.
Karsdal, M. A.
Lohmander, L. S.
TI Call for standardized definitions of osteoarthritis and risk stratification for clinical trials and clinical use

SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Review
DE Osteoarthritis; Definition; Anatomy; Biomarkers; Physiology; Criteria
ID acid racemization reveals; knee osteoarthritis; proteomic analysis; extracellular-matrix; hepatic-dysfunction; synovial-fluid; biomarkers; protein; mri; disease
AB Osteoarthritis (OA) is a heterogeneous disorder. The goals of this review are (1) To stimulate use of standardized nomenclature for OA that could serve as building blocks for describing OA and defining OA phenotypes, in short to provide unifying disease concepts for a heterogeneous disorder; and (2) To stimulate establishment of ROAD (Risk of OA Development) and ROAP (Risk of OA Progression) tools analogous to the FRAX (TM) instrument for predicting risk of fracture in osteoporosis; and (3) To stimulate formulation of tools for identifying disease in its early preradiographic and/or molecular stages - REDI (Reliable Early Disease Identification). Consensus around more sensitive and specific diagnostic criteria for OA could spur development of disease modifying therapies for this entity that has proved so recalcitrant to date. We fully acknowledge that as we move forward, we expect to develop more sophisticated definitions, terminology and tools. (C) 2015 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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U1 2
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PU ELSEVIER SCI LTD
PI London
PA 125 London Wall, London, ENGLAND
SN 1063-4584
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PT J
AU Levy, R
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TI Collaborative cross mice in a genetic association study reveal new candidate genes for bone microarchitecture
SO BMC GENOMICS
LA English
DT Article
DE Trabecular bone microarchitecture; Collaborative cross; Osteoporosis; Fracture risk; Genome-wide association study; QTL mapping; Mouse genetics
ID quantitative trait loci; single-nucleotide polymorphism; guidance molecule rgma; mineral density; knee osteoarthritis; inbred strains; fractures; resolution; complex; power
AB Background: The microstructure of trabecular bone is a composite trait governed by a complex interaction of multiple genetic determinants. Identifying these genetic factors should significantly improve our ability to predict of osteoporosis and its associated risks. Genetic mapping using collaborative cross mice (CC), a genetically diverse recombinant inbred mouse reference panel, offers a powerful tool to identify causal loci at a resolution under one mega base-pairs, with a relatively small cohort size. Here, we utilized 31 CC lines (160 mice of both sexes in total) to perform genome-wide haplotype mapping across 77,808 single-nucleotide polymorphisms (SNPs). Haplotype scans were refined by imputation with the catalogue of sequence variation segregating in the CC to suggest potential candidate genes. Trabecular traits were obtained following microtomographic analysis, performed on 10-mu m resolution scans of the femoral distal metaphysis. We measured the trabecular bone volume fraction (BV/TV), number (Tb.N), thickness (Tb.Th), and connectivity density (Conn.D). Results:

Heritability of these traits ranged from 0.6 to 0.7. In addition there was a significant (P < 0.01) sex effect in all traits except Tb.Th. Our haplotype scans yielded six quantitative trait loci (QTL) at 1 % false discovery rate; BV/TV and Tb.Th produced two proximal loci each, on chromosome 2 and 7, respectively, and Tb.N and Conn.D yielded one locus on chromosomes 8 and 14, respectively. We identified candidate genes with previously-reported functions in bone biology, and implicated unexpected genes whose function in bone biology has yet to be assigned. Based on the literature, among the genes that ranked particularly high in our analyses (P < 10(-6)) and which have a validated causal role in skeletal biology, are Avp, Oxt, B2m (associated with BV/TV), Cnot7 (with Tb.N), Pcsk6, Rgma (with Tb.Th), Rb1, and Cpb2 (with Conn.D). Other candidate genes strongly suggested by our analyses are Sgcz, Fgf20 (associated with Tb.N), and Chd2 (with Tb.Th). Conclusion: We have demonstrated for the first time genome-wide significant association between several genetic loci and trabecular microstructural parameters for genes with previously reported experimental observations, as well as proposing a role for new candidate genes with no previously characterized skeletal function.
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NR 58
TC 42
Z9 57
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U2 5
PU BMC
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PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
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J9 BMC GENOMICS
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WC Biotechnology & Applied Microbiology; Genetics & Heredity
SC Biotechnology & Applied Microbiology; Genetics & Heredity
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AF Cianferotti, Luisella
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TI The clinical use of vitamin D metabolites and their potential developments: a position statement from the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO) and the International Osteoporosis Foundation (IOF)
SO ENDOCRINE
LA English
DT Article
DE Calcidiol; Calcifediol; Cholecalciferol; Calcitriol; Alfacalcidol; Eldecalcitol
ID biologically-active metabolite; intestinal calcium-transport; bone-mineral density; serum 25-hydroxyvitamin d; d analog; d supplementation; postmenopausal women; double-blind; oral 25-hydroxycholecalciferol; creatinine clearance
AB Several compounds are produced along the complex pathways of vitamin D-3 metabolism, and synthetic analogs have been generated to improve kinetics and/or vitamin D receptor activation. These metabolites display different chemical properties with respect to the parental or native vitamin D-3, i.e., cholecalciferol, which has been, so far, the supplement most employed in the treatment of vitamin D inadequacy. Hydrophilic properties of vitamin D-3 derivatives facilitate their intestinal absorption and their manageability in the case of intoxication because of the shorter half-life. Calcidiol is a more hydrophilic compound than parental vitamin D-3. Active vitamin D analogs, capable of binding the vitamin D receptor evoking vitamin D-related biological effects, are mandatorily employed in hypoparathyroidism and kidney failure with impaired 1 alpha-hydroxylation. They have been shown to increase BMD, supposedly ameliorating calcium absorption and/or directly affecting bone cells, although their use in these conditions is jeopardized by the development of hypercalciuria and mild hypercalcemia. Further studies are needed to assess their overall safety and effectiveness in the long-term and new intermittent regimens, especially when combined with the most effective

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FU European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO)
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PU SPRINGER
PI NEW YORK
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TI Effect of C282Y Genotype on Self-Reported Musculoskeletal Complications in Hereditary Hemochromatosis
SO PLOS ONE
LA English
DT Article
ID joint replacement surgery; genetic hemochromatosis; iron-overload; hfe gene; ferritin concentrations; increased risk; bone; arthropathy; osteoarthritis; mutations
AB Objective Arthropathy that mimics osteoarthritis (OA) and osteoporosis (OP) is considered a complication of hereditary hemochromatosis (HH). We have limited data comparing OA and OP prevalence among HH patients with different hemochromatosis type 1 (HFE) genotypes. We investigated the prevalence of OA and OP in patients with HH by C282Y homozygosity and compound heterozygosity (C282Y/H63D) genotype. Methods A total of 306 patients with HH completed a questionnaire. Clinical and demographic characteristics and presence of OA, OP and related complications were compared by genotype, adjusting for age, sex, body mass index (BMI), current smoking and menopausal status. Results In total, 266 of the 306 patients (87%) were homozygous for C282Y, and 40 (13%) were compound heterozygous. The 2 groups did not differ by median age [60 (interquartile range [IQR] 53 to 68) vs. 61 (55 to 67) years, P=0.8], sex (female: 48.8% vs. 37.5%, P=0.18) or current smoking habits (12.4% vs. 10%, P=0.3). As compared with compound heterozygous patients, C282Y homozygous patients had higher median serum ferritin concentration at diagnosis [1090 (IQR 610 to 2210) vs. 603 (362 to 950) mu g/L, P<0.001], higher median transferrin saturation [80% (IQR 66 to 91%) vs. 63% (55 to 72%), P<0.001]) and lower median BMI [24.8 (22.1 to 26.9) vs. 26.2 (23.5 to 30.3) kg/m2, P<0.003]. The overall prevalence of self-reported OA was significantly higher with C282Y homozygosity than compound heterozygosity (53.4% vs. 32.5%; adjusted odds ratio [aOR] 2.4 [95% confidence interval 1.2-5.0]), as was self-reported OP (25.6% vs. 7.5%; aOR 3.5 [1.1-12.1]). Conclusion Patients with C282Y homozygosity may be at increased risk of musculoskeletal complications of HH.
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TI Role of Curcumin in Common Musculoskeletal Disorders: a Review of Current Laboratory, Translational, and Clinical Data
SO ORTHOPAEDIC SURGERY
LA English
DT Review
DE Curcumin; Osteoarthritis; Osteoporosis; Sarcoma; Turmeric
ID nf-kb activation; cells in-vitro; matrix-metalloproteinase; articular chondrocytes; rheumatoid-arthritis; receptor activator; ovariectomized rat; signaling pathway; gene-expression; united-states
AB The Indian spice turmeric, in which the active and dominant biomolecule is curcumin, has been demonstrated to have significant medicinal properties, including anti-inflammatory and anti-neoplastic effects. This promise is potentially very applicable to musculoskeletal disorders, which are common causes of physician visits worldwide. Research at the laboratory, translational and clinical levels that supports the use of curcumin for various musculoskeletal disorders, such as osteoarthritis, osteoporosis, musculocartilaginous disorders, and sarcoma is here in comprehensively summarized. Though more phase I-III trials are clearly needed, thus far the existing data show that curcumin can indeed potentially be useful in treatment of the hundreds of millions worldwide who are afflicted by these musculoskeletal disorders.
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NR 85
TC 45
Z9 50
U1 0
U2 13
PU WILEY
PI HOBOKEN
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SN 1757-7853
EI 1757-7861
J9 ORTHOP SURG
JI Orthop. Surg.
PD AUG 15
PY 2015
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PG 10
WC Orthopedics
SC Orthopedics
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PT J
AU Garmilla-Ezquerra, P
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TI Analysis of the Bone MicroRNome in Osteoporotic Fractures
SO CALCIFIED TISSUE INTERNATIONAL
LA English
DT Article
DE MicroRNA; Epigenetics; Osteoporosis; Fractures; Osteoblasts
ID osteogenic differentiation; epigenetic mechanisms; stem-cells; expression; metaanalysis; genetics; mirnas
AB Osteoporosis causes important morbidity among elderly individuals. Fragility fractures, and especially hip fractures, have a particularly negative impact on the patients' quality of life. The role of epigenetic mechanisms in the pathogenesis of many disorders is increasingly recognized, yet little is known about their role in non-malignant bone disorders such as osteoporosis. The aim of this study was to explore the expression of miRNAs in patients with osteoporotic hip fractures. Trabecular bone samples were obtained from the femoral heads of patients undergoing replacement surgery for osteoporotic hip fractures and non-fracture controls with hip osteoarthritis. Levels of 760 miRNA were analyzed by real-time PCR. Thirteen miRNAs showed nominally significant ($p < 0.05$) differences between both groups. Six miRNAs (miR-187, miR-193a-3p, miR-214, miR518f, miR-636, and miR-210) were selected for the replication stage. These miRNAs were individually analyzed in a larger group of 38 bone samples. At this stage, we confirmed statistically significant differences across groups for mir-187 and miR-518f. The median relative expression levels of miR-187 were 5.3-fold higher in the non-fracture group ($p = 0.002$). On the contrary, miR-518f was preferentially expressed in bones from osteoporotic patients (8.6-fold higher in fractures; $p = 0.046$). In this first hypothesis-free study of the bone microRNome we found two miRNAs, miR-187, and miR-518f, differentially regulated in osteoporotic bone. Further studies are needed to elucidate the mechanisms involved in the association of these miRNAs with fractures.

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10.1007/s00774-013-0537-7
NR 33
TC 57
Z9 62
U1 0
U2 21
PU SPRINGER
PI NEW YORK
PA ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES
SN 0171-967X
EI 1432-0827
J9 CALCIFIED TISSUE INT
JI Calcif. Tissue Int.
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DI 10.1007/s00223-014-9935-7
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
GA AY6YU
UT WOS:000347709400004
PM 25432767
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ER

PT J
AU Wu, GM
Zhu, SS
Sun, XM
Hu, J
AF Wu, Guomin
Zhu, Songsong
Sun, Xiumei
Hu, Jing
TI Subchondral bone changes and chondrogenic capacity of progenitor cells from subchondral bone in the collagenase-induced temporomandibular joints

osteoarthritis rabbit model
SO INTERNATIONAL JOURNAL OF CLINICAL AND EXPERIMENTAL PATHOLOGY
LA English
DT Article
DE Subchondral bone; temporomandibular joint; osteoporosis; progenitor cells
ID mesenchymal stem-cells; articular-cartilage; sox9; differentiation; progression; gene
AB Purpose: The goals of this study were to characterize subchondral bone changes, and to determine biological activity characteristics of progenitor cell populations from subchondral bone in the collagenase-induced temporomandibular joint osteoarthritis (TMJOA) rabbit model. Greater understanding of such pathological changes occurring in TMJOA samples is critical in the future treatment modalities regarding cartilage protection and repair. Furthermore, the use of progenitor cell populations in various cartilage regeneration strategies proves to be a fruitful avenue for research and clinical applications. Materials and methods: Bone remodeling and anabolic activity of subchondral bone was evaluated by hematoxylin-eosin (H&E), Alcian blue-periodic acid-Schiff (AB-PAS) staining and immuohistochemical staining. The biological activity characteristics of progenitor cells were assessed by expressions of collagen type II, CD44, SOX-9 and MMP-9 by immunohistochemistry and Western blot analysis. Results: In most of the specimens, cartilage of the digested area displayed a reaction characterized by thickening of the cartilage cellular structure with retraction structure formation in the subchondral bone. Most of the specimens focuses on chondroid metaplasia were observed in the subchondral bone, promoting its remodeling, which could develop to endochondral ossification and increasing subchondral bone size. Meanwhile, immunohistochemistry analysis revealed that CD44 expressions in subchondral bone were most significantly increased in TMJOA at 2 weeks group ($P < 0.01$). And, at 4, 6 and 8 weeks groups, the osteochondral junction had completely disappeared by active subchondral bone remodeling, and collagen type II, CD44, SOX-9 and MMP-9 expressions in active subchondral bone region were significantly increased in TMJOA ($P < 0.05$). In addition, western blot analysis revealed that CD44 expression significantly emerged in subchondral bone region at 2 weeks group ($P < 0.01$). Meanwhile, SOX-9 expression emerged in all group, and the intensity was increased in the experimental groups ($P < 0.05$). Conclusion: Our results suggest that the beneficial activation of progenitor cells and bone marrow stem cells in subchondral bone at early stage of TMJOA played an important role on renovation and remodeling of subchondral bone.
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NR 22
TC 12
Z9 13
U1 0
U2 10
PU E-CENTURY PUBLISHING CORP
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EI
J9 INT J CLIN EXP PATHO
JI Int. J. Clin. Exp. Pathol.
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WC Oncology; Pathology
SC Oncology; Pathology
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PT J
AU Vitner, D
Paltieli, Y
Haberman, S
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AF Vitner, D.
Paltieli, Y.
Haberman, S.
Gonen, R.
Ville, Y.
Nizard, J.
TI Prospective multicenter study of ultrasound-based measurements of fetal head station and position throughout labor
SO ULTRASOUND IN OBSTETRICS & GYNECOLOGY
LA English
DT Article
DE fetal head position; fetal head station; LaborPro; occipitoposterior; ultrasound in labor
ID transvaginal digital examination; occiput posterior position; association
AB Objectives To assess the relationship between fetal head position and head station during labor, as measured using an ultrasound-based system, and the occurrence of occiput posterior (OP) position at delivery. Methods This was an

international prospective observational study including women who delivered between January 2009 and September 2013 in four centers: one in Brooklyn, NY, USA; one in Haifa, Israel; and two in Paris, France. We used an ultrasound-based system (LaborPro) to monitor fetal head station and position non-invasively throughout labor. We collected data on demographics, labor parameters and outcome. Results A total of 595 women were included. In 563 (94.6%) women, fetal head position at delivery was occiput anterior (OA), in 31 (5.2%) it was OP and in one (0.2%) it was occiput transverse. In 89% of pregnancies with intrapartum OP when fetal head station was above -2, the head position turned to OA at delivery; the equivalent figures were 74% and 63% OA at delivery when intrapartum OP was diagnosed at head stations of -2 to < 0, and 0 and below, respectively. Cesarean delivery was performed in 35% of pregnancies with fetal head in OP position at delivery, as opposed to 10% of those with non-OP position at delivery. On retrospective analysis, all deliveries in OP were already in OP at station -2 and below. Conclusions In this first assessment of fetal head position at delivery according to fetal head position at various station levels, our data show that 100% of OP positions at delivery were already in OP position at station -2 and below. We did not observe rotation from a non-OP to an OP position from station -2 and below. Nearly two-thirds of fetuses in OP at station 0 and below will rotate to an OA position for delivery. Copyright (C) 2015 ISUOG. Published by John Wiley & Sons Ltd.
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10.1080/jmf.13.1.59.63
NR 11
TC 22
Z9 26
U1 0
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PU WILEY
PI HOBOKEN
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SN 0960-7692
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J9 ULTRASOUND OBST GYN
JI Ultrasound Obstet. Gynecol.
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WC Acoustics; Obstetrics & Gynecology; Radiology, Nuclear Medicine & Medical Imaging
SC Acoustics; Obstetrics & Gynecology; Radiology, Nuclear Medicine & Medical Imaging
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UT WOS:000364315900017
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PT J
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AF Liu, Hui-Fang
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He, Cheng-Qi
TI Pulsed electromagnetic fields for postmenopausal osteoporosis and concomitant lumbar osteoarthritis in southwest China using proximal femur bone mineral density as the primary endpoint: study protocol for a randomized controlled trial
SO TRIALS
LA English
DT Article
DE Menopause; Pulsed electromagnetic fields; Osteoporosis; Osteoarthritis
ID double-blind; knee osteoarthritis; indirect costs; expression; metaanalysis; reliability; cartilage; fracture; therapy; health
AB Background: Osteoporosis (OP) and osteoarthritis (OA) are prevalent skeletal disorders among postmenopausal women. Coexistence is common especially that of postmenopausal osteoporosis (PMO) and lumbar OA. An hypothesis has been raised that OP and OA might share the same pathogenic mechanism, and pulsed electromagnetic fields (PEMFs) were reported to have anti-osteoporosis and anti-osteoarthritis properties, but this suggestion was based primarily on biomarker data. Therefore, whether these two effects could take place simultaneously has not yet been investigated. This randomized controlled trial (RCT) is designed to explore the effect of PEMFs for PMO and concomitant lumbar OA. Methods/Design: The study will include PMO patients (postmenopausal women; aged between 50 and 70 years; have been postmenopausal for at least 5 years and diagnosed with OP using proximal femur T-score) with concomitant lumbar OA (patients with confounding disorders like diabetes, hypertension, hyperlipidemia, and previous fracture history, etcetera, will be excluded) will be randomly assigned to two arms: PEMFs group and sham PEMFs group. There will be 25 participants in each arm (50 in total) and the outcome assessment, including the primary endpoint (proximal femur bone mineral density), will be performed at 5 weeks, 3 months and 6 months after enrollment. Discussion: PMO and lumbar OA are prominent public health problem, especially for postmenopausal women. We hope this RCT will provide scientific evidence to primary care of the postmenopausal women regarding the use of these nonpharmaceutical, noninvasive modalities, PEMFs, in managing PMO and lumbar OA.
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NR 43
TC 16
Z9 19
U1 0
U2 12
PU BMC
PI LONDON
PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
SN
EI 1745-6215
J9 TRIALS
JI Trials
PD JUN 10
PY 2015
VL 16
IS
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EP
DI 10.1186/s13063-015-0780-4
PG 7
WC Medicine, Research & Experimental

SC Research & Experimental Medicine
GA CL4IJ
UT WOS:000356915500001
PM 26058489
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PT J
AU De-Ugarte, L
Yoskovitz, G
Balcells, S
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AF De-Ugarte, Laura
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Urreizti, Roser
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Garcia-Giralt, Natalia
Diez-Perez, Adolfo
TI MiRNA profiling of whole trabecular bone: identification of osteoporosis-related changes in MiRNAs in human hip bones
SO BMC MEDICAL GENOMICS
LA English
DT Article
DE Osteoporosis; microRNAs; Osteoblast; Fracture; Epigenetic regulation
ID cells; expression; differentiation; transcription; homeostasis; micrornas; cartilage; disease; mir-483; gene
AB Background: MicroRNAs (miRNAs) are important regulators of gene expression, with documented roles in bone metabolism and osteoporosis, suggesting potential therapeutic targets. Our aim was to identify miRNAs differentially expressed in fractured vs nonfractured bones. Additionally, we performed a miRNA profiling of primary osteoblasts to assess the origin of these differentially expressed miRNAs. Methods: Total RNA was extracted from (a) fresh femoral neck trabecular bone

from women undergoing hip replacement due to either osteoporotic fracture (OP group, n = 6) or osteoarthritis in the absence of osteoporosis (Control group, n = 6), matching the two groups by age and body mass index, and (b) primary osteoblasts obtained from knee replacement due to osteoarthritis (n = 4). Samples were hybridized to a microRNA array containing more than 1900 miRNAs. Principal component analysis (PCA) plots and heat map hierarchical clustering were performed. For comparison of expression levels, the threshold was set at log fold change > 1.5 and a p-value < 0.05 (corrected for multiple testing). Results: Both PCA and heat map analyses showed that the samples clustered according to the presence or absence of fracture. Overall, 790 and 315 different miRNAs were detected in fresh bone samples and in primary osteoblasts, respectively, 293 of which were common to both groups. A subset of 82 miRNAs was differentially expressed (p < 0.05) between osteoporotic and control osteoarthritic samples. The eight miRNAs with the lowest p-values (and for which a validated miRNA qPCR assay was available) were assayed, and two were confirmed: miR-320a and miR-483-5p. Both were over-expressed in the osteoporotic samples and expressed in primary osteoblasts. miR-320a is known to target CTNNB1 and predicted to regulate RUNX2 and LEPR, while miR-483-5p down-regulates IGF2. We observed a reduction trend for this target gene in the osteoporotic bone. Conclusions: We identified two osteoblast miRNAs over-expressed in osteoporotic fractures, which opens novel prospects for research and therapy.
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NR 30
TC 84

Z9 93
U1 0
U2 14
PU BIOMED CENTRAL LTD
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PA 236 GRAYS INN RD, FLOOR 6, LONDON WC1X 8HL, ENGLAND
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J9 BMC MED GENOMICS
JI BMC Med. Genomics
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DI 10.1186/s12920-015-0149-2
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WC Genetics & Heredity
SC Genetics & Heredity
GA CW8ZZ
UT WOS:000365289400001
PM 26555194
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AU Saviola, G
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AF Saviola, G.
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TI CLODRONATE: OLD DRUG, NEW USES
SO JOURNAL OF BIOLOGICAL REGULATORS AND HOMEOSTATIC AGENTS
LA English
DT Article
DE clodronate; osteoarthritis; extra-articular calcifications; aseptic mobilization of prosthesis
ID double-blind; knee; osteoarthritis; osteoporosis; aminobisphosphonates; bisphosphonates; inhibition; cells; women; risk
AB Clodronate (CLO) is a bisphosphonate (BP) with proved efficacy in the treatment of osteoporosis. The reason of its activity is the anti-resorptive action, which is a common characteristic of BPs. Contrary to other BPs, CLO has a relatively low

affinity for bone and a peculiar mechanism of action. CLO is effective in several diseases associated to excessive bone resorption as bone Paget's disease and CRPS type I. Moreover, there are data showing activity of CLO in the erosive osteoarthritis of the hands, in the osteoarthritis of the knees, in the treatment of extra-articular calcifications and in preventing the mobilization of knee and hip prosthesis.
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NR 25
TC 6
Z9 7
U1 0
U2 4
PU BIOLIFE SAS
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EI 1724-6083
J9 J BIOL REG HOMEOS AG
JI J. Biol. Regul. Homeost. Agents
PD JUL-SEP 15
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VL 29
IS 3
BP 719
EP 722
DI
PG 4
WC Endocrinology & Metabolism; Immunology; Medicine, Research & Experimental; Physiology
SC Endocrinology & Metabolism; Immunology; Research & Experimental Medicine; Physiology
GA CT2GQ
UT WOS:000362620400024
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PT J
AU Choi, JS
Shin, HS
Kim, KY
Ku, SK
Choi, IS
Kim, JW
AF Choi, Jae-Suk
Shin, Hyun-Soo
Kim, Ki Young
Ku, Sae Kwang
Choi, In Soon
Kim, Joo Wan

TI Effect of Polycalcium, a mixture of Polycan and calcium lactate-gluconate in a 1:9 weight ratio, on rats with surgery-induced osteoarthritis
SO EXPERIMENTAL AND THERAPEUTIC MEDICINE
LA English
DT Article
DE calcium; osteoarthritis; Mankin score; beta-glucan; rat
ID aureobasidium-pullulans; beta-glucan; rheumatoid-arthritis; keratan sulfate; cartilage; model; mice; inflammation; glycosaminoglycans; osteoporosis
AB In the present study, the beneficial and synergistic effects of Polycalcium, a mixture of Polycan and calcium (Ca) lactate-gluconate in a 1:9 weight ratio, on a rat model of osteoarthritis (OA) were explored. Polycalcium (50, 100 and 200 mg/kg) was administered orally once per day for 28 days from 1 week after the OA-modeling surgery. Diclofenac sodium (2 mg/kg) was administered as a reference drug. Following the OA surgery, increases in the maximum extension angles, edematous changes in knee and capsule thickness, reductions in chondrocyte proliferation and cartilage glycosaminoglycan (GAG) levels, as well as changes in cartilage degeneration were observed. However, these OA-related symptoms were inhibited after 28 days of continuous oral treatment with Polycalcium. Anti-OA effects, including the induction of chondrocyte proliferation, were detected in the Polycalcium-treated rats and were more favorable compared with those in rats treated with Polycan or Ca lactate-gluconate alone (100 mg). Therefore, a mixture of Polycan and Ca lactate-gluconate was demonstrated to have beneficial synergistic effects on OA.
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SN 1792-0981
EI 1792-1015
J9 EXP THER MED
JI Exp. Ther. Med.
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BP 1780
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WC Medicine, Research & Experimental
SC Research & Experimental Medicine
GA CH2IU
UT WOS:000353849700036
PM 26136893
DA 2026-02-10
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PT J
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Polat, N.
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Kontas, S.
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TI Using otolith shape and morphometry to identify four Alburnus species (A. chalcoides, A. escherichii, A. mossulensis and A. tarichi) in Turkish inland waters
SO JOURNAL OF APPLIED ICHTHYOLOGY
LA English
DT Article
ID sagittal otolith; stock discrimination; trachurus-trachurus; horse mackerel; atlantic; identification; fish; morphology; growth; l.
AB Asteriscus otolith shapes as well as their morphometry and shape contours were investigated in order to identify four allopatric Alburnus species: A. chalcoides (Guldenstadt, 1772) (Ordu), A. escherichii Steindachner, 1897 (Eskisehir), A.

mossulensis Heckel, 1843 (Tunceli), and A. tarichi (Guldenstadt, 1814) (Van) in Turkish inland waters. These were compared using the shape indices (form factor, roundness, circularity, ellipticity, rectangularity and aspect ratio), and the morphological characters [otolith weight (OWE), otolith length (OL), otolith width (OW), otolith perimeter (OP), and otolith area (OA)]. The overall canonical discriminant analysis (CDA) classification score was 93.8%, with the lowest score for A. escherichii (82.5%) and the highest for A. chalcoides (100%). The otolith shapes, morphology and shape contours of all sampled fish were a clear species differentiator, thereby demonstrating that the otolith shape is species-specific. The current study presents for the first time comprehensive variation information on interspecific left-right asteriscus otoliths in males and females of each Alburnus species: A. chalcoides from Ordu, A. escherichii from Eskisehir, A. mossulensis from Tunceli and A. tarichi from Van, based on a total of 307 individuals. Scanning electron microscopy (SEM) images, shape contours and other otolith characters vary within the same genus; these differences should be investigated not only in other freshwater fish species or genera but also in the same species living in different habitats. In addition, further investigation is required not only with respect to the morphometry, biometry, shape, geometry, and shape contours of the otoliths, but also regarding the genetic methods for robust identification of various sympatric and allopatric fish populations.

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U1 0
U2 21
PU WILEY
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J9 J APPL ICHTHYOL
JI J. Appl. Ichthyol.
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WC Fisheries; Marine & Freshwater Biology
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PT J
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TI Changes in Health-Related Quality of Life After Gastric Bypass in Patients With and Without Obesity-Related Disease
SO OBESITY SURGERY
LA English
DT Article
DE Health-related quality of life; Morbid obesity; Severe obesity; Bariatric surgery; Gastric bypass; Comorbidity; SF-36; OP-scale
ID body-mass index; bariatric surgery; staging system; subjects sos; sf-36; intervention; validity
AB A substantial proportion of severely obese patients undergoing bariatric surgery have not developed disease as a consequence of obesity. Little is known about the effects of bariatric surgery on health-related quality of life (HRQL) in this patient group. In a prospective study at a public hospital, we compared HRQL in gastric bypass patients with and without obesity-related disease before and 2 years after surgery. HRQL was assessed in 232 severely obese patients before, 1 year, and 2 years after Roux-en-Y gastric bypass. We used a general HRQL questionnaire, the Short Form 36, and an obesity-specific questionnaire, the Obesity-related Problems scale. The patients were divided into two groups based on the presence of obesity-related disease (n = 146) or not (n = 86) before surgery. We defined obesity-related disease as having at least one of the following conditions: type 2 diabetes mellitus, hypertension, dyslipidemia, coronary heart disease, obstructive sleep apnea, gastroesophageal reflux disease, or osteoarthritis. Linear mixed models were used to analyze the HRQL outcomes. Before surgery, patients with no obesity-related disease reported equal HRQL compared with patients with obesity-related disease. Two years after gastric bypass, substantial improvements in all subscales of Short Form 36 and in Obesity-related Problems scale were observed in both groups, and the improvements were similar in 7 out of 8 subscales of Short Form 36 as well as for the Obesity-related Problems scale. Baseline HRQL was similar in patients with and without obesity-related disease prior to gastric bypass. After surgery, patients with no comorbidity had similar positive changes in HRQL as patients with one or several comorbidities. These findings indicate that other factors than obesity-related disease are at least as important for severely obese patients' impaired HRQL.
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TC 11
Z9 15
U1 0
U2 13
PU SPRINGER
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SN 0960-8923
EI 1708-0428
J9 OBES SURG
JI Obes. Surg.
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PT J
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Takeshita, Tatsuya
TI Urinary 8-iso-prostaglandin F2 as a marker of metabolic risks in the general Japanese population: The ROAD study
SO OBESITY
LA English
DT Article
ID systemic oxidative stress; low-density-lipoprotein; in-vivo; f-2-isoprostanes; isoprostanes; accumulation; hemoglobin; overweight; biomarkers; adiposity
AB ObjectiveTo determine whether 8-iso-prostaglandin F2 (8-iso-PGF2) is a reliable biomarker of the accumulation of metabolic risks [e.g., overweight, hypertension, impaired glucose tolerance (IGT), and dyslipidemia]. MethodsThis was a cross-sectional study of the baseline characteristics of a Japanese general population cohort study: Research on Osteoarthritis/Osteoporosis Against Disability (ROAD). Of 1,690 participants, 1,527 fulfilled all questionnaires and examinations. Free and conjugated urinary 8-iso-PGF2 levels and metabolic syndrome (MetS) components including blood pressure, HbA1c, total cholesterol, high-density lipoprotein cholesterol (HDL-C), and non-HDL-C were analyzed. The data were analyzed by ANCOVA, multiple regression analysis, and multinomial logistic analysis. Results8-iso-PGF2 was significantly associated with HbA1c and significantly inversely associated with total cholesterol and non-HDL-C. Notably, IGT with an HbA1c cut-off of 5.5% was significantly associated with 8-iso-PGF2 level in participants aged 50 years. Multinomial logistic regression analysis revealed 8-iso-PGF2 level was significantly associated with a greater number of MetS risks present; this association was stronger in younger participants. In participants aged 71 years, 8-iso-PGF2 was significantly associated with a greater number of MetS risks with higher IGT cut-offs. ConclusionsUrinary 8-iso-PGF2 can be a reliable marker of IGT and the accumulation of MetS risks, especially in younger people.
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PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
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JI Obesity

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WC Endocrinology & Metabolism; Nutrition & Dietetics
SC Endocrinology & Metabolism; Nutrition & Dietetics
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PT J
AU Bansback, N
Trenaman, L
Harrison, M
AF Bansback, Nick
Trenaman, Logan
Harrison, Mark
TI How Important Is Mode of Administration in Treatments for Rheumatic Diseases and Related Conditions?
SO CURRENT RHEUMATOLOGY REPORTS
LA English
DT Article
DE Economics; Quality of life; Mode of administration
ID willingness-to-pay; osteoporosis drug-treatment; treatment preferences; patient preferences; health-care; choice; adherence; arthritis; osteoarthritis; risk
AB Many new drugs do not offer clinical benefits over existing treatments but provide potentially more convenient modes of administration. These include how frequently a treatment is given, how it is delivered, who gives the treatment, and whether there are any associated local adverse reactions. We reviewed studies in rheumatology that ask patients and society the value they assign to these aspects of treatment in comparison to the benefits and side effects and costs. We find that mode of administration is generally valued by both patients and society, but the extent depends on the context of the disease and the study participants. Respondents with a more severe disease seem to assign less value to mode and frequency of administration, and prioritize improvement in pain and function. However, patients with chronic, but less severe, disease seem to place greater value on mode of administration. Furthermore, respondents with experience of the treatments perceived to be more inconvenient assigned lower value to more

convenient treatments. Unfortunately, we found few examples of studies that reported values in a format that could easily be incorporated into resource allocation decisions by payers.
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AU Rogers, MB
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TI Turning Bone Morphogenetic Protein 2 (BMP2) on and off in Mesenchymal Cells
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DT Article
DE GENE REGULATION; TRANSCRIPTION; POST-TRANSCRIPTIONAL; MESENCHYMAl CELL; GROWTH FACTOR; MORPHOGEN; CALCIFICATION
ID in-vivo; osteoblast differentiation; regulatory elements; gene-transcription; signaling pathway; expression; wnt; stimulation; region; rna
AB The concentration, location, and timing of bone morphogenetic protein 2 (BMP2, HGNC:1069, GeneID: 650) gene expression must be precisely regulated. Abnormal BMP2 levels cause congenital anomalies and diseases involving the mesenchymal cells that differentiate into muscle, fat, cartilage, and bone. The molecules and conditions that influence BMP2 synthesis are diverse. Understandably, complex mechanisms control Bmp2 gene expression. This review includes a compilation of agents and conditions that can induce Bmp2. The currently known trans-regulatory factors and cis-regulatory elements that modulate Bmp2 expression are summarized and discussed. Bone morphogenetic protein 2 (BMP2, HGNC:1069, GeneID: 650) is a classical morphogen; a molecule that acts at a distance and whose concentration influences cell behavior. In mesenchymal cells, the concentration of BMP2 influences myogenesis, adipogenesis, chondrogenesis, and osteogenesis. Because the amount, timing, and location of BMP2 synthesis influence the allocation of cells to muscle, fat, cartilage, and bone, the mechanisms that regulate the Bmp2 gene are crucial. Key early mesodermal events that require precise Bmp2 regulation include heart specification and morphogenesis. Originally named for its osteoinductive properties, healing fractures requires BMP2. The human Bmp2 gene also has been linked to osteoporosis and osteoarthritis. In addition, all forms of pathological calcification in the vasculature and in cardiac valves involve the pro-osteogenic BMP2. The diverse tissues, mechanisms, and diseases influenced by BMP2 are too numerous to list here (see OMIM: 112261). However, in all BMP2-influenced pathologies, changes in the behavior and differentiation of pluripotent mesenchymal cells are a recurring theme. Consequently, much effort has been devoted to identifying the molecules and conditions that influence BMP2 synthesis and the complex mechanisms that control Bmp2 gene expression. This review begins with an overview of the Bmp2 gene's chromosomal neighborhood and then summarizes and evaluates known

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TI Trabecular bone score (TBS) as a new complementary approach for osteoporosis evaluation in clinical practice
SO BONE
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DT Review
DE Osteoporosis; Epidemiology; Trabecular bone score (TBS); Fragility fracture; Bone mineral density; FRAX
ID finite-element-analysis; mineral density bmd; in-vivo measurement; postmenopausal women; lumbar spine; vertebral fracture; risk-factors; microarchitectural texture; white women; men
AB Trabecular bone score (TBS) is a recently-developed analytical tool that performs novel grey-level texture measurements on lumbar spine dual X-ray absorptiometry (DXA) images, and thereby captures information relating to trabecular microarchitecture. In order for TBS to usefully add to bone mineral density (BMD) and clinical risk factors in osteoporosis risk stratification, it must be independently associated with fracture risk, readily obtainable, and ideally, present a risk which is amenable to osteoporosis treatment. This paper summarizes a review of the scientific literature performed by a Working Group of the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis. Low TBS is consistently associated with an increase in both prevalent and incident fractures that is partly independent of both clinical risk factors and areal BMD (aBMD) at the lumbar spine and proximal femur. More recently, TBS has been shown to have predictive value for fracture independent of fracture probabilities using the FRAX (R) algorithm. Although TBS changes with osteoporosis treatment, the magnitude is less than that of aBMD of the spine, and it is not clear how change in TBS relates to fracture risk reduction. TBS may also have a role in the assessment of fracture risk in some causes of secondary osteoporosis (e.g., diabetes, hyperparathyroidism and glucocorticoid-induced osteoporosis). In conclusion, there is a role for TBS in fracture risk assessment in combination with both aBMD and FRAX. (C) 2015 Elsevier Inc. All rights reserved.

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TI PREVALENCE OF OSTEOPOROSIS IN PATIENTS AWAITING TOTAL HIP ARTHROPLASTY
SO ACTA ORTOPEDICA BRASILEIRA
LA English
DT Article
DE Osteoarthritis; Osteoporosis; Bone density; Arthroplasty, replacement, hip
ID knee arthroplasty; bone-density; osteoarthritis; women; replacement
AB Objective: To evaluate the prevalence of osteoporosis in patients awaiting total hip arthroplasty. Method: Twenty-nine patients diagnosed with hip osteoarthritis awaiting primary total arthroplasty of the hip answered WOMAC questionnaire, VAS and questions about habits, osteoporosis and related diseases. Bone mineral densitometry of the lumbar spine and hips and laboratory tests (complete blood count and examination of calcium metabolism) were performed. Weight and height were measured to calculate body mass index (BMI). The evaluated quantitative characteristics were compared between patients with and without osteoporosis using the Mann-Whitney tests. Results: Thirteen men and 16 women with a mean age of 61.5 years old, WOMAC 51.4; EVA 6.4 and BMI 27.6 were evaluated. The prevalence of osteoporosis was 20.7%, and 37.9% had osteopenia. Patients with osteoporosis were older than patients without osteoporosis (p=0.006). The mean bone mineral density of the femoral neck without hip osteoarthritis was lower than the affected side (p=0.007). Thirty-five percent of patients did not know what osteoporosis is. Of these, 30% had osteopenia or osteoporosis. Conclusion: osteoarthritis and osteoporosis may coexist and the population waiting for total hip arthroplasty should be considered at risk for the presence of osteoporosis.
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TI Response of Osteoblasts to the Stimulus of Fluid Flow
SO CRITICAL REVIEWS IN EUKARYOTIC GENE EXPRESSION
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DT Article
DE osteoblast; biomechanical response; fluid flow; stimulus; bone disease
ID bone morphogenetic protein-2; mesenchymal stem-cells; necrosis-factor-alpha; marrow stromal cells; human osteoarthritic osteoblasts; alkaline-phosphatase activity; fas-mediated apoptosis; growth-factor-beta; formation in-vitro; kappa-b ligand
AB Bone is an important porous tissue that supports the body, maintains calcium and phosphate homeostasis, protects vital organs, and houses bone marrow. The interaction between hydrostatic pressure and fluid phase, solid phase, cells, and vascular in bone makes bone inevitably bear baseline levels of fluid flow. Fluid flow plays an important role in regulating the proliferation, differentiation, distribution, and apoptosis of osteoblasts in bone. The effect of fluid flow on osteoblasts is dependent on time, velocity, and type. Some response of osteoblasts to fluid flow is closely related to the soluble factors secreted by the osteoblasts themselves or other types of bone cells. When the response is disordered, related bone diseases such as osteoporosis, osteoarthritis, and abnormal osteogenesis probably happen. In this article we review the current progress in the study of the response of osteoblasts to the direct and indirect stimulus of fluid flow and their roles in osteogenesis and related bone diseases.
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ID activated protein-kinase; coronary secondary prevention;

congestive-heart-failure; fatty liver-disease; cancer incidence; cardiovascular-disease; cell-proliferation; insulin-resistance; messenger-rna; beta-blockers
AB Lovastatin, the progenitor of the statin family, is in fact a naturally occurring compound produced by the yeast Monascus purpureus. Red yeast rice (RYR), a traditional Chinese food made by fermenting rice with M purpureus, is an herbal medicine that has been used for 1200 y as a therapy for problems related to circulation and digestion. RYR contains a range of compounds known as monacolins, of which monacolin K-renamed lovastatin by pharmaceutical researchers-was found to be the most potent inhibitor of cholesterol synthesis. Standardized extracts of RYR, providing 10 mg of monacolins daily, have been shown to lower elevated low-density lipoprotein (LDL) cholesterol by approximately 20%. In a large secondary prevention trial in China, RYR was found to be markedly protective with respect to cardiovascular events and total mortality. Yet RYR very rarely induces the myopathy and hepatic damage commonly seen with prescription statin therapy. The Chinese herbal compound berberine, used to treat diabetes and congestive heart failure in China, has been shown to increase hepatic expression of LDL receptors and, hence, to lower LDL cholesterol, by extending the half-life of LDL receptor messenger ribonucleic acid (mRNA). This effect is complementary to the increased transcription of this mRNA promoted by statin therapy. Because berberine is well tolerated aside from transient gastrointestinal (GI) upset in some people and, in particular, has not been reported to cause myopathy or hepatic damage, the combination of RYR and berberine may have the potential to achieve reductions in LDL cholesterol comparable with those achieved with prescription statin therapy, but without the associated risks such as muscle damage and diabetes. Moreover, berberine, via its ability to activate adenosine monophosphate-activated kinase (AMPK), which it shares with the drug metformin, can lower triglycerides, improve metabolic syndrome, aid glycemic control in diabetics, and act directly on the vasculature to promote vascular health. It may also have the potential to reduce risk for various cancers, osteoporosis, osteoarthritis, nonalcoholic fatty-liver disease, and neurodegenerative disorders, although such predictions are highly speculative. Whereas statin therapy modestly increases risk for type 2 diabetes, berberine likely has the opposite effect. These considerations suggest that combined administration of RYR and berberine may provide a broader range of health protection than is afforded by prescription statin therapy, with lower risks for serious adverse effects compared with statins. Randomized, controlled trials (RCTs) assessing the effect of optimal intakes of RYR and berberine on serum lipids and other vascular risk factors are needed.
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NR 85
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U2 20
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Castro Rocha, Francisco Airton
TI Strontium ranelate analgesia in arthritis models is associated to decreased cytokine release and opioid-dependent mechanisms
SO INFLAMMATION RESEARCH
LA English
DT Article
DE Arthritis; Cytokines; Zymosan; Pain; Strontium ranelate
ID experimental osteoarthritis; bone-resorption; pain; osteoporosis; morphine; receptor; cells; women; risk
AB Objective We investigated the anti-inflammatory activity of strontium ranelate (SR) in arthritis models. Materials and methods Rats received 1 mg zymosan (Zy) or saline intra-articularly. Other groups were subjected to anterior cruciate ligament transection in the right knee, as an osteoarthritis (OA) model, or a sham procedure. Joint pain was assessed using the articular incapacitation and paw-pressure tests. Cell influx and cytokines were measured in joint exudates. Treatment Groups received either SR (30-300 mg/kg per os) or saline. Results SR dose-dependently and significantly inhibited joint pain in both Zy and OA models, while not altering cell influx. Naloxone administration significantly reversed SR analgesia. SR

significantly reduced levels of Interleukin-1 beta and tumor necrosis factor-alpha in Zy arthritis, whereas those of cytokine-induced neutrophil chemoattractant (CINC)-1 were not altered. Conclusions SR provides analgesia in arthritis that is associated to inhibition of the release of inflammatory cytokines into inflamed joints. This effect is abrogated by administration of the opioid antagonist naloxone.
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NR 24
TC 19
Z9 26
U1 0
U2 16
PU SPRINGER BASEL AG
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WC Cell Biology; Immunology
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TI WOMAC and SF-36: instruments for evaluating the health-related quality of life of elderly people with total hip arthroplasty. A descriptive study
SO SAO PAULO MEDICAL JOURNAL
LA English
DT Article
DE Arthroplasty, replacement, hip; Osteoarthritis, hip; Aged; Quality of life; Health of the elderly
ID joint replacement; decision-making; heart-failure; outcm; knee; responsiveness; osteoporosis; fractures; arthritis; recovery
AB CONTEXT AND OBJECTIVES: Quality-of-life results have increasingly been evaluated among patients undergoing joint replacements. The objective of this study was to compare two assessment instruments for health-related quality of life (one generic and the other specific), among elderly patients undergoing total hip arthroplasty. DESIGN AND SETTING: Cross-sectional descriptive study in a reference hospital in the region of Campinas. METHODS: The subjects were 88 elderly outpatients aged 60 years or over who underwent primary total hip arthroplasty. Two instruments for assessing health-related quality of life were applied: the generic Medical Study 36-item Short-Form Health Survey (SF-36) and the specific Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Cronbach's alpha and the ceiling and floor effects of the instruments were evaluated. RESULTS: The scores from both instruments showed that issues of a physical nature affected these elderly people's quality of life most. The pain and stiffness dimensions of WOMAC showed ceiling effects and only the functional capacity and pain dimensions of the SF-36 did not show the ceiling effect. The SF-36 presented floor effects in the dimensions of physical and emotional aspects. Cronbach's alpha was considered satisfactory in both instruments (alpha > 0.70). CONCLUSIONS: The floor and ceiling effects that were observed suggest that these instruments may present some limitations in detecting changes to the majority of the SF-36 dimensions, except for functional capacity and pain, and to the pain and stiffness dimensions of WOMAC, when applied to elderly people with total hip arthroplasty.
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Z9 17
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U2 8
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JI Sao Paulo Med. J.
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WC Medicine, General & Internal
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PT J
AU Kunz, F
Rebl, H
Quade, A
Matschegewski, C
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AF Kunz, F.
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TI OSTEOBLASTS WITH IMPAIRED SPREADING CAPACITY BENEFIT FROM THE POSITIVE CHARGES OF PLASMA POLYMERISED ALLYLAMINE
SO EUROPEAN CELLS & MATERIALS
LA English
DT Article
DE Osteoblast function; actin cytoskeleton; vinculin; spreading; cytochalasin D; titanium; surface modification; plasma polymerised allylamine; surface charge
ID titanium surfaces; focal adhesion; cell-adhesion; in-vitro; subchondral bone; actin; osteoarthritis; osteoporosis; mg-63; organization
AB Bone diseases such as osteoporosis, osteoarthritis and rheumatoid arthritis, impinge on the performance of orthopaedic implants by impairing bone regeneration. For this reason, the development of effective surface modifications supporting the ingrowth of implants in morbid bone tissue is essential. Our study is designed to elucidate if cells with restricted cell-function limiting adhesion processes benefit from plasma polymer deposition on titanium. We used the actin filament disrupting agent cytochalasin D (CD) as an experimental model for cells with impaired actin cytoskeleton. Indeed, the cell's capacity to adhere and spread was drastically reduced due to shortened actin filaments and vinculin contacts that were smaller. The coating of titanium with a positively charged nanolayer of plasma polymerised allylamine (PPAAm) abrogated these disadvantages in cell adhesion and the CD-treated osteoblasts were able to spread significantly. Interestingly, PPAAm increased spreading by causing enhanced vinculin number and contact length, but without significantly reorganising actin filaments. PPAAm with the monomer allylamine was deposited in a microwave-excited low-pressure plasma-processing reactor. Cell physiology was monitored by flow cytometry and confocal laser scanning microscopy, and the length and number of actin filaments was quantified by mathematical image processing. We showed that biomaterial

surface modification with PPAAm could be beneficial even for osteoblasts with impaired cytoskeleton components. These insights into in vitro conditions may be used for the evaluation of future strategies to design implants for morbid bone tissue.
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NR 65
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Z9 14
U1 0
U2 11
PU AO RESEARCH INSTITUTE DAVOS-ARI
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PT J
AU Korsa, R
Lukes, J
Sepitka, J
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AF Korsa, Radim
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TI Elastic Properties of Human Osteon and Osteonal Lamella Computed by a Bidirectional Micromechanical Model and Validated by Nanoindentation
SO JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME
LA English
DT Article
DE cortical bone; osteon; lamella; micromechanics; elastic constants; nanoindentation
ID mineralized collagen fibrils; human cortical bone; indentation modulus; compact-bone; orientation; constants; yield; prediction; stiffness
AB Knowledge of the anisotropic elastic properties of osteon and osteonal lamellae provides a better understanding of various pathophysiological conditions, such as aging, osteoporosis, osteoarthritis, and other degenerative diseases. For this reason, it is important to investigate and understand the elasticity of cortical bone. We created a bidirectional micromechanical model based on inverse homogenization for predicting the elastic properties of osteon and osteonal lamellae of cortical bone. The shape, the dimensions, and the curvature of osteon and osteonal lamellae are described by appropriately chosen curvilinear coordinate systems, so that the model operates close to the real morphology of these bone components. The model was used to calculate nine orthotropic elastic constants of osteonal lamellae. The input values have the elastic properties of a single osteon. We also expressed the dependence of the elastic properties of the lamellae on the angle of orientation. To validate the model, we performed nanoindentation tests on several osteonal lamellae. We compared the experimental results with the calculated results, and there was good agreement between them. The inverted model was used to calculate the elastic properties of a single osteon, where the

input values are the elastic constants of osteonal lamellae. These calculations reveal that the model can be used in both directions of homogenization, i.e., direct homogenization and also inverse homogenization. The model described here can provide either the unknown elastic properties of a single lamella from the known elastic properties at the level of a single osteon, or the unknown elastic properties of a single osteon from the known elastic properties at the level of a single lamella.
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NR 47
TC 8
Z9 8
U1 0
U2 16
PU ASME
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J9 J BIOMECH ENG-T ASME
JI J. Biomech. Eng.-Trans. ASME

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WC Biophysics; Engineering, Biomedical
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PT J
AU Åkesson, K
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Tenne, Max
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McGuigan, Fiona E.
TI Variation in the PTH2R gene is associated with age-related degenerative changes in the lumbar spine
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Article
DE Genetic; Polymorphism; PTH2R; Degenerative changes; Spine
ID bone-mineral density; elderly-women; parathyroid-hormone; follow-up; fracture; osteoporosis; osteoarthritis; intermittent; pthr1; risk
AB In the elderly, degenerative changes in the lumbar spine are common, contributing to falsely elevated bone mineral density (BMD) values. The parathyroid hormone (PTH) system plays an important role in the regulation of bone turnover and we explore the hypothesis that polymorphisms (SNPs) within genes in this pathway (PTH, PTHLH, PTH1R and PTH2R) contribute to degenerative manifestations of the spine in elderly women. The study included 1,004 Swedish women aged 75 years from the population-based OPRA cohort who attended follow-up at 5 and 10 years. Lumbar spine BMD was assessed by dual energy X-ray absorptiometry (DXA) and each individual vertebra was evaluated visually on the

DXA image for apparent degenerative manifestations. Six SNPs in PTH and 3 SNPs each in PTH1R, PTH2R and PTHLH were analysed. Among women with degenerative manifestations at the lumbar spine, there was an over-representation at baseline of those carrying the PTH2R SNP rs897083 A-allele (p = 0.0021; odds ratio 1.5 95 % CI 1.2-2.0) and across the duration of follow-up (p = 0.0008). No association was observed between degenerative manifestations and variation in the other genes. None of the PTH hormone system genes were associated with vertebral fracture. Variation in the PTH2R gene (Chr2q34, rs897083) may contribute to the age-associated degenerative manifestations that develop at the lumbar spine.
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NR 29
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U2 7
PU SPRINGER JAPAN KK
PI TOKYO
PA SHIROYAMA TRUST TOWER 5F, 4-3-1 TORANOMON, MINATO-KU, TOKYO, 105-6005, JAPAN
SN 0914-8779
EI 1435-5604
J9 J BONE MINER METAB
JI J. Bone Miner. Metab.
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WC Endocrinology & Metabolism; Medicine, Research & Experimental
SC Endocrinology & Metabolism; Research & Experimental Medicine
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TI Calcitonin suppresses intervertebral disk degeneration and preserves lumbar vertebral bone mineral density and bone strength in ovariectomized rats
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE Biomechanics; Intervertebral disk degeneration; Micro-computed tomography; Osteopenia; Salmon calcitonin
ID low-back-pain; postmenopausal women; salmon-calcitonin; grading system; matrix; osteoarthritis; expression; osteoporosis; chondrocytes; degradation
AB We investigated the effect of calcitonin (CT) on lumbar intervertebral disk degeneration (LIDD) in rats with ovariectomy-induced osteopenia. CT protected ovariectomized rats from LIDD by, at least in part, modifying extracellular matrix metabolism of the disks and preserving the microarchitecture and biomechanical properties of adjacent vertebrae. Introduction The present study aimed to investigate the effect of CT on lumbar vertebral bone mineral density and intervertebral disk degeneration in ovariectomized (OVX) rats. Methods We first subjected 50 3-month-old female rats to either OVX (n = 30) or sham (n = 20).

Twelve weeks later, ten OVX and ten sham rats were necropsied. The remaining OVX rats began to receive either saline vehicle (OVX + V, n = 10), or salmon CT (OVX + CT, 16 IU/kg/2 days, n = 10). After 12 weeks of treatment, necropsy was conducted and bone mineral density was determined in L3-4 and L5-6 vertebrae. The microstructure and biomechanical properties of L3 vertebrae were detected by micro-computed tomography and compression test, respectively. L5-6 was also used to measure intervertebral disk height and observe intervertebral disk histological changes by Van Gieson staining and histological scores, as well as immunohistochemistry (IHC) analysis of matrix metalloprotease (MMP)-1, MMP-13, and collagen II expression. Results At 12 weeks post-OVX, OVX rats had lower BV/TV and Tb.N and higher intervertebral disk histological score than sham rats. After 24 weeks, OVX + CT rats had higher BMD, BV/TV, Tb.N, and bone biomechanical strength values than OVX + V rats. Histological analysis showed OVX + CT rats had significantly lower disk degeneration scores than OVX + V rats. IHC analysis revealed CT treatment decreased expression of MMP-1 and MMP-13 and increased expression of collagen II compared with OVX + V rats. Conclusions Our data demonstrate that CT-treated OVX rats display less intervertebral disk degeneration and favorable changes in intervertebral disk metabolism, associated with higher trabecular bone mass, better trabecular microarchitecture, and better biomechanical strength when compared to vehicle-treated OVX rats.
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TC 15
Z9 18
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WC Endocrinology & Metabolism
SC Endocrinology & Metabolism
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PT J
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TI Chronic Pain, Comorbid Medical Conditions, and Associated Risk Factors in Kuwait: Gender and Nationality Differences
SO PAIN MEDICINE
LA English
DT Article
DE Chronic Pain; Medical Comorbidities; Gender Differences; Kuwait; Rehabilitation; Health Behavior
ID low-back-pain; prevalence; health; epidemiology; population; country; diseases; children; obesity; burden
AB Objective. Chronic pain is an international health problem that imposes enormous costs on societies around the world. There is good reason to suspect that chronic pain is a serious health issue in Kuwait and is associated with comorbid

medical conditions like diabetes. The aim of this study is to examine the report of pain and incidence of medical comorbidities among a large convenience sample of patients treated at a private rehabilitation center in Kuwait and to examine differences in patient groups based on age, gender, and Kuwaiti nationality. Methods. This study examined intake data from 2,103 patients treated at a rehabilitation center in Kuwait. Most of the subjects were female (55.4%) and averaged 43.3 years of age (+/- 14.5, range 18- 88). Sixty nine percent were Kuwaiti citizens and 57.9% were employed. Results. Marked differences in pain and health-related conditions were found between Kuwaiti nationals and non- Kuwaitis, with significantly increased incidences of hypertension, osteoarthritis, diabetes, asthma, osteoporosis, and cardiac and respiratory problems among the Kuwaitis (P < 0.001). Notable gender differences were also identified with women reporting more intense, widespread pain, and reporting more comorbid medical problems compared with men (P < 0.001). Conclusions. This extensive survey study that found female Kuwaitis to have a higher incidence of pain and medical comorbidities than males and non- Kuwaitis highlights the role of cultural factors in contributing to pain and comorbid medical conditions. This information is critical in organizing resources to implement adequate healthcare services and behavioral interventions in Kuwait and other Arab countries to improve pain and health-related conditions.
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TC 7
Z9 8
U1 0
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PA GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND
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AF Long, D. L.
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TI Heparin-binding epidermal growth factor-like growth factor (HB-EGF) is increased in osteoarthritis and regulates chondrocyte catabolic and anabolic activities
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Cartilage; Growth factors; Metalloproteinases; Integrins; Bone morphogenetic proteins; Chondrocytes
ID human articular chondrocytes; activated protein-kinase; fibronectin fragments; gene-expression; cartilage; mice; stimulation; cells; membrane; mig-6
AB Objective: We determined if the epidermal growth factor receptor ligand HB-EGF is produced in cartilage and if it regulates chondrocyte anabolic or catabolic activity. Methods: HB-EGF expression was measured by quantitative PCR using RNA isolated from mouse knee joint tissues and from normal and osteoarthritis (OA) human chondrocytes. Immunohistochemistry was performed on normal and OA human cartilage and meniscus sections. Cultured chondrocytes were treated with fibronectin fragments (FN-f) as a catabolic stimulus and osteogenic protein 1 (OP-1) as an anabolic stimulus. Effects of HB-EGF on cell signaling were analyzed by immunoblotting of selected signaling proteins. MMP-13 was measured in conditioned media, proteoglycan synthesis was measured by sulfate incorporation, and matrix gene expression by quantitative PCR. Results: HB-EGF expression was increased in 12-month old mice at 8 weeks after surgery to induce OA and increased amounts of HB-EGF were noted in human articular cartilage from OA knees. FN-f stimulated chondrocyte HB-EGF expression and HB-EGF stimulated chondrocyte MMP-13 production. However, HB-EGF was not required for FN-f stimulation of MMP-13 production. HB-EGF activated the ERK

and p38 MAP kinases and stimulated phosphorylation of Smad1 at an inhibitory serine site which was associated with inhibition of OP-1 mediated proteoglycan synthesis and reduced aggrecan (ACAN) but not COL2A1 expression. Conclusion: HB-EGF is a new factor identified in OA cartilage that promotes chondrocyte catabolic activity while inhibiting anabolic activity suggesting it could contribute to the catabolic-anabolic imbalance seen in OA cartilage. (C) 2015 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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NR 31
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AU Gao, FQ
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AF Gao, Fuqiang
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TI Extracorporeal shock wave therapy in the treatment of primary bone marrow edema syndrome of the knee: a prospective randomised controlled study
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
DE Bone marrow edema syndrome; Extracorporeal shock wave therapy; Knee; Conservative treatment; Magnetic resonance imaging
ID necrotic femoral heads; core decompression; transient osteoporosis; osteonecrosis; hip; expression; prostacyclin; rabbits; vegf
AB Background: The aim of this prospective study was to evaluate the effectiveness of extracorporeal shock wave therapy (ESWT) in normalizing the symptoms and imaging features of primary bone marrow edema syndrome (BMES) of the knee. Methods: This study compared the outcomes of ESWT (Group A) (n = 20) and intravenously applied prostacyclin and bisphosphonate (Group B) (n = 20) in the treatment of BMES of the knee in our department between 2011 and 2013. The Visual Analog Scale for pain (VAS, 100 mm), the Western Ontario and McMaster University Osteoarthritis Index (WOMAC), the SF-36 scores and MRI scans as well as plain radiographs were obtained before and after therapy between two groups. Results: Compared with Group B, we found greater improvement in VAS, the WOMAC Osteoarthritis Index and SF-36 score at 1, 3 and 6 months post-treatment in Group A ($P < 0.05$). Furthermore, MRI scans showed a higher incidence of distinct reduction and complete regression of bone marrow edema at 6 months in Group A (95 vs. 65 %; $P = 0.018$). The MRI at 1 year follow-up showed complete regression in all patients in Group A. However, two cases in Group B continued to normalize over the subsequent follow-up period. Conclusions: ESWT can produce

rapid pain relief and functional improvement. It may be an effective, reliable, and non-invasive technique for rapid treatment of BMES of the knee.
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NR 30
TC 31
Z9 38
U1 0
U2 17
PU BMC
PI LONDON
PA CAMPUS, 4 CRINAN ST, LONDON N1 9XW, ENGLAND
SN
EI 1471-2474
J9 BMC MUSCULOSKEL DIS
JI BMC Musculoskelet. Disord.
PD DEC 5
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IS
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DI 10.1186/s12891-015-0837-2
PG 8
WC Orthopedics; Rheumatology
SC Orthopedics; Rheumatology
GA CX6CL
UT WOS:000365788700002
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ER

PT J
AU Rouzi, AA
Ardawi, MSM

Qari, MH
Bahksh, TM
Raddadi, RM
Ali, AY
Jalal, MM
Taha, AA
Kary, HS
AF Rouzi, Abdulrahim A.
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Qari, Mohammed H.
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Raddadi, Rajaa M.
Ali, Ahmed Y.
Jalal, Mona M.
Taha, Amal A.
Kary, Heba S.
TI Risk factors for falls in a longitudinal cohort study of Saudi postmenopausal women: the Center of Excellence for Osteoporosis Research Study
SO MENOPAUSE-THE JOURNAL OF THE NORTH AMERICAN MENOPAUSE SOCIETY
LA English
DT Article
DE Falls; Postmenopausal women; Risk factors
ID population-based cohort; older-adults; vitamin-d; physical performance; vertebral fractures; elderly persons; japanese men; community; prevention; people
AB Objective: This study aims to identify possible risk factors for falls among Saudi postmenopausal women in a population-based study. Methods: Seven hundred seven postmenopausal women aged 50 years or older were followed in a prospective cohort study. Participant demographic characteristics, medical history, lifestyle factors, past-year history of falls, and physical activity (PA) scores were assessed. We recorded single and multiple falls, anthropometric parameters, five special physical performance tests, hormone levels, and bone mineral density measurements. Data on knee osteoarthritis (OA), lumbar spondylosis, and osteopenia were collected. Knee and lower back pain were assessed by interview, and cognition was assessed with Mini-Mental State Examination. Results: During the mean (SD) follow-up of 5.2 (1.3) years, 164 women (23.2%) reported at least one fall, of whom 73 women (10.3%) reported multiple falls. Six independent predictors of all falls were identified: PA score of 12.61 or lower (lowest quartile; odds ratio [OR], 4.10; 95% CI, 1.82-8.90); past-year history of falls (OR, 2.44; 95% CI, 2.30-2.90); age 65 years or older (OR, 2.16; 95% CI, 1.30-3.12); presence of knee OA (OR, 1.56; 95% CI, 1.03-2.34); handgrip strength of 13.88 kg or lower (lowest quartile; OR, 1.33; 95% CI, 1.09-1.64); and 8-ft walk test of 3.94 s or longer (highest quartile; OR, 1.18; 95% CI, 1.07-1.35). Conclusions: Poor PA score, past-year history of falls, age 65 years or older, presence of knee OA, poor handgrip strength, and prolonged time on the 8-ft walk test are risk factors for all falls among Saudi

postmenopausal women.
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NR 47
TC 10
Z9 10
U1 0
U2 5
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 1072-3714
EI 1530-0374
J9 MENOPAUSE
JI Menopause-J. N. Am. Menopause Soc.
PD SEP 15
PY 2015
VL 22
IS 9
BP 1012
EP 1020
DI 10.1097/GME.0000000000000418
PG 9
WC Obstetrics & Gynecology
SC Obstetrics & Gynecology
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UT WOS:000369603500014
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PT J
AU Gamble, C
Nguyen, J
Hashmi, SS
Hecht, JT
AF Gamble, Candace
Nguyen, Joanne

Hashmi, S. Shahrukh
Hecht, Jacqueline T.
TI Pseudoachondroplasia and painful sequelae
SO AMERICAN JOURNAL OF MEDICAL GENETICS PART A
LA English
DT Article
DE dwarfism; pseudoachondroplasia; pain; bone fragility; COMP
ID multiple epiphyseal dysplasia; osteoarthritis; mutations; knee
AB Pseudoachondroplasia (PSACH) is a well-described autosomal dominant short limb dwarfing condition caused by mutations in the cartilage oligomeric matrix protein gene (COMP). The most debilitating complication of the disorder is joint pain starting in childhood, the extent and severity of which is poorly defined. The aim of this study was to fully assess the pain and identify additional clinical complications affecting those with PSACH. An online survey was distributed to individuals with PSACH. Of the 77 surveys analyzed, 83% reported chronic pain starting as early as the newborn period. Pain was most frequently reported in weight bearing joints including the knees, hips, and back, and significantly interfered with their overall quality of life. For pain relief, patients with PSACH used a wide variety of treatments. However, patients reported only a 60% resolution of pain with their current treatments. An increase in other comorbidities was not found, specifically osteoporosis was not increased. This study documents for the first time that pain is the most common presenting symptom in PSACH and is often overlooked until short stature becomes obvious. The recognition of chronic pain as one of the earliest manifestations of PSACH is important to allow for prompt diagnosis. (c) 2015 Wiley Periodicals, Inc.
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NR 18
TC 21
Z9 25
U1 0
U2 1
PU WILEY-BLACKWELL
PI HOBOKEN
PA 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
SN 1552-4825
EI 1552-4833
J9 AM J MED GENET A
JI Am. J. Med. Genet. A
PD NOV 15
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VL 167
IS 11
BP 2618
EP 2622
DI 10.1002/ajmg.a.37253
PG 5
WC Genetics & Heredity
SC Genetics & Heredity
GA CU1LB
UT WOS:000363281900022
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ER

PT J
AU Dai, LF
Wu, HY
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Zhao, HB
Xue, LJ
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Hu, M
AF Dai, Lifen
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Xue, Lanjie
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Shen, Zhiqiang
Hu, Min
TI Effects of OsteoKing on osteoporotic rabbits
SO MOLECULAR MEDICINE REPORTS
LA English
DT Article
DE micro-computerized tomography; ovariectomy; bone mineral density; osteoporosis; Heng-Gu-Gu-Shang-Yu-He-Ji; OsteoKing
ID bone-mineral density; biochemical markers; postmenopausal women; anabolic therapy; turnover; alendronate; microarchitecture; determinants; biomechanics; healthy
AB Heng-Gu-Gu-Shang-Yu-He-Ji, also known as OsteoKing, is used as a herbal Traditional Chinese Medicine for the treatment of bone disease, including femoral head necrosis and osteoarthritis. However, whether OsteoKing has anti-osteoporotic properties has remained to be elucidated. The purpose of the present study was therefore to investigate the effects of OsteoKing on ovariectomy-induced osteoporosis in rabbits. Female New Zealand white rabbits were randomly divided into an ovariectomized (OVX) group and a sham-surgery group. The rabbits in the OVX group were subjected to an ovariectomy, while the rabbits in the sham group were subjected to the removal of an area of fat near the two ovaries. Bone mineral density, mechanical properties, serum biochemical parameters and micro-architecture were examined at 150 days post-OVX to characterize the experimental animal model. Once the osteoporotic rabbit model had been established, the rabbits in the OVX group were divided into the following groups: Model group, nilestriol group and 300 and 600 mg/kg OsteoKing groups, containing 16 rabbits in each group. OsteoKing and nilestriol were administered orally. The bone mineral density, mechanical properties, serum biochemical parameters, histology and micro-architecture were examined using dual-energy X-ray absorptiometric analysis, mechanical assessments, enzyme-linked

immunosorbent assays, histopathological evaluation and micro-computerized tomography examination following 60 days and 120 days of treatment, respectively. Treatment with OsteoKing led to an elevation in the bone mineral density of the vertebra and serum phosphorus levels, reduced serum concentrations of osteocalcin, procollagen type I N-terminal peptide, tartrate-resistant acid phosphatase 5b and cross-linked N-telopeptide of type I collagen, improved mechanical properties (maximum load, stiffness and energy absorption capacity), and micro-architecture of the lumbar vertebra in the OVX osteoporotic rabbit model following treatment for 120 days. In conclusion, it was demonstrated that OsteoKing is effective in the prevention of estrogen deficiency-associated bone loss and may be a promising drug for the treatment of post-menopausal osteoporosis.
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Zhao Hong-bin, 2005, CHIN J INTEGR MED, V11, P297
NR 53
TC 17
Z9 22
U1 1
U2 36
PU SPANDIDOS PUBL LTD
PI ATHENS
PA POB 18179, ATHENS, 116 10, GREECE
SN 1791-2997
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J9 MOL MED REP
JI Mol. Med. Rep.
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VL 12
IS 1
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WC Oncology; Medicine, Research & Experimental
SC Oncology; Research & Experimental Medicine
GA CN0WJ
UT WOS:000358134400144
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ER

PT J

AU Jose, J
Pasquotti, G
Smith, MK
Gupta, A
Lesniak, BP
Kaplan, LD
AF Jose, Jean
Pasquotti, Giulio
Smith, Marvin K.
Gupta, Akhil
Lesniak, Bryson P.
Kaplan, Lee D.
TI Subchondral insufficiency fractures of the knee: review of imaging findings
SO ACTA RADIOLOGICA
LA English
DT Review
DE Joint diseases; bone fractures; knee; magnetic resonance imaging (MRI); osteopenia
ID spontaneous osteonecrosis; femoral-head; transient osteoporosis; diagnosis; lesions; bone; sonk; hip
AB Subchondral insufficiency fracture of the knee (SIFK) is a potentially devastating disorder that may progress rapidly to osteoarthritis with articular surface collapse. It should be suspected in the appropriate clinical setting, as in early stages it is usually indistinct on initial plain radiographs and magnetic resonance imaging is required for a definitive diagnosis. Outcome of SIFK depends on several factors, including the initial subchondral fracture size, patient BMI, degree of osteopenia, as well as early diagnosis and initial treatment. The purpose of this paper is to review the clinical presentation, pathophysiology, image findings, complications and outcome of SIFK.
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AF Yoshimura, Noriko
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TI Mutual associations among musculoskeletal diseases and metabolic syndrome components: A 3-year follow-up of the ROAD study
SO MODERN RHEUMATOLOGY
LA English
DT Article
DE Incidence; Knee osteoarthritis; Lumbar spondylosis; Metabolic risk factor; Osteoporosis
ID radiographic knee osteoarthritis; body-mass index; risk-factors; diagnostic-criteria; lumbar spondylosis; diabetes-mellitus; japanese men; progression; fractures; women
AB Objective. This study aimed to assess the mutual associations between musculoskeletal diseases (knee osteoarthritis [KOA], lumbar spondylosis [LS], osteoporosis [OP]) and metabolic syndrome components (obesity [OB], hypertension [HT], dyslipidemia [DL], impaired glucose tolerance [IGT]). Methods. Of the 1,690 participants (596 men, 1,094 women) at baseline, 1,384 individuals (81.9%; 466 men, 918 women) had complete data at the first follow-up in 2008. Logistic regression analysis included the occurrence or nonoccurrence of the musculoskeletal diseases or metabolic components as the outcome variable and the remaining musculoskeletal diseases and metabolic components at baseline as explanatory variables, adjusted for age, sex, residential region, smoking, and alcohol consumption. Results. The risk of KOA occurring increased significantly with HT (odds ratio [OR], 2.57; 95% confidence interval [CI], 1.22-5.42; p = 0.013) and IGT (OR, 1.99; 95% CI, 1.07-3.70; p = 0.029). The risk of OP occurring at the lumbar spine increased with OP at the femoral neck (OR, 4.21; 95% CI 1.46-12.1; p = 0.008), and vice versa (OR, 2.19; 95% CI, 1.01-479; p = 0.047). KOA increased the risk of HT

(Kellgren-Lawrence [KL] grade=0, 1 vs. KL = 2: OR, 1.84; 95% CI, 1.09-3.12; p = 0.024) and DL (KL = 0, 1 vs. KL >= 3: OR, 1.66; 95% CI, 1.05-2.61; p = 0.029) occurring. Reciprocal relationships existed between the presence of metabolic components and the occurrence of the other metabolic components. Conclusion. Mutual relationships existed between the occurrence and presence of musculoskeletal diseases, particularly KOA, and metabolic syndrome components.
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FU Ministry of Health, Labour and Welfare [H17-Men-eki-009, H20-Choujyu-009, H23-Choujyu-002, H-25-Choujyu-007, H25-Nanchitou(Men)-005]; Ministry of Education, Culture, Sports, Science and Technology in Japan [B23390172, B20390182, 24659317, B23390357, C20591737, B23390356, C20591774, 23659580, 24659666, 21659349, A18689031]; NSF [08033011-00262]; Japan Osteoporosis Society; Japanese Orthopaedic Association (JOA) [2006-1, 2010-2]; Grants-in-Aid for Scientific Research [26293329, 24659317, 25670293, 23659580, 24659666, 21659349, 26293331] Funding Source: KAKEN
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AU Tsouknidas, A
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AF Tsouknidas, A.
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TI The effect of osteoarthritis on the regional anatomical variation of subchondral trabecular bone in the femoral head
SO CLINICAL BIOMECHANICS
LA English
DT Article
DE Femoral head; Osteopenetration; Cancellous bone characteristics; Osteoarthritis
ID cancellous bone; mechanical-property; cartilage degeneration; distributions; osteoporosis; knee
AB Background: The subchondral trabecular bone is located deep inside the articular cartilage, with the subcapital region carrying up to 70% of the diurnal loads occurring in the hip joint. This leads to severe regional anatomical variations of subchondral trabecular bone in the femoral head and the purpose of this study was to examine whether osteoarthritis affects these topographic characteristics. Methods: 60 femoral heads were harvested during hip replacement and studied by osteopenetration at 8 pre-defined angles, at a penetration rate of 1 mm/s. Twenty-eight of the donors underwent surgery due to osteoarthritis, whereas the remaining were trauma patients with hip fractures. To correlate these measurements to non-invasive data, all specimens were scanned by micro Computed Tomography (mu CT) prior to experimentation. A cross-sectional area, perpendicular to the needle penetration pathway, was analyzed and the deviations compared to the recorded osteopenetration energy. Findings: The experiments revealed significant topographical deviations in the trabeculae. These were more pronounced in the osteoarthritic samples which also required overall higher osteopenetration energy. A notable dependency of the directional bone strength to its cross-sectional characteristics was observed. Although the effect of "gender" on osteopenetration energy was proven to be significant, gender was not considered an independent variable in a regression model correlating

osteopenetration energy to 20 trabecular bone density as this did not improve the value of the adjusted R-2. Interpretation: The investigation provided refined insight into femoral head load-bearing capacity of patients suffering from osteoarthritis, as a comparison of osteoarthritic to healthy samples illustrated that subchondral trabecular bone in the femoral head region is subjected to increased remodeling and demineralization, reflected in higher osteopenetration values. (C) 2015 Elsevier Ltd. All rights reserved.
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10.1080/10255842.2013.849342
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TI Imaging atlas for eligibility and on-study safety of potential knee adverse events in anti-NGF studies (Part 1)
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Imaging; Safety; aNGF; Osteoarthritis; Osteonecrosis
ID tibial plateau alignment; bone-marrow lesions; spontaneous osteonecrosis; transient osteoporosis; osteoarthritis; pain; tanezumab; joint; growth; association
AB Monoclonal antibodies that bind and inhibit nerve growth factor (NGF) have demonstrated both, good analgesic efficacy and improvement in function in patients with osteoarthritis (OA). Despite initial promising data, trials in OA had been suspended by the Federal Food and Drug Administration (FDA) due to concerns over accelerated rates of OA progression. Imaging will play a crucial role in future clinical trials to define eligibility of potential participants and to monitor safety during the course of these studies. This will require baseline and frequent follow-up radiographs of both, the index joints and other large weight bearing joints to identify subjects at risk prior inclusion and on study so treatment can be discontinued. This imaging overview in the form of an atlas describes and illustrates potential exclusionary joint imaging findings at eligibility and potential adverse joint events on radiography and magnetic resonance imaging (MRI) in studies investigating a-NGF compounds. The overarching goal of this atlas is to facilitate trial design and to promote a common language and understanding between potential expert readers. This first section of the atlas will focus on knee joint specific findings that are relevant to a-NGF studies. (C) 2014 Published by Elsevier Ltd on behalf of Osteoarthritis Research Society International.
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AU Yang, GY
Wang, LQ
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TI Evidence Base of Clinical Studies on Tai Chi: A Bibliometric Analysis
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DT Article
ID aerobic capacity; elderly-people; exercise; fear
AB Background The safety and health benefits of Tai Chi mind-body exercise has been documented in a large number of clinical studies focused on specific diseases and health conditions. The objective of this systematic review is to more comprehensively summarize the evidence base of clinical studies of Tai Chi for healthcare. Methods and Findings We searched for all types of clinical studies on Tai chi in PubMed, the Cochrane Library and four major Chinese electronic databases from their inception to July 2013. Data were analyzed using SPSS17.0 software. A total of 507 studies published between 1958 and 2013 were identified, including 43 (8.3%) systematic reviews of clinical studies, 255 (50.3%) randomized clinical trials, 90 (17.8%) non-randomized controlled clinical studies, 115 (22.7%) case series and 4 (0.8%) case reports. The top 10 diseases/conditions was hypertension, diabetes, osteoarthritis, osteoporosis or osteopenia, breast cancer, heart failure, chronic obstructive pulmonary disease, coronary heart disease, schizophrenia, and depression. Many healthy participants practiced Tai Chi for the purpose of health promotion or preservation. Yang style Tai Chi was the most popular, and Tai Chi was frequently practiced two to three 1-hour sessions per week for 12 weeks. Tai Chi was used alone in more than half of the studies (58.6%), while in other studies Tai Chi was applied in combination with other therapies including medications, health education and other physical therapies. The majority of studies (94.1%) reported positive effects of Tai Chi, 5.1% studies reported uncertain effects and 0.8% studies reported negative effects. No serious adverse events related to Tai Chi were reported. Conclusions The quantity and evidence base of clinical studies on Tai Chi is substantial. However, there is a wide variation in Tai Chi intervention studied and the reporting of Tai Chi intervention needs to be improved. Further well-designed and reported studies are recommended to

confirm the effects of Tai Chi for the frequently reported diseases/conditions.
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TI Effects of BIS076 in a model of osteoarthritis induced by anterior cruciate ligament transection in ovariectomised rats
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
DE Osteoarthritis; BIS076; Anterior cruciate ligament transection model; Ovariectomised rats
ID bone-mineral density; knee osteoarthritis; subchondral bone; ii collagen; cartilage; inhibition; disease; osteoporosis; degradation; progression
AB Background: Osteoarthritis (OA) is the most frequent articular disease and a leading cause of disability. There is a need for effective treatments able to slow the progression of disease. Some of the available treatments are dietary supplements providing natural components. Recent studies have shown that estrogen deficiency contributes to the pathophysiological events of OA progression. Methods: We have used the anterior cruciate ligament transection model of OA in ovariectomised rats to study the effects of BIS076, a new formulation of a natural porcine cartilage extract associated with hydroxyapatite (as a source of calcium) and vitamin D-3. Cartilage degradation, proteoglycan depletion and synovitis were followed by histochemistry. Effects on bone microstructure were determined by mu CT. The levels of biomarkers in serum and inflammatory mediators in knee homogenates were measured by luminex or ELISA. Results: Oral administration of BIS076 reduced articular cartilage damage and serum levels of cartilage degradation markers C-telopeptide of type II collagen and cartilage oligomeric matrix protein, as well as matrix metalloproteinase-3. The local inflammatory response was down-regulated by BIS076 with lower production of pro-inflammatory cytokines and prostaglandin E-2 in joint tissues. In addition, BIS076 was effective on metaphyseal bone alterations as this formulation increased volumetric bone mineral density and improved bone micro-architecture. These effects were related to the modification of bone metabolism reflected by changes in bone biomarkers with reductions in the ratio receptor activator of nuclear factor.B ligand/osteoprotegerin and the levels of tartrate-resistant acid phosphatase-5b, suggesting an inhibitory activity of BIS076 on trabecular bone resorption. Conclusions: We have demonstrated the protective properties of a new formulation (BIS076) on joint lesion and bone

alterations in an experimental model of OA in ovariectomised rats. This study supports the interest of BIS076 in OA treatments.
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TC 8
Z9 12
U1 0
U2 10
PU BMC
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AU Boules, M
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TI Pre-operative opioid analgesia reduces clinical success of laparoscopic gastric electrical stimulation placement in patients with gastroparesis
SO SURGICAL ENDOSCOPY AND OTHER INTERVENTIONAL TECHNIQUES
LA English
DT Article
DE Gastric pacemaker; Gastric electrical stimulator (GES); Opioid analgesia; Endoscopy
ID narcotic bowel syndrome; pathophysiology; tolerance
AB Gastroparesis is a common chronic and costly disorder for which medical therapy is often unsuccessful. Gastric electrical stimulation (GES) has been used to treat refractory cases, however, response is variable and difficult to predict. This study aims to assess whether pre-operative opioid analgesics (OA) use affects clinical success of GES. Records of 128 patients who underwent laparoscopic GES placement from March 2001 to September 2012 were analyzed retrospectively. Data collected included demographics, surgical outcomes, and clinical parameters. Pre- and post-operative opioid analgesic dosing (No = 0 morphine equivalents

(ME)/day, Low = 0-40 ME/day, Mid = 41-80 ME/day, High > 80 ME/day), as well as clinical symptom assessment was collected for up to 3 years post-operatively. Clinical success was defined as (1) OA reduction of > 50 %, (2) maintenance of weight, or (3) symptom improvement. Descriptive statistics were computed for all factors. A $p < 0.05$ was considered statistically significant. Fifty-three patients were on OA pre-operatively compared to 69 patients who were not. Patients not on OA pre-operatively were less likely than those on OA pre-op group to be on OA post-operatively ($p = 0.005$); however, there were no differences in weight or symptom improvement. Sub-group analysis of the 53 patients on OA demonstrated significant improvement in clinical symptoms in the low-morphine cohort compared to the mid-morphine cohort ($p = 0.02$), and OA dosing post-operatively in the low-morphine cohort diminished significantly compared to mid- and high-morphine cohort ($p = 0.032$). There was no significant difference in weight. OA dosing pre-operatively significantly affects clinical success of GES placement. Criteria for offering GES implantation may need to take OA dosing into consideration.

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Z9 9
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AU Bousson, V
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TI Trabecular Bone Score: Where are we now?
SO JOINT BONE SPINE

LA English
DT Review
DE Osteoporosis; Fragility fracture; Densitometry; Bone mineral density; Trabecular Bone Score
ID mineral density; lumbar spine; primary hyperparathyroidism; osteoporotic fractures; postmenopausal women; vertebral fractures; caucasian women; white women; tbs; microarchitecture
AB The Trabecular Bone Score is a rather new index obtained at the lumbar spine at the same time as a real bone mineral density. It was developed to reflect bone microarchitecture. It was proposed to be easily used in everyday practice as a surrogate of bone strength. Our aim was to review 1. technical points such as correlations between Trabecular Bone Score and bone microarchitectural parameters, Trabecular Bone Score and bone strength, the effects of dual-energy X-ray absorptiometry image spatial resolution, age, macroarchitecture, body mass index, and osteoarthritis, on Trabecular Bone Score, and 2. evidences to use Trabecular Bone Score for separating individuals with fragility fractures from controls, predicting fragility fractures, and for longitudinally monitoring changes related to treatments. Correlations between Trabecular Bone Score and bone microarchitectural parameters vary widely across bone sites, microarchitectural parameters, and study designs. In vivo, the Trabecular Bone Score explains little of the variance in trabecular microarchitectural parameters. We emphasize that it is a texture parameter. The Trabecular Bone Score is reduced in patients with fragility fracture. Several retrospective and prospective studies have shown its discriminative ability regarding the fracture risk. When combining the areal Bone mineral Density and Trabecular Bone Score, the Trabecular Bone Score remains a predictor of fracture but not the areal Bone Mineral Density. However in prospective studies, the best predictor of fracture remains hip areal bone mineral density. Due to the lack of evidence, we recommend not to use Trabecular Bone Score for following patients treated by anti-osteoporotic drugs. (C) 2015 Societe francaise de rhumatologie. Published by Elsevier Masson SAS. All rights reserved.
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U1 0
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JI Joint Bone Spine
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TI Population-based study of the association of osteoporosis and chronic

musculoskeletal pain and locomotive syndrome: the Katashina study
SO JOURNAL OF ORTHOPAEDIC SCIENCE
LA English
DT Article
ID quality-of-life; low-back-pain; quantitative ultrasound; knee osteoarthritis; japanese women; health; disability; prevalence; community; men
AB "Locomotive syndrome", a concept proposed by the Japanese Orthopaedic Association (JOA), refers to risk conditions among the elderly population that may lead to the need for nursing care services. The association between osteoporosis (OP) or chronic musculoskeletal pain (CMSP) and the screening results of locomotive dysfunction identified by the GLFS-25 (a 25-question geriatric locomotive function scale) has not yet been adequately investigated. Two hundred eighty-seven Japanese subjects were evaluated for locomotive dysfunction using the GLFS-25 and were also evaluated for their bone status by a quantitative ultrasound (QUS) assessment of the bone status (i.e., the measurement of the speed of sound (SOS) of the calcaneus). Furthermore, a questionnaire survey concerning CMSP persisting for 3 months or longer was given to those subjects. Statistical analyses were conducted to clarify the association between the bone status or CMSP and the screening results for locomotive dysfunction. The % young adult mean (%YAM) of the SOS was significantly lower among the 43 subjects with locomotive dysfunction identified by the GLFS-25 than in the 244 subjects without locomotive dysfunction ($p < 0.001$). Moreover, low back pain ($p < 0.01$), shoulder pain ($p < 0.05$) and knee pain ($p < 0.001$) were significantly more frequently observed in the 43 subjects with locomotive dysfunction than the 244 subjects without locomotive dysfunction. The screening results of the %YAM of the SOS was significantly associated with the population demonstrating locomotive dysfunction screened by the GLFS-25 based on the age-, gender- and BMI-adjusted analysis (OR 0.95, 95 % CI 0.91-0.98). Furthermore, the %YAM of SOS correlated with the GLFS-25 score (beta = -0.212, p = 0.001). Furthermore, low back pain (OR 2.60, 95 % CI 1.29-5.24), shoulder pain (OR 2.16, 95 % CI 1.00-4.66), and knee pain (OR 2.97, 95 % CI 1.41-6.28) were found to be associated with locomotive dysfunction based on the results of the age-, gender- and a BMI-adjusted analysis. The %YAM of the SOS was associated with the population demonstrating locomotive dysfunction which was identified using the GLFS-25, and the severity of locomotive dysfunction evaluated by the GLFS-25 was found to correlate with the %YAM of the SOS. Furthermore, low back pain, shoulder pain and knee pain were found to be associated with the screening results for locomotive dysfunction by the GLFS-25.
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PA RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS
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JI J. Orthop. Sci.
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TI Medial Unicondylar Knee Arthroplasty Improves Patellofemoral Congruence: a Possible Mechanistic Explanation for Poor Association Between Patellofemoral

Degeneration and Clinical Outcome
SO JOURNAL OF ARTHROPLASTY
LA English
DT Article
DE unicondylar knee arthroplasty; patellofemoral joint; fixed bearing; congruence; clinical follow-up
ID follow-up; unicompartmental arthroplasty; radiological assessment; osteoarthritis-index; western-ontario; replacement; joint; minimum; subluxation; arthritis
AB The purpose was to determine the effect of medial fixed bearing unicondylar knee arthroplasty (UKA) on postoperative patellofemoral joint (PFJ) congruence and analyze the relationship of preoperative PFJ degeneration on clinical outcome. We retrospectively reviewed 110 patients (113 knees) who underwent medial UKA. Radiographs were evaluated to ascertain PFJ degenerative changes and congruence. Clinical outcomes were assessed preoperatively and postoperatively. The postoperative absolute patellar congruence angle (10.05 +/- 10.28) was significantly improved compared with the preoperative value (14.23 +/- 11.22) (P = 0.0038). No correlation was found between preoperative PFJ congruence or degeneration severity, and WOMAC scores at two-year follow up. Pre-operative PFJ congruence and degenerative changes do not affect UKA clinical outcomes. This finding may be explained by the post-op PFJ congruence improvement. (C) 2015 Elsevier Inc. All rights reserved.
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PT J
AU Cui, ZL
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AF Cui, Zhanglin
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Bush, Elizabeth Nicole
TI Characteristics of hip fracture patients with and without muscle atrophy/weakness: Predictors of negative economic outcomes
SO JOURNAL OF MEDICAL ECONOMICS
LA English
DT Article
AB Objective: Hip fractures have negative humanistic and economic consequences.

Predictors and sub-groups of negative post-fracture outcomes (high costs and extensive healthcare utilization) were identified in patients with and without muscle atrophy/weakness (MAW). Methods: Truven Health MarketScan data identified patients >= 50 years old with inpatient hospitalizations for hip fracture. Patients had >= 12 months of continuous healthcare insurance prior to and following index hospitalization and no hip fracture diagnoses between 7 days and 1 year prior to admission. Predictors and sub-groups of negative outcomes were identified via multiple logistic regression analyses and classification and regression tree (CART) analyses, respectively. Results: Post-fracture 1-year all-cause healthcare costs (USD$31,430) were higher than costs for the prior year ($18,091; p<0.0001). Patients with MAW had greater post-fracture healthcare utilization and costs than those without MAW (p<0.05). Greater post-fracture costs were associated with a higher number of prior hospitalizations and emergency room visits, length of index hospitalization, Charlson Comorbidity Index (CCI), and discharge status; diagnosis of rheumatoid arthritis, osteoarthritis, or osteoporosis; and prior use of antidepressants, anticonvulsants, muscle relaxants, benzodiazepines, opioids, and oral corticosteroids (all p<0.009). High-cost patient sub-groups included those with MAW and high CCI scores. Conclusions: Negative post-fracture outcomes were associated with MAW vs no MAW, prior hospitalizations, comorbidities, and medications.
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WC Economics; Health Care Sciences & Services; Health Policy & Services; Medicine, General & Internal
SC Business & Economics; Health Care Sciences & Services; General & Internal Medicine
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PT J
AU Han, NR
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Kim, NR
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Kim, Hyung-Min
TI Protective effect of porcine placenta in a menopausal ovariectomized mouse
SO REPRODUCTION
LA English
DT Article
ID hormone replacement therapy; estrogen-receptor beta; postmenopausal women; cell-proliferation; bone-marrow; in-vitro; l-lysine; differentiation; supplementation; osteoarthritis
AB Menopause is a significant physiological phase that occurs as women's ovaries stop producing ovum and the production of estrogen declines. Human placenta and some amino acids are known to improve menopausal symptoms. In this study, we investigated that porcine placenta extract (PPE) and arginine (Arg), a main amino acid of PPE, would have estrogenic activities in ovariectomized (OVX) mice

as a menopause mouse model, human breast cancer cell line (MCF-7) cells, and human osteoblast cell line (MG-63) cells. PPE or Arg significantly inhibited the body weight and increased the vagina weight compared to the OVX mice. PPE or Arg ameliorated the vaginal atrophy in the OVX mice. The levels of 17 beta-estradiol and the activities of alkaline phosphatase (ALP) were significantly increased by PPE or Arg in the serum of OVX mice. Trabecular bone parameters such as bone mineral density and porosity were also improved by PPE or Arg in the OVX mice. In the MCF-7 and MG-63 cells, PPE or Arg significantly increased the cell proliferation, estrogen receptor beta mRNA expression, and estrogen-response elements luciferase activity. Finally, PPE or Arg increased the activations of ALP and extracellular signal-regulated kinase 1/2 in the MG-63 cells. These results indicate that PPE or Arg would have estrogenic and osteoblastic activity. Therefore, PPE or Arg may be useful as new pharmacological tools for treating menopausal symptoms including osteoporosis.
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U1 0
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TI Recommendations for an update of the 2010 European regulatory guideline on clinical investigation of medicinal products used in the treatment of osteoarthritis and reflections about related clinically relevant outcomes: expert consensus statement
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Review
DE Osteoarthritis; Registration of drugs; Guideline
ID nonsteroidal antiinflammatory drugs; patient reported outcm; total joint replacement; slow-acting drugs; double-blind; knee osteoarthritis; glucosamine sulfate; hip osteoarthritis; symptomatic efficacy; hyaluronic-acid
AB Objective: The European Society on Clinical and Economic aspects of Osteoporosis and Osteoarthritis (ESCEO) organised a working group to evaluate the need for updating the current European guideline on clinical investigation of drugs used in the treatment of osteoarthritis (OA). Design: Areas of potential attention were identified and the need for modifications, update or clarification was examined. Proposals were then developed based on literature reviews and through a consensus process. Results: It was agreed that the current guideline overall still reflects the current knowledge in OA, although two possible modifications were identified. The first relates to the number and timing of measurements required as primary endpoints during clinical trials of symptom-relieving drugs, either drugs with rapid onset of action or slow acting drugs. The suggested modifications are intended to take into consideration the

time related clinical need and expected time response to these drugs - i.e., a more early effect for the first category in addition to the maintenance of effect, a more continuous benefit over the long-term for the latter - in the timing of assessments. Secondly, values above which a benefit over placebo should be considered clinically relevant were considered. Based on literature reviews, the most consensual values were determined for primary endpoints of both symptom-relieving drugs (i.e., pain intensity on a visual analogue scale (VAS)) and disease-modifying drugs (i.e., radiographic joint-space narrowing). Conclusions: This working document might be considered by the European regulatory authorities in a future update of the guideline for the registration of drugs in OA. (C) 2015 The Authors. Published by Elsevier Ltd and Osteoarthritis Research Society International.
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TI Mechanotransduction pathways in bone pathobiology
SO BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR BASIS OF DISEASE
LA English
DT Review
DE Bone disease; Mechanotransduction; Osteoarthritis; Osteoporosis; Osteosarcoma; Chondrosarcoma
ID superficial zone protein; cyclic tensile strain; primary cilia; articular-cartilage; mechanical-stress; growth-factor; in-vivo; osteoarthritic cartilage; chondrocyte apoptosis; transcription factors
AB The skeleton is subject to dynamic changes throughout life and bone remodeling is essential for maintenance of bone functionality. The cell populations which predominantly participate in bone and cartilage remodeling, namely osteocytes, osteoblasts, osteodasts and chondrocytes sense and respond to external mechanical signals and via a series of molecular cascades control bone metabolism and turnover rate. The aforementioned process, known as mechanotransduction, is the underlying mechanism that controls bone homeostasis and function. A wide array of cross-talking signaling pathways has been found to play an important role in the preservation of bone and cartilage tissue health. Moreover, alterations in bone mechanotransduction pathways, due to genetic, hormonal and biomechanical factors, are considered responsible for the pathogenesis of bone and cartilage diseases. Extensive research has been conducted and demonstrated that aberrations in mechanotransduction pathways result in disease-like effects, however only few signaling pathways have actually been engaged in the development of bone disease. The aim of the present review is to present these signaling molecules and cascades that have been found to be mechano-responsive and implicated in bone disease development, as revealed by research in the last five years. In addition, the role of these molecules as prognostic or diagnostic disease markers and their potential as therapeutic targets are also discussed. (C) 2015 Elsevier B.V. All rights reserved.
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TI Joint space narrowing, body mass index, and knee pain: the ROAD study (OAC1839R1)

SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Cohort study; Epidemiology; Osteoarthritis; Pain
ID quality-of-life; individual radiographic features; middle-aged women; risk-factors; bone-marrow; osteoarthritis; association; progression; cohort; impact
AB Objective: The objective of the present study was to clarify the association of joint space narrowing with knee pain in Japanese men and women using a large-scale population-based cohort of the Research on Osteoarthritis/osteoporosis Against Disability (ROAD) study. Methods: This study examined the association between minimum joint space width (mJSW) in the medial compartment and pain at the knee. mJSW was measured in the medial and lateral compartments of the knee using a knee osteoarthritis (OA) computer-aided diagnosis system. Results: From the 3040 participants in the ROAD study, the present study analyzed 2733 participants who completed the radiographic examinations and questionnaires regarding knee pain (975 men and 1758 women; mean age, 69.9 +/- 11.2 years). Subjects with lateral knee OA were excluded. After adjustment for age and Body mass index (BMI), medial mJSW, as well as medial mJSW/lateral mJSW, was significantly associated with knee pain. Sex and BMI affected the association of medial mJSW with knee pain. The threshold of medial mJSW was approximately 3 mm in men and 2 mm in women, while that of medial mJSW/lateral mJSW was approximately 60% in both men and women. BMI was found to have a distinct effect on the association of mJSW with pain. Conclusion: The present cross-sectional study using a large-scale population from the ROAD study showed that joint space narrowing had a significant association with knee pain. The thresholds of joint space narrowing for knee pain were also established.
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TI Association between serum vitamin D status and health-related quality of life (HRQOL) in an older Korean population with radiographic knee osteoarthritis: data from the Korean national health and nutrition examination survey (2010-2011)
SO HEALTH AND QUALITY OF LIFE OUTCOMES
LA English
DT Article
DE Vitamin D; Quality of life; EQ-VAS; EQ-5D; Osteoarthritis; knee
ID 25-hydroxyvitamin d; d supplementation; d deficiency; physical function; disability; pain; osteoporosis; comorbidity; performance; limitations
AB Background: Vitamin D is important in bone health and its relationship with osteoarthritis has recently been reported. Both vitamin D deficiency and knee osteoarthritis are age dependent and are known to affect quality of life (QOL) in older populations. In this study, we aimed to determine the association between vitamin D status and health-related quality of life (HRQOL) in an older Korean population with knee osteoarthritis. Methods: A total of 2,165 participants aged >= 50 years with radiographic knee osteoarthritis defined as Kellgren-Lawrence (KL) grade >= 2 were selected from data from the 5th Korean National Health and Nutrition Examination Survey (KNHANES V), a representative cross-sectional nationwide survey conducted in 2010-2011. They stratified into two levels by vitamin D status (deficiency < 10 ng/dL and normal >= 10 ng/dL). HRQOL was measured using the EuroQOL visual analogue scale (EQ-VAS) and the five dimensions and summary index of the EuroQOL-5 dimension (EQ-5D). Results: The vitamin D deficiency group was more likely to report problems with mobility, self-care, and usual activities. Vitamin D deficiency was significantly associated with

poor HRQOL indicated by the lowest quartile of EQ-VAS (unadjusted odds ratio [OR] = 1.832, p = 0.006) and the lowest quartile of the EQ-5D index (unadjusted OR = 1.992, p = 0.003). Theses associations of vitamin D status with EQ-VAS and EQ-5D index were maintained after adjustment for age and sex (Model 1: OR = 1.677, p = 0.022 and OR = 1.701, p = 0.021, respectively). The significant associations of vitamin D status with EQ-VAS were maintained after adjustment for other possible covariates (Model 3: OR = 1.562, p = 0.044). Also, a trend of associations between vitamin D status and EQ-5D index were shown after adjustment for other covariates (Model3: OR = 1.681, p = 0.056). Conclusion: This is the first study to reveal that vitamin D status is independently associated with HRQOL in an older Korean population with knee osteoarthritis. Our results suggest that the maintenance of sufficient vitamin D status may be important to prevent QOL decline in older populations with knee osteoarthritis.
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J9 HEALTH QUAL LIFE OUT
JI Health Qual. Life Outcomes
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WC Health Care Sciences & Services; Health Policy & Services
SC Health Care Sciences & Services
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AU Cutolo, M
Berenbaum, F
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Punzi, L
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AF Cutolo, Maurizio
Berenbaum, Francis
Hochberg, Marc
Punzi, Leonardo
Reginster, Jean-Yves
TI Commentary on recent therapeutic guidelines for osteoarthritis
SO SEMINARS IN ARTHRITIS AND RHEUMATISM
LA English
DT Review
DE Guidelines; Osteoarthritis treatment; NSAIDs; Hyaluronates; Glucosamine;

Chondroitin sulfate
ID knee osteoarthritis; double-blind; hyaluronic-acid; eular recommendations; oarsi recommendations; glucosamine sulfate; chondroitin sulfate; task-force; placebo; management
AB Background: Despite availability of international evidence-based guidelines for osteoarthritis (OA) management, agreement on the different treatment modalities is lacking. Method: A symposium of European and US OA experts was held within the framework of the Annual European Congress of Rheumatology to discuss and compare guidelines and recommendations for the treatment of knee OA and to reach a consensus for management, particularly for areas in which there is no clear consensus: non-pharmacological therapy; efficacy and safety of analgesics and non-steroidal anti-inflammatory drugs (NSAIDs); intra-articular (i.a.) hyaluronates (HA); and the role of chondroitin sulfate (CS) and/or glucosamine sulfate (GS). Results: All guidelines reviewed agree that knee OA is a progressive disease of the joint whose management requires non-pharmacological and pharmacological approaches. Discrepancies between guidelines are few and mostly reflect heterogeneity of expert panels involved, geographical differences in the availability of pharmacotherapies, and heterogeneity of the studies included. Panels chosen for guideline development should include experts with real clinical experience in drug use and patient management. Implementation of agreed guidelines can be thwarted by drug availability and reimbursement plans, resulting in optimal OA treatment being jeopardized, HA and symptomatic slow-acting drugs for osteoarthritis (SySADOAs) being clear examples of drugs whose availability and prescription can greatly vary geographically. In addition, primary care providers, often responsible for OA management (at least in early disease), may not adhere to clinical care guidelines, particularly for non-pharmacological OA treatment. Conclusion: Harmonization of the recommendations for knee OA treatment is challenging but feasible, as shown by the step-by-step therapeutic algorithm developed by the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO). More easily disseminated and implemented guidance for OA treatment in the primary care setting is key to improved management of OA. (C) 2015 Elsevier Inc. All rights reserved.
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WC Rheumatology
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AU Wu, DK
Li, X
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TI Association of microstructural and mechanical properties of cancellous bone and their fracture risk assessment tool scores
SO INTERNATIONAL JOURNAL OF CLINICAL AND EXPERIMENTAL MEDICINE
LA English
DT Article
DE Microstructural; cancellous bone; fracture risk assessment
ID osteoporotic fractures; mineral density; women; microdamage; strength; diagnosis; age; turnover; alcohol; rats
AB This study is to investigate the association between fracture probabilities determined by using the fracture risk assessment tool (FRAX) and the microstructure and mechanical properties of femoral bone trabecula in osteoporosis (OP) and osteoarthritis (OA) patients with hip replacements. By using FRAX, we evaluated fracture risks of the 102 patients with bone replacements. Using micro CT scanning, we obtained the analysis parameters of microstructural properties of cancellous bone. Through morphometric observations, fatigue tests and compression tests, we obtained parameters of mechanical properties of cancellous bones. Relevant Pearson analysis was performed to investigate the association between the fracture probability and the microstructure and mechanical properties of femoral bone trabecula in patients. Fifteen risk factors in

FRAX were compared between OP and OA patients. FRAX hip fracture risk score and major osteoporotic in OP and OA patients were significantly different. FRAX was associated with tissue bone mineral density and volumetric bone mineral density. Our study suggests that the probabilities of major osteoporotic and hip fracture using FRAX is associated with bone mass but not with micro bone quality.
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FU Natural Science Foundation of China (NSFC) [30772283, 81070695, 81270960]; Program for New Century Excellent Talents in University [NCET-11-0507]; National clinical key subject construction project (Endocrinology, Orthopedics)
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AU Yoshimura, N
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AF Yoshimura, N.
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TI Factors affecting changes in the serum levels of 25-hydroxyvitamin D: a 3-year follow-up of the ROAD study
SO OSTEOPOROSIS INTERNATIONAL
LA English
DT Article
DE 25-Hydroxyvitamin D; Bone mineral density; Nutrition; Population-based cohort study; Risk factors
ID bone-mineral density; vitamin-d inadequacy; postmenopausal women; fracture risk; osteoporosis; calcium; adults; association; deficiency; cohort
AB In this 3-year population-based cohort study, among 1346 subjects, the mean annual change in the serum 25-hydroxyvitamin D levels was 7.6 %/year, which tended to increase during the 3-year period. Multivariate regression analysis indicated that the L2-4 bone mineral density and total daily energy intake were significant independent associated factors. Introduction The aim of this study was to clarify the change rate of the serum levels of 25-hydroxyvitamin D (25D) and the associated factors in a general Japanese population during a 3-year period. Methods The baseline survey of Research on Osteoarthritis/osteoporosis Against Disability study (ROAD), a large-scale population-based cohort study, was performed between 2005 and 2007, and a follow-up survey was repeated 3 years later. Among 1690 participants at baseline, the change rate of the serum 25D levels

were assessed in 1346 individuals (79.6 %; 458 men and 888 women) who completed measurements of 25D at both the baseline and follow-up examinations. The change rate was calculated, and the factors associated with the changes in the 25D levels were determined using multivariate regression analysis after adjustment for age, gender, body mass index, participated month, and regional differences at baseline. Results The mean (standard deviation) change rate of the 25D levels in all subjects was 7.6 (13.3) %/year (men, 8.2 [12.4] %/year; women, 7.3 [13.7] %/year). Multivariate regression analysis indicated that higher bone mineral density at lumbar spine L2-4 ($p = 0.05$) and total daily energy intake ($p = 0.04$) were significantly associated with the change rate of the 25D levels. Conclusions The serum levels of 25D tended to increase over the 3-year period, and higher lumbar bone mineral density and daily energy intake were found to be associated with increases in the 25D levels over time.
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FU Ministry of Education, Culture, Sports, Science and Technology for Scientific Research [B26293139, B23390172, B20390182, 24659317), C20591737, B23390357, C20591774, B23390356, 23659580]; NSF [08033011-00262]; Ministry of Health, Labour and Welfare in Japan [H17-Men-eki-009, H18-Choujyu-037, H20-Choujyu-009, H23-Chojyu-002, H25-Nanchi-to (Men)-005, H25-Chojyu-007]; Japan Osteoporosis Society; Japanese Orthopaedic Association [2006-1, 2010-2]; [A18689031]; [24659666]; Grants-in-Aid for Scientific Research [25670293, 26293331, 26670307, 26293329] Funding Source: KAKEN
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TI Is Zolpidem Associated with Increased Risk of Fractures in the Elderly with Sleep Disorders? A Nationwide Case Cross-Over Study in Taiwan
SO PLOS ONE
LA English
DT Article
ID hip-fractures; older-people; benzodiazepine use; insomnia; falls; behaviors; hypnotics; mortality; hospitalization; osteoporosis
AB Background We conducted a study using a case-crossover design to clarify the risk of acute effects of zolpidem and benzodiazepine on all-sites of fractures in the elderly. Design of study Case-crossover design. Methods and Materials Elderly

enrollees (n = 6010) in Taiwan's National Health Insurance Research Database with zolpidem or benzodiazepine use were analyzed for the risk of developing fractures. Results After adjusting for medications such as antipsychotics, antidepressants, and diuretics, or comorbidities such as hypertension, osteoarthritis, osteoporosis, rheumatoid arthritis and depression, neither zolpidem nor benzodiazepine was found to be associated with increased risk in all-sites fractures. Subjects without depression were found to have an increased risk of fractures. Diazepam is the only benzodiazepine with increased risk of fractures after adjusting for medications and comorbidities. Hip and spine were particular sites for increased fracture risk, but following adjustment for comorbidities, the associations were found to be insignificant. Conclusion Neither zolpidem nor benzodiazepine was associated with increased risk of all-site fractures in this case cross-over study after adjusting for medications or comorbidities in elderly individuals with insomnia. Clinicians should balance the benefits and risks for prescribing zolpidem or benzodiazepine in the elderly accordingly.
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WC Multidisciplinary Sciences
SC Science & Technology - Other Topics
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TI Variability in reference point rnicroindentation and recommendations for testing cortical bone: Location, thickness and orientation heterogeneity
SO JOURNAL OF THE MECHANICAL BEHAVIOR OF BIOMEDICAL MATERIALS
LA English
DT Article
DE Microindentation; Reference point indentation; Bone quality; Homogeneity; Femur
ID in-vivo measurement; femoral-neck; mechanical-property; microindentation; indentation; density; osteoarthritis; fractures; women; men
AB Reference Point Indentation (RPI) has been proposed as a new clinical tool to aid the diagnosis of Osteoporosis. This study has examined the performance of the tool within entire femurs to improve the understanding of the mechanical properties of bone and also to guide future RPI testing to optimize repeatability of results obtained using the technique. Human, bovine, porcine and rat femurs were indented along three longitudinal axes: anterior and posterior: medial and lateral as well as around the circumference of the femoral head and neck. Cortical and subchondral bone thickness was measured using CT and radiography. The study shows that in some samples, bone is too thin to support the high loads applied with the technique and in these cases, RPI values are highly influenced by thickness. The technique will be useful in the mid-shaft region where cortical thickness is greatest, providing previously established guidelines are followed to optimize measurement repeatability, including performing multiple measurements per sample and investigating multiple samples. The study has also provided evidence that RPI values vary significantly with test site, hence mechanical properties should not be inferred from RPI findings alone away from the test site, even within the same bone. In conclusion, RPI appears to be a useful tool for scientific investigation; however further work is required to examine the feasibility of using RPI for assessing differences between healthy and diseased bone in a clinical setting. (C) 2015 Elsevier ltd. All rights reserved.
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SC Engineering; Materials Science
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AU Liao, HH
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TI Prescription patterns of Chinese herbal products for patients with fractures in Taiwan: A nationwide population-based study
SO JOURNAL OF ETHNOPHARMACOLOGY
LA English
DT Article
DE Complementary and alternative medicine; Fracture; National health insurance research database; Rhizoma Drynariae; Shu-jing-huo-xue-tang; Traditional Chinese medicine
ID drynaria-fortunei; medicine use; in-vitro; radix; extract; expression; children; model; phytochemistry; osteoarthritis
AB Ethnopharmacological relevance: Traditional Chinese medicine (TCM) has been used in the treatment of fracture for thousands of years. However, large-scale surveys examing the utilization of Chinese herbal products (CHPs) for treating fractures and their related symptoms are lacking. This study aimed to investigate the prescription patterns of CHPs among patients with fractures in Taiwan. Materials and methods: The TCM usage in patients with fractures was analyzed using a sample of one million individuals randomly selected from the National Health Insurance Research Database who were newly diagnosis with fractures in 2001-2008, with a followed-up period through 2010. Results: We identified 115,327 patients who were newly diagnosed with fractures in the study population. Among them, 4.97% (n=5731) adjunctively utilized TCM for fracture treatment. TCM users were mostly young or middle-aged, female, and resided in highly urbanized areas. With regard to the comorbidities of fractures, TCM users had a lower prevalence of coronary artery disease, chronic obstructive lung disease, diabetes mellitus, hypertension and stroke than non-TCM users, except for osteoporosis. Shu-jing-huo-xue-tang was the most frequently prescribed Chinese herbal formula, while Rhizoma Drynariae (Gu-sui-bu) was the most common single herb for patients with fractures. The CHPs were found to cover not only bone healing but also fracture-related symptoms. TCM users had lower medical expenditure for hospitalization for the first six months after incident fractures than non-TCM users (1749 +/- 2650 versus 2274 +/- 3159 US dollars, $p<0.0001$). Conclusions: Our study identified the TCM utilization for patients with fractures in Taiwan. Integration of

TCM treatment reduced the medical costs for hospitalization. Further basic research and clinical studies to investigate the mechanism and clinical efficacies of CHPs are warranted. (C) 2015 Elsevier Ireland Ltd. All rights reserved.
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NR 58
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U1 0
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PT J
AU Chen, XX
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Yang, Tianfu
TI Roles of leptin in bone metabolism and bone diseases
SO JOURNAL OF BONE AND MINERAL METABOLISM
LA English
DT Review
DE Bone diseases; Bone metabolism; Leptin; Osteoarthritis; Osteoporosis
ID osteoporotic postmenopausal women; sympathetic-nervous-system; stem-cells mscs; serum leptin; mineral density; neuropeptide-y; rheumatoid-arthritis; idiopathic scoliosis; circulating leptin; synovial-fluid
AB Adipose tissue has been more accepted as an active contributor to whole body homeostasis, rather than just a fat depot, since leptin, a 16 kDa protein, was discovered as the product of the obese gene in 1994. With more and more studies conducted on this hormone, it has been shown that there is a close relationship between adipose tissue and bone, which have important effects on each other. Bone is the source of many hormones, such as osteocalcin, that can affect energy metabolism and then the anabolism or catabolism of fat tissue. In contrast, the adipose tissue synthesizes and releases a series of adipokines, which are involved in bone metabolism through direct or indirect effects on bone formation and resorption. Interestingly, leptin, one of the most important cytokines derived from fat tissue, seems to account for the largest part of effects on bone, through direct or indirect involvement in bone remodeling and by playing a significant role in many bone diseases, such as osteoporosis, osteoarthritis, rheumatic arthritis, bone tumors and even fractures. In this review, we will discuss the progress in leptin research, particularly focusing on the roles of leptin in bone diseases.
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Z9 101
U1 0
U2 46
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AU Yoshimura, N
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TI Association between new indices in the locomotive syndrome risk test and decline in mobility: third survey of the ROAD study
SO JOURNAL OF ORTHOPAEDIC SCIENCE
LA English
DT Article
ID to-stand test; sit; disability; older
AB Background We aimed to clarify the association between new indices in a locomotive syndrome risk test and decline in mobility. Methods In the third survey of the Research on Osteoarthritis/osteoporosis Against Disability (ROAD) study, data on the indices were obtained from 1575 subjects (513 men, 1062 women) of the 1721 participants in mountainous and coastal areas. As outcome measures for decline in mobility, we used the five-times-sit-to-stand test (FTSST) and walking speed with cutoff values of 12 s and 0.8 m/s, respectively. Results We first estimated the prevalence of the indices in locomotive syndrome risk test stage 1, including two-step test score < 1.3, difficulty with one-leg standing from a 40-cm-high seat in the stand-up test, and 25-question GLFS score a parts per thousand yen7, which were found to be 57.4, 40.6, and 22.6 %, respectively. Next, we investigated the prevalence of the indices in locomotive syndrome risk test stage 2, including two-step test score < 1.1, difficulty with standing from a 20-cm-high seat using both legs in the stand-up test, and 25-question GLFS score a

parts per thousand yen16, which were found to be 21.1, 7.9, and 10.6 %, respectively. Logistic regression analysis using slow FTSST time or slow walking speed as the objective factor, and presence or absence of indices as the independent factor, after adjusting for confounders, showed all three indices in both stages 1 and 2 were significantly and independently associated with immobility. Finally, we clarified the risk of immobility according to an increasing number of indices in both stages 1 and 2 and found that the odds ratio for both slow FTSST time and slow walking speed increased exponentially. Conclusion We found that the three indices independently predicted immobility and that accumulation of indices increased the risk of immobility exponentially.
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TI Can We Identify Patients with High Risk of Osteoarthritis Progression Who Will Respond to Treatment? A Focus on Biomarkers and Frailty
SO DRUGS & AGING
LA English
DT Article
ID symptomatic knee osteoarthritis; bone-marrow lesions; hip-osteoarthritis; implementing frailty; stratified medicine; clinical-practice; cartilage volume; prevalence; gene; epidemiology
AB Osteoarthritis (OA), a disease affecting different patient phenotypes, appears as an optimal candidate for personalized healthcare. The aim of the discussions of the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO) working group was to explore the value of markers of different sources in defining different phenotypes of patients with OA. The ESCEO organized a series of meetings to explore the possibility of identifying patients who would most benefit from treatment for OA, on the basis of recent data and expert opinion. In the first meeting, patient phenotypes were identified according to the number of affected joints, biomechanical factors, and the presence of lesions in the subchondral bone. In the second meeting, summarized in the present article, the working group explored other markers involved in OA. Profiles of patients may be defined according to their level of pain, functional limitation, and presence of coexistent chronic conditions including frailty status. A considerable amount of data suggests that magnetic resonance imaging may also assist in delineating different phenotypes of patients with OA. Among multiple biochemical biomarkers identified, none is sufficiently validated and recognized to identify patients who should be treated. Considerable efforts are also being made to identify genetic and epigenetic factors involved in OA, but results are still limited. The many potential biomarkers that could be used as potential stratifiers are promising, but more research is needed to characterize and qualify the existing biomarkers and to identify new candidates.
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TI Regional fat depots and their relationship to bone density and microarchitecture in young oligo-amenorrheic athletes
SO BONE
LA English
DT Article
DE Visceral fat; Marrow fat; Athletes; Oligo-amenorrhea; BMD; Microarchitecture
ID visceral fat; marrow fat; femoral-neck; trabecular bone; mineral content; strength; postmenopausal; osteoporosis; adipocytes; cells
AB Context: Various fat depots have differential effects on bone. Visceral adipose tissue (VAT) is deleterious to bone, whereas subcutaneous adipose tissue (SAT) has positive effects. Also, marrow adipose tissue (MAT), a relatively newly recognized fat depot is inversely associated with bone mineral density (BMD). Bone mass in athletes depends on many factors including gonadal steroids and muscle mass. Exercise increases muscle mass and BMD, whereas, estrogen deficiency decreases BMD. Thus, the beneficial effects of weight-bearing exercise on areal and volumetric BMD (aBMD and vBMD) in regularly menstruating (eumenorrheic) athletes (EA) are attenuated in oligo-amenorrheic athletes (OA). Of note, data regarding VAT, SAT, MAT and regional muscle mass in OA compared with EA and non-athletes (C), and their impact on bone are lacking. Methods: We used (i) MRI to assess VAT and SAT at the L4 vertebra level, and cross-sectional muscle area (CSA) of the mid-thigh, (ii) 1H-MRS to assess MAT at L4, the proximal femoral metaphysis and mid-diaphysis, (iii) DXA to assess spine and hip aBMD, and (iv) HRpQCT to assess vBMD at the distal radius (non-weight-bearing bone) and tibia (weight-bearing bone) in 41 young women (20 OA, 10 EA and 11 C 18-25 years). All athletes engaged in weight-bearing sports for >= 4 h/week or ran >= 20 miles/week. Main outcome measures: VAT, SAT and MAT at L4; CSA of the mid-thigh; MAT at the proximal femoral metaphysis and mid-diaphysis; aBMD, vBMD and bone microarchitecture. Results: Groups had comparable age, menarchal age, BMI, VAT, VAT/SAT and spine BMD Z-scores. EA had higher femoral neck BMD Z-scores than OA and C. Fat mass was lowest in OA. SAT was lowest in OA ($p = 0.048$); L4 MAT was higher in OA than EA ($p = 0.03$). We found inverse associations of (i) VAT/SAT with spine BMD Z-scores ($r = -0.42$, $p = 0.01$), (ii) L4 MAT with spine and hip BMD Z-scores ($r = -0.44$, $p = 0.01$; $r = -036$, $p = 0.02$), and vBMD of the

radius and tibia (r = -0.49, p = 0.002; r = -0.41, p = 0.01), and (iii) diaphyseal and metaphyseal MAT with vBMD of the radius (r <= -0.42, p <= -0.01) and tibia (r <= -0.34, p <= -0.04). In a multivariate model including VAT/SAT, L4 MAT and thigh CSA, spine and hip BMD Z-scores were predicted inversely by L4 MAT and positively by thigh CSA, and total and cortical radius and total tibial vBMD were predicted inversely by L4 MAT. VAT/SAT did not predict radius or tibia total vBMD in this model, but inversely predicted spine BMD Z-scores. When L4 MAT was replaced with diaphyseal or metaphyseal MAT in the model, diaphyseal and metaphyseal MAT did not predict aBMD Z-scores, but diaphyseal MAT inversely predicted total vBMD of the radius and tibia. These results did not change after adding percent body fat to the model. Conclusions: VAT/SAT is an inverse predictor of lumbar spine aBMD Z-scores, while L4 MAT is an independent inverse predictor of aBMD Z-scores at the spine and hip and vBMD measures at the distal tibia and radius in athletes and non-athletes. Diaphyseal MAT independently predicts vBMD measures of the distal tibia and radius. (C) 2015 Elsevier Inc. All rights reserved.
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TI Systemic biochemical markers of joint metabolism and inflammation in relation to radiographic parameters and pain of the knee: data from CHECK, a cohort of early-osteoarthritis subjects
SO OSTEOARTHRITIS AND CARTILAGE
LA English
DT Article
DE Osteoarthritis; Inflammation; Biochemical markers; Osteophytes; Joint space width
ID oligomeric matrix protein; osteophyte formation; chondroitin sulfate; hip osteoarthritis; bone-density; ctx-ii; cartilage; biomarkers; severity; tissue
AB Objective: To investigate associations of biochemical markers of joint metabolism and inflammation with minimum joint space width (JSW) and osteophyte area (OP area) of knees showing no or doubtful radiographic osteoarthritis (OA) and to investigate whether these differed between painful and non-painful knees. Design: Serum (s-) and urinary (u-) levels of the cartilage markers uCTX-II, sCOMP, sPIIANP, and sCS846, bone markers uCTX-I, uNTX-I, sPINP, and sOC, synovial markers sPIIINP and sHA, and inflammation markers hsCRP and erythrocyte sedimentation rate (ESR) were assessed in subjects from CHECK (Cohort Hip and Cohort Knee) demonstrating Kellgren and Lawrence grade <= 1 OA on knee radiographs. Minimum JSW and OP area of these knees were quantified in detail using Knee Images Digital Analysis (KIDA). Results: uCTX-II levels showed negative associations with minimum JSW and positive associations with OP area. sCOMP and sHA levels showed positive associations with OP area, but not with minimum JSW. uCTX-I and uNTX-I levels showed negative associations with minimum JSW and OP area. Associations of biochemical marker levels with minimum JSW were similar between painful and non-painful knees, associations of uCTX-II, sCOMP, and sHA with OP area were only observed in painful knees. Conclusions: In these subjects with no or doubtful radiographic knee OA, uCTX-II might not only reflect articular cartilage degradation but also endochondral ossification in osteophytes. Furthermore, sCOMP and sHA relate to osteophytes, maybe because synovitis drives osteophyte development. High bone turnover may aggravate articular cartilage loss. Metabolic activity in osteophytes and synovial tissue, but not in articular cartilage may be related to knee pain. (C) 2014 Osteoarthritis Research Society International. Published by Elsevier Ltd. All rights reserved.
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TI Osthole Inhibits Proliferation and Induces Catabolism in Rat Chondrocytes and Cartilage Tissue
SO CELLULAR PHYSIOLOGY AND BIOCHEMISTRY
LA English
DT Article
DE Osthole; Chondrocytes; Proliferation; Catabolism; Cartilage tissue
ID human articular chondrocytes; human osteoarthritic cartilage; in-vitro; gene-expression; matrix metalloproteinases; activation; cells; differentiation; degradation; pathway
AB Background/Aims: Cartilage destruction is thought to be the major mediator of

osteoarthritis. Recent studies suggest that inhibition of subchrondral bone loss by anti-osteoporosis (OP) drug can protect cartilige erosion. Osthole, as a promising agent for treating osteoporosis, may show potential in treating osteoarthritis. The purpose of this study was to investigate whether Osthole affects the proliferation and catabolism of rat chondrocytes, and the degeneration of cartilage explants. Methods: Rat chondrocytes were treated with Osthole (0 mu M, 6.25 mu M, 12.5 mu M, and 25 mu M) with or without IL1-beta (10ng/ml) for 24 hours. The expression levels of type II collagen and MMP13 were detected by western Blot. Marker genes for chondrocytes (A-can and Sox9), matrix metalloproteinases (MMPs), aggrecanases (ADAMTS5) and genes implicated in extracellular matrix catabolism were evaluated by qPCR. Cell proliferation was assessed by measuring proliferating cell nuclear antigen (PCNA) expression and fluorescence activated cell sorter. Wnt7b/beta-catenin signaling was also investigated. Cartilage explants from two-week old SD rats were cultured with IL-1 beta, Osthole and Osthole plus IL-1 beta for four days and glycosaminoglycan (GAG) synthesis was assessed with toluidine blue staining and Safranine O/Fast Green FCF staining, collagen type II expression was detected by immunofluorescence. Results: Osthole reduced expression of chondrocyte markers and increased expression of MMP13, ADAMTS5 and MMP9 in a dose-dependent manner. Catabolic gene expression levels were further improved by Osthole plus IL-1 beta. Osthole inhibited chondrocyte proliferation. GAG synthesis and type II collagen were decreased in both the IL-1 beta groups and the Osthole groups, and significantly reduced by Osthole plus IL-1 beta. Conclusions: Our data suggested that Osthole increases the catabolism of rat chondrocytes and cartilage explants, this effect might be mediated through inhibiting Wnt7b/beta-catenin pathway. Copyright (C) 2015 S. Karger AG, Basel
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NR 49
TC 22
Z9 23
U1 0
U2 28
PU KARGER
PI BASEL
PA ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND
SN 1015-8987
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PT J
AU Lara-Castillo, N
Johnson, ML
AF Lara-Castillo, N.
Johnson, M. L.
TI LRP receptor family member associated bone disease

SO REVIEWS IN ENDOCRINE & METABOLIC DISORDERS
LA English
DT Review
DE LRP; Wnt/beta-catenin; Bone related disease
ID osteoporosis-pseudoglioma syndrome; sclerostin antibody treatment; wnt signaling pathway; brtl/+ mouse model; osteoarthritis-susceptibility; osteogenesis imperfecta; monoclonal-antibody; mineral density; chromosome 11q; gene
AB A dozen years ago the identification of causal mutations in the low-density lipoprotein receptor-related protein 5 (LRP5) gene involved in two rare bone disorders propelled research in the bone field in totally new directions. Since then, there have been an explosion in the number of reports that highlight the role of the Wnt/beta-catenin pathway in the regulation of bone homeostasis. In this review we discuss some of the most recent reports (in the past 2 years) highlighting the involvement of the members of the LRP family (LRP5, LRP6, LRP4, and more recently LRP8) in the maintenance of bone and their implications in bone diseases. These reports include records of new single nucleotides polymorphisms (SNPs) and haplotypes that suggest variants in these genes can contribute to subtle variation in bone traits to mutations that give rise to extreme bone phenotypes. All of these serve to further support and reinforce the importance of this tightly regulated pathway in bone. Furthermore, we discuss provocative reports suggesting novel approaches through inhibitors of this pathway to treat rarer diseases such as Osteoporosis-Pseudoglioma Syndrome (OPPG), Osteogenesis Imperfecta (OI), and Sclerosteosis/Van Buchem disease. It is hoped that by understanding the role of each component of the pathway and their involvement in bone diseases that this knowledge will allow us to develop new, more effective therapeutic approaches for more common diseases such as post-menopausal osteoporosis, osteoarthritis, and rheumatoid arthritis as well as these rarer bone diseases.
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PT J
AU Molfetta, L
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TI ARTHRITIS AND OSTEOPOROSIS: PATHOGENETIC CORRELATIONS IN FUNCTION OF ARTHROPLASTY
SO JOURNAL OF BIOLOGICAL REGULATORS AND HOMEOSTATIC AGENTS
LA English
DT Article
DE arthritis; inflammation; subchondral bone; bone edema; clodronate
ID bone-mineral density; hip-arthroplasty; synovial-fluid; osteoarthritis; cartilage; knee; implantation; serum; dexa; stem
AB Osteoarthritis is being increasingly characterised as an inflammatory incoming and recurrent disease, with the specific symptoms of inflammation at every stage of the disease. With regard to the pathogenesis over time, the degenerative and inflammatory components are combined and lead to osteocartilaginous

degeneration. Such deterioration involves other joint tissues as well as the subchondral bone tissue, the suffering of which is the key event of the beginning and progression of OA; its involvement concerns the same pathogenetic mechanisms and the same chemical mediators of the chondropathy. The increase in joint inflammatory events leads to suspect the onset or the worsening of the osteometabolic disorder, which is documented by the MR as "bone edema" or as algodystrophic syndrome. The pain appears both while moving and resting and with signs of inflammation. The treatment of OA requires drugs, such as paracetamol, selective and nonselective NSAIDs and opiates, for pain control. Treatment should ensure the pharmacological control of the pain related to the osteometabolic juxta-articular alteration, through bisphosphonates, favouring those which can control bone loss, inflammation and pain.
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NR 31
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Z9 2
U1 0
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PI SILVA MARINA (TE)
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WC Endocrinology & Metabolism; Immunology; Medicine, Research & Experimental; Physiology
SC Endocrinology & Metabolism; Immunology; Research & Experimental Medicine; Physiology
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AU Muraki, S
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AF Muraki, Shigeyuki
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TI Quadriceps muscle strength, radiographic knee osteoarthritis and knee pain: the ROAD study
SO BMC MUSCULOSKELETAL DISORDERS
LA English
DT Article
DE Cohort study; Epidemiology; Osteoarthritis; Pain; Muscle
ID bioelectrical-impedance analysis; dwelling elderly subjects; grip strength; skeletal-muscle; association; mass; health; cohort; japan; disability
AB Background: The objective of this study was to clarify the association of quadriceps muscle strength with knee pain using a large-scale, population-based cohort of the Research on Osteoarthritis/osteoporosis Against Disability (ROAD) study. Methods: From the 2566 subjects at the third visit of the ROAD study, the present study analyzed 2152 subjects who completed radiographic examinations and measurements of muscle strength and mass (690 men and 1462 women; mean age, 71.6 +/- 12.2 years). Knee pain was assessed by an experienced orthopedist. Knee osteoarthritis (OA) was defined according to Kellgren-Lawrence (KL) grade. Quadriceps muscle strength and muscle mass at the lower limbs were measured by the Quadriceps Training Machine (QTM-05F, Alcare Co., Ltd. Tokyo, Japan) and the Body Composition Analyzer MC-190 (Tanita Corp., Tokyo, Japan), respectively.

Results: Quadriceps muscle strength and weight bearing index (WBI: quadriceps muscle strength by weight) were significantly associated with knee pain after adjustment for age and body mass index, whereas grip strength and muscle mass at the lower limbs were not. The significant association of quadriceps muscle strength with knee pain was independent of radiographic knee OA. Conclusion: The present cross-sectional study showed an independent association of quadriceps muscle strength with knee pain.
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NR 32
TC 82
Z9 95
U1 0
U2 11
PU BIOMED CENTRAL LTD
PI LONDON
PA 236 GRAYS INN RD, FLOOR 6, LONDON WC1X 8HL, ENGLAND

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WC Orthopedics; Rheumatology
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PT J
AU Rabenda, V
Bruyère, O
Cooper, C
Rizzoli, R
Buckinx, F
Quabron, A
Reginster, JY
AF Rabenda, Veronique
Bruyere, Olivier
Cooper, Cyrus
Rizzoli, Rene
Buckinx, Fanny
Quabron, Adrien
Reginster, Jean-Yves
TI Publication outcomes of the abstracts presented at the 2011 European Congress on Osteoporosis, Osteoarthritis and Musculo-Skeletal Diseases (ECCEO-IOF11)
SO ARCHIVES OF OSTEOPOROSIS
LA English
DT Article
DE Publication outcomes; ECCEO-IOF Meeting; Oral communication; Poster; Presentation format
ID society; presentations; academy; rates
AB The publication outcomes of the abstracts presented during the ECCEO-IOF

2011 reflect a high research productivity, support the robustness of the selection process conducted by the Scientific Advisory Committee and suggest that IOF-ESCEO WCO is successful in its mission to promote and disseminate research.
Background and Objective The European (now World) Congress on Osteoporosis, Osteoarthritis and Musculo-Skeletal Diseases (IOF-ESCEO WCO, formerly ECCEO-IOF) is the largest worldwide event fully dedicated to the clinical, epidemiological, translational and economic aspects of bone, joint and muscle diseases. The role of the Scientific Advisory Committee is to select abstracts for oral communication or poster presentation based on a short summary of the research. The aim of the present survey was to determine the publication rate in international peer reviewed journals of abstracts accepted at the IOF-ESCEO WCO 2011 Meeting (formerly ECCEO-IOF11), the relationship, if any, between the presentation format of the abstract and its subsequent full publication and the impact factor of the journal in which research was published. Results Of 619 abstracts accepted at the 2011 ECCEO-IOF11 annual meeting, 45 were accepted for oral communication and 574 accepted for poster presentation. In the subsequent 3 years (2011-2014), 191 abstracts were published as a full-length manuscript (30.9 %). The publication rate was significantly higher for oral communications (75.6 %) than for poster presentations (27.4 %; $p<0.0001$). Publications derived from oral communications were published in journals with a higher impact factor (8.3 +/- 10.1) than those arising from poster presentations (4.0 +/- 2.3; $p<0.0001$), but there was no difference in the time to publication (OC 16.3 [IQR 8.4-23.3] months vs PP 11.3 [IQR 5.3-21.4]; $p=0.14$). Conclusion These results indicate a high research productivity and an appropriate selection of oral communication by the Scientific Advisory Committee of ESCEO-IOF.
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NR 14
TC 7
Z9 9
U1 0
U2 1
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PA 236 GRAYS INN RD, 6TH FLOOR, LONDON WC1X 8HL, ENGLAND
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WC Endocrinology & Metabolism; Orthopedics
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PT J
AU Di Gregorio, S
Del Rio, L
Rodriguez-Tolra, J
Bonel, E
García, M
Winzenrieth, R
AF Di Gregorio, S.
Del Rio, L.
Rodriguez-Tolra, J.
Bonel, E.
Garcia, M.
Winzenrieth, R.
TI Comparison between different bone treatments on areal bone mineral density (aBMD) and bone microarchitectural texture as assessed by the trabecular bone score (TBS)
SO BONE
LA English
DT Article
DE Osteoporosis treatments; Bone mineral density; Bone microarchitectural texture; TBS (trabecular bone score)
ID vertebral fracture risk; postmenopausal women; lumbar spine; prevent fractures; osteoporosis; men; osteoarthritis; teriparatide; risedronate; denosumab
AB Purpose: The objective of the study was to assess longitudinal effects of different osteoporosis treatments on TBS and aBMD at lumbar spine. Method: We analyzed 390 patients (men: 72; women: 318; age >40 years; mean follow-up of 20 months and BMI <37 kg/m(2)). We stratified the cohort by treatments: Naive of treatment (Naive, n = 67), Calcium and Vitamin D (CaVitD, n = 87), Testosterone (Te, n = 36), Alendronate (AL, n = 88), Risedronate (Ri, n = 39), Denosumab (Dmb, n = 43) and Teriparatide (PTH, n = 30). The follow-up changes from baseline were normalized at 24 months. Results: After 24 months, Naive group TBS decreased by 3.1% ($p < 0.05$) whereas a non-significant increase was observed for spine aBMD (Delta = + 0.5%). Compared to the Naive group, significant improvement ($p < 0.05$) was observed in both TBS and aBMD for Te, AL, Ri, Dmb and PTH groups and in the CaVitD group for TBS. At the end of the follow-up, significant improvement have been observed for aBMD in Te (+ 4.4%), AL (+4.1%), Ri (+4.8), D (+8.8%) and PTH (+8.8%) groups. Significant improvement was observed only in the AL (+1.4%), Dmb (+2.8%) and PTH (+3.6%) groups for TBS. Conclusion: As expected, TBS of

Naive subjects decreased with age. As expected a TBS preservation has been observed under AL and Ri.Te and CaVitD effects on TBS were evaluated for the first time: a similar preservation effect has been observed. A significant TBS increase was observed under Denosumab and PTH.TBS could be a useful tool to monitor treatment effects. (C) 2015 Elsevier Inc. All rights reserved.
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10.1016/j.jocd.2012.05.001
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TC 67
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PU ELSEVIER SCIENCE INC
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JI Bone
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PT J
AU Cui, Z
Xu, CP
Li, X
Song, JQ
Yu, B
AF Cui, Zhuang
Xu, Changpeng
Li, Xue
Song, Jinqi
Yu, Bin
TI Treatment with recombinant lubricin attenuates osteoarthritis by positive

feedback loop between articular cartilage and subchondral bone in ovariectomized rats
SO BONE
LA English
DT Article
DE Osteoarthritis; Osteoporosis; Lubricin; Subchondral bone; Cartilage; Ovariectomy
ID superficial zone protein; mesenchymal stem-cells; model; expression; immunolocalization; proteoglycan; degeneration; degradation; prevention; severity
AB Osteoarthritis (OA) is a most commonly multifactorial degenerative joint disease along with the aging population, particularly in postmenopausal women. During the onset of OA, articular cartilage and subchondral bone act in concert as a functional unit. This present study is to investigate the effects of early or late treatment with recombinant lubricin on the onset of osteoarthritis (OA) in ovariectomized (OVX) rats. We found that both early and late recombinant lubricin treatments attenuated the onset of OA by positive feedback loop between articular cartilage and subchondral bone, although late treatment contributed to a lesser effect compared with early treatment. Specifically, treatment with recombinant lubricin protected articular cartilage from degeneration, demonstrated by lower proteoglycan loss, lower OARSI scores, less calcification cartilage zone and reduced immunostaining for collagen X (Col X) and matrix metalloproteinase (MMP-13) but increased the expression of lubricin, in comparison with vehicle-treated OVX rat group. Further, chondroprotective effects of lubricin normalized bone remodeling in subchondral bone underneath. It's suggested that treatment with recombinant lubricin inhibited the elevation of TRAP and Osterix positive cells in OVX rats and led to the normalization of subchondral bone microarchitectures with the suppression of subsidence of bone volume ratio plum and trabecular thickness (Tb.Th) and the increase of trabecular separation (Tb.Sp) in vehicle-treated OVX rats. What's more, the normalization of subchondral bone in turn attenuated the articular cartilage erosion by inhibiting vascular invasion from subchondral bone to calcified cartilage zone, exemplified by inhibiting the elevation of CD31 positive cells in calcified cartilage and angiography in subchondral bone. Together, these results shed light that both early and late recombinant lubricin treatments attenuate the onset of OA by balancing the interplay between articular cartilage and subchondral bone in OVX rats, while also providing a further rationale for its therapeutic targeting to postmenopausal OA and suggesting that treatment timing is a pivotal factor for better effect acquisition. (c) 2015 Elsevier Inc. All rights reserved.
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FU National Natural Science Foundation of China [81272052]
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NR 42
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U1 0
U2 24
PU ELSEVIER SCIENCE INC
PI NEW YORK
PA STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA
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J9 BONE
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PT J
AU Roberts, SB
Wootton, E

De Ferrari, L
Albagha, OM
Salter, DM
AF Roberts, S. B.
Wootton, E.
De Ferrari, L.
Albagha, O. M.
Salter, D. M.
TI Epigenetics of osteoarticular diseases: recent developments
SO RHEUMATOLOGY INTERNATIONAL
LA English
DT Review
DE Epigenetics; Methylation; Osteoarthritis; Rheumatoid arthritis; Osteoporosis; Sarcoma
ID wide dna methylation; systemic-lupus-erythematosus; human osteoarthritic chondrocytes; microrna expression profiles; blood mononuclear-cells; nitric-oxide synthase; rheumatoid-arthritis; histone deacetylase; cpg sites; down-regulation
AB A variety of osteoarticular conditions possess an underlying genetic aetiology. Large-scale genome-wide association studies have identified several genetic loci associated with osteoarticular conditions, but were unable to fully account for their estimated heritability. Epigenetic modifications including DNA methylation, histone modification, nucleosome positioning, and microRNA expression may help account for this incomplete heritability. This articles reviews insights from epigenetic studies in osteoarticular diseases, focusing on osteoarthritis, but also examines recent advances in rheumatoid arthritis, osteoporosis, systemic lupus erythematosus (SLE), ankylosing spondylitis, and sarcoma. Genome-wide methylation studies are permitting identification of novel candidate genes and molecular pathways, and the pathogenic mechanisms with altered methylation status are beginning to be elucidated. These findings are gradually translating into improved understanding of disease pathogenesis and clinical applications. Functional studies in osteoarthritis, rheumatoid arthritis, and SLE are now identifying downstream molecular alterations that may confer disease susceptibility. Epigenetic markers are being validated as prognostic and therapeutic disease biomarkers in sarcoma, and clinical trials of hypomethylating agents as treatments for sarcoma are being conducted. In concert with advances in throughput and cost-efficiency of available technologies, future epigenetic research will enable greater characterisation and treatment for both common and rare osteoarticular diseases.
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Doschak, Michael R.
TI Evaluation of Bone Targeting Salmon Calcitonin Analogues in Rats Developing Osteoporosis and Adjuvant Arthritis
SO CURRENT DRUG DELIVERY
LA English
DT Article
DE Bisphosphonate; bone mineral density (BMD); bone targeting; bone volume; adjuvant arthritis; calcitonin; polyethylene glycol (PEG); micro-CT; osteoporosis
ID delivery-system; osteoclast; osteoarthritis; pathogenesis; pegylation; behavior

AB Synthetic analogues of the peptide hormone calcitonin have been used in medicine as biologic drug therapies for decades, to treat pathological conditions of excessive bone turnover, such as osteoporosis, where more bones are removed than replaced during bone remodeling. Osteoporosis and other chronic skeletal diseases, including inflammatory arthritis, exact a substantial and growing toll on aging populations worldwide however they respond poor to synthetic biologic drug therapy, due in part to the rapid half-life of elimination, which for calcitonin is 43 minutes. To address those shortcomings, we have developed and synthesized bone-targeting variants of calcitonin as a targeted drug delivery strategy, by conjugation to bisphosphonate drug bone-seeking functional groups in highly specific reaction conditions. To evaluate their in vivo efficacy, bisphosphonate-mediated bone targeting with PEGylated (polyethylene glycol conjugated) and non-PEGylated salmon calcitonin analogues were synthesized and dose escalation was performed in female rats developing Osteoporosis. The bone-targeting calcitonin analogues were also tested in a separate cohort of male rats developing adjuvant-induced arthritis. Ovariectomized female rats developing Osteoporosis were administered daily sub-cutaneous injection of analogues equivalent to 5, 10 and 20 IU/kg of calcitonin for 3 months. Adjuvant arthritis was developed in male rats by administering Mycobacterium butyricum through tail base injection. Daily sub-cutaneous injection of analogues equivalent to 20 IU/kg of calcitonin was administered and the rats were measured for visible signs of inflammation to a 21 day endpoint. In both studies, the effect of drug intervention upon bone volume and bone mineral density (BMD) was assessed by measuring the trabecular bone volume percentage and BMD at the proximal tibial metaphysis using in vivo micro-computed tomography. With dose escalation studies, only bone targeting analogue dosed groups showed a trend towards increased BMD and bone volume at 4, 8 and 12 weeks. Significant preservation of bone volume and BMD as evidenced by nonsignificant ($P>0.05$) loss of bone volume and BMD at the end of 3 month study endpoint was seen in animals dosed with 20 IU/kg of calcitonin compounds. Similarly, in case of adjuvant-induced arthritis rats, there was a significant increase ($P<0.05$) in bone volume and BMD in calcitonin-bisphosphonate and calcitonin-PEG-bisphosphonate treated groups at 21 days compared to the baseline values. Improved efficacy in terms of preserving bone volume and BMD in Osteoporosis, and in rats developing adjuvant-induced arthritis, by these analogues suggests their potential as new drug candidates for further evaluation to determine their usefulness in bone diseases characterized by excessive bone resorption.
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Waddell, JP
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TI Incidence and predisposing factors of periprosthetic proximal femoral fractures: a literature review
SO INTERNATIONAL ORTHOPAEDICS
LA English
DT Review
DE Periprosthetic proximal femoral fracture; Hip arthroplasty; Risk factors; Incidence; Aetiology; Epidemiology
ID total hip-arthroplasty; revision total hip; risk-factors; femur fracture; replacement; management; epidemiology; knee; age; hemiarthroplasty
AB Purpose The purpose of this review article was to investigate the incidence and predisposing factors for periprosthetic proximal femoral fractures (PFF) following total hip arthroplasty. Methods We performed a comprehensive search of the medical literature in MEDLINE and EMBASE databases to review articles related to PFF, their incidence and risk factors. Results and Conclusions The incidence of PPF after primary THA was, in general, lower than after revision THA both for intra- and postoperative PFF. The rate of intraoperative PFF ranged from 0.1 % to 27.8 % and of postoperative PFF from 0.07 % to 18 %. Predisposing factors for intraoperative PFF are osteoporosis, rheumatoid arthritis, femoral preparation and surgical technique used to insert the rasp or femoral component, the use of press-fit cementless stems, and revision THA. In case of postoperative PFF, the following seem to be significant risk factors: advanced age, female gender, post-traumatic osteoarthritis, osteoporosis and rheumatoid arthritis, proximal femoral deformities, previous surgery of the affected hip, implant type (especially cementless stems and press-fit implantation), technical errors such as cortical perforation, cortical stress risers, low-energy trauma, osteolysis, loosening and revision THA.
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NR 70
TC 150
Z9 193
U1 0
U2 18
PU SPRINGER
PI NEW YORK
PA 233 SPRING ST, NEW YORK, NY 10013 USA
SN 0341-2695
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J9 INT ORTHOP
JI Int. Orthop.
PD SEP 15
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BP 1673
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WC Orthopedics
SC Orthopedics
GA CQ2MY
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PT J
AU Theologis, AA
Burch, S
AF Theologis, Alexander A.
Burch, Shane
TI Prevention of Acute Proximal Junctional Fractures After Long Thoracolumbar Posterior Fusions for Adult Spinal Deformity Using 2-level Cement Augmentation at the Upper Instrumented Vertebra and the Vertebra 1 Level Proximal to the Upper Instrumented Vertebra
SO SPINE
LA English
DT Article
DE adult spinal deformity; vertebroplasty; kyphoplasty; thoracolumbar fusion;

proximal junctional failure; fracture; revision surgery
ID body compression fractures; pedicle screw constructs; percutaneous vertebroplasty; risk-factors; lumbar fusion; adjacent; kyphoplasty; osteoporosis; segments; kyphosis
AB Study Design. Retrospective col tort analysis. Objective. To evaluate efficacy of proximal junction fracture (PIE) prevention in adult spinal deformity (ASD) using 2-level cement augmentation at the construct's proximal extent. Summary of Background Data. Prevention of PJF after thoracolumbar fusions is critical because they may result in neurological injury. Cement augmentation of constructs' proximal vertebrae is postulated to decrease PJF. Methods. Patients with ASD after PSI front pelvis to thoracolumbar bar junction with 6 months or more follow-up were retrospectively studied. Demographics, deformity radiographical parameters, and health-related quality of life outcomes (PIRQoL) scores were con pared with patients with no cement, 2-level cementaugmentation at upper instrumented vertebra (UIV) and vertebra 1 level proximal to UIV (UIV +1), and cement at another location ("Other"). Revision surgery for PJF was primary outcome. Univariable and multivariable logistic regression analyses were used for statistical analysis. Results. 51 patients [female-29; male-22; average age: 65 yr (33-82)] met inclusion criteria (2-level-19; no-cement-23; "Other" -9). Average follow-up (mo) was longer for no-cement (25 +/- 15) and "Other" (20 +/- 16) than 2-level (15 +/- 8) (P = 0.06). All perioperative radiographical parameters were similar, save first postoperative thoracic kyphosis and lumbopelvic mismatch. Compared with 2-level cement, non-2-level cement had significantly more revisions for PJF (0% vs. 19%; P = -0.02). After UIV adjustment, risks of PJF revision surgery were 13.1 times higher for "Other" (95% CI: 0.5-346.5, P -0.12) and 9.2 times higher (95% CI: OA 239.1, P = 0.18) for no-cement. All HRQoL. scores improved in 2-level cement; only back/leg pain significantly improved in non-2-level cement. Postoperative Oswestry Disability Index was significantly less in 2-level cement. Conclusion. The use of 2-level cement augmentation (UIV and UIV +1) in PSF from pelvis to thoracolumbar junction for ASD is associated with a decreased rate of acute proximal junctional fractures and associated revision surgeries. As only associations can be demonstrated from this study's design, prospective investigations with larger, consecutive cohorts should he performed to explore causal relationships.
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NR 32
TC 57
Z9 68
U1 0
U2 5
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
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J9 SPINE

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EP 1526
DI 10.1097/BRS.0000000000001043
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WC Clinical Neurology; Orthopedics
SC Neurosciences & Neurology; Orthopedics
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PT J
AU Lee, KM
Chung, CY
Sung, KH
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Won, SH
Kim, TG
Choi, Y
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AF Lee, Kyoung Min
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TI Risk Factors for Osteoarthritis and Contributing Factors to Current Arthritic Pain in South Korean Older Adults
SO YONSEI MEDICAL JOURNAL
LA English
DT Article
DE Osteoarthritis; joint related pain; risk factors; older adults

ID body-mass index; radiographic knee osteoarthritis; c-reactive protein; physical-activity; hip osteoarthritis; hand osteoarthritis; prospective cohort; follow-up; progression; obesity
AB Purpose: Although previous studies have focused on risk factors for osteoarthritis, there is some debate on this issue. Furthermore, associated factors with arthritic symptom (arthralgia) have not been sufficiently investigated, despite its clinical importance in the management of osteoarthritis. This study was performed to examine the risk factors for osteoarthritis and the contributing factors to current arthritic pain in older adults. Materials and Methods: The Fourth Korean National Health and Nutrition Examination Surveys was conducted in 2009. Therein, 720 males and 1008 females aged 65 years and older were included. Comprehensive data on habitual, socioeconomic, medical, nutritional, and psychological factors were collected along with the presence of osteoarthritis and arthritic pain. After univariate analysis, binary logistic regression analysis was performed to identify risk factors for osteoarthritis and contributing factors to current arthritic pain. Results: Age ($p=0.005$), female gender ($p<0.001$), higher body mass index (BMI) ($p<0.001$), and osteoporosis ($p<0.001$) were significant risk factors for osteoarthritis, while higher education level ($p=0.025$) was a protective factor for osteoarthritis. Higher BMI ($p=0.047$), lack of weekly moderate intensity activity ($p<0.001$), and unfavorable subjective health status ($p<0.001$) were significant factors contributing to current arthritic pain among subjects with osteoarthritis. Both osteoarthritis and current arthritic pain adversely affected health related quality of life. Conclusion: Higher BMI, lack of weekly moderate intensity activity, and unfavorable subjective health status were significant factors contributing to current arthritic pain. More attention needs to be paid to psychiatric effects on osteoarthritis and joint related pain.
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TC 24
Z9 31
U1 0
U2 12
PU YONSEI UNIV COLL MEDICINE
PI SEOUL
PA 50-1 YONSEI-RO, SEODAEMUN-GU, SEOUL 120-752, SOUTH KOREA
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EI 1976-2437
J9 YONSEI MED J
JI Yonsei Med. J.
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WC Medicine, General & Internal
SC General & Internal Medicine
GA AY7NX
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ER

PT J
AU Chiereghin, A
Martinez, JE
AF Chiereghin, Adriano
Martinez, Jose Eduardo
TI Analysis of conditions for the diagnosis of rheumatic diseases in primary health care in the city of Sorocaba-SP
SO REVISTA BRASILEIRA DE REUMATOLOGIA
LA English
DT Article
DE Rheumatic diseases; Primary health care; Continuing medical education
ID general-practice; competence
AB Objectives: The study had as main goal to define the profile of the attending professional working at the primary healthcare sector in the city of Sorocaba, and to analyze the environment in which this professional is inserted, trying to identify if there are conditions for the care of low-complexity rheumatic diseases and possible reasons that would lead to a high degree of referral to specialists. Methods: A quantitative study was performed in which physicians of primary health care were invited to answer a questionnaire that addressed personal aspects, besides the technical aspects of four rheumatic diseases: osteoarthritis, gout, fibromyalgia and osteoporosis, which served as the basis for evaluating the care for low-complexity diseases in UBSs. Results: It was observed that the professional is part integral of an organizational system that hinders his/her performance; moreover, certain personal difficulty techniques were realized. Together, these conditions turned out to be the factors that determine a quality of care that falls short of that expected. Conclusion: There must be a review of how medical education is offered, in order to seek a more qualified training, focused on the basic needs of the health system, as well as a restructuring of the entire health system in terms of its organization and management, in order to attain a suitable condition for the development of a good medical practice, and thus, for providing a good service to the community. (C) 2014 Elsevier Editors Ltda. All rights reserved.
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Weiner SJ, 2009, J GEN INTERN MED, V24, P626, DOI 10.1007/s11606-009-0902-3
NR 17
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Z9 0
U1 0
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PU ELSEVIER SCIENCE INC
PI NEW YORK
PA STE 800, 230 PARK AVE, NEW YORK, NY 10169 USA
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J9 REV BRAS REUMATOL
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PT J
AU Yamamoto, K
Kato, N
Isogai, Y
Kuroda, T
Ishida, T
Yamatodani, A
AF Yamamoto, Kouichi
Kato, Naoto
Isogai, Yukihiro
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Ishida, Takayuki
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TI Induction and antagonism of pica induced by teriparatide in rats
SO EUROPEAN JOURNAL OF PHARMACOLOGY
LA English
DT Article
DE Anti-emetic drugs; Nausea; Ovariectomized rats; Pica; Teriparatide
ID parathyroid-hormone 1-34; agents affecting emesis; bone turnover markers; postmenopausal women; mineral density; substance-p; osteoporosis; fracture; nausea; granisetron
AB Intermittent subcutaneous injection of teriparatide, an active fragment of human parathyroid hormone, is clinically used for the treatment of osteoporosis. Patients suffer from nausea, which is one of the side effects teriparatide induces; however, the etiology of teriparatide-induced nausea remains unknown. We have reported pica, kaolin ingestion behavior, can be used as an assessment of nausea-related response in rats. In this study, we investigated the characteristics of teriparatide-induced pica and the abilities of anti-emetic drugs to inhibit teriparatide-induced pica. Male and female adolescent (4-week-old), young (8-week-old), and adult (30-week-old) naive rats, and ovariectomized (OVX: 17-week-old) and sham-operated (17-week-old) rats subcutaneously received teriparatide (OA mg/kg, n=4), and their kaolin and food intakes were monitored for 24 h after the injection. Among the tested rats, we found that OVX rats, rather than male, female, and sham-operated rats, showed marked teriparatide-induced pica (0 mg/kg: 0.17 +/- 0.07 g, 0.4 mg/kg: 6.18 +/- 0.91 g). Teriparatide-induced pica in OVX rats was inhibited by intraperitoneal pretreatment with serotonin 5-HT3 (granisetron 0.5 mg/kg), dopamine D-2 (prochlorperazine 0.5 mg/kg), neurokinin NK1 (fosaprepitant 1 mg/kg), and histamine H-1 (diphenhydramine 10 mg/kg) receptor antagonists to 70%, 11%, 19%, and 59% of that in vehicle-treated control, respectively. These results suggest that teriparatide-induced pica in OVX rats has the potential to reflect teriparatide-induced nausea; 5-HT3, D-2, NK1, and H-1 receptor activation is involved in the development of this behavior; antagonists of

these receptors have the potential to be medical candidates used as treatments for teriparatide-induced nausea in human patients. (C) 2015 Published by Elsevier B.V.
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NR 40
TC 7
Z9 7
U1 0
U2 9
PU ELSEVIER SCIENCE BV
PI AMSTERDAM
PA PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
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J9 EUR J PHARMACOL
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WC Pharmacology & Pharmacy
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PT J
AU Buller, LT
Lawrie, CM
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Lawrie, Charles M.
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TI A Growing Problem Acetabular Fractures in the Elderly and the Combined Hip Procedure
SO ORTHOPEDIC CLINICS OF NORTH AMERICA
LA English
DT Article
DE Acetabular fracture; Elderly; Combined hip procedure; Total hip arthroplasty
ID reduction internal-fixation; operative treatment; pelvic fractures; arthroplasty; trauma; older; outcm; epidemiology; management; age
AB Acetabular fractures in the elderly are most frequently the result of low-energy trauma and present unique management challenges to orthopedic surgeons. Evaluation and treatment should be performed in a multidisciplinary fashion with early involvement of internal medicine subspecialists and geriatricians. Distinct fracture patterns and pre-existing osteoarthritis and osteoporosis necessitate careful preoperative planning. The role of total hip arthroplasty should also be considered when surgical treatment is indicated. The outcomes of acetabular fractures in the elderly have improved, but complications remain higher and results less satisfactory than in younger individuals. The lack of randomized controlled trials has limited the ability to establish an evidence-based treatment algorithm.
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NR 79
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Z9 31
U1 0
U2 9
PU W B SAUNDERS CO-ELSEVIER INC
PI PHILADELPHIA
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PT J
AU Lin, C
Caron, J
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AF Lin, Carol
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TI Functional Outcomes After Total Hip Arthroplasty for the Acute Management of Acetabular Fractures: 1-to 14-Year Follow-up
SO JOURNAL OF ORTHOPAEDIC TRAUMA
LA English
DT Article
DE acetabular fracture; osteoporosis; total hip arthroplasty; geriatric trauma; trauma
ID reduction internal-fixation; elderly-patients; singh index; replacement; classification; osteoporosis; failure; radiography; migration; component
AB Objective: This study reports the complications and functional outcomes in patients treated acutely with combined open reduction internal fixation (ORIF) and immediate total hip arthroplasty (THA) for displaced comminuted acetabular fractures. Design: Single surgeon retrospective case series. Setting: Level 1 trauma center. Patients: Thirty-three consecutive patients (18 women; mean age, 66 years) from 1996 to 2011 with an average follow-up of 5.6 years (range, 1-14.3 years) were included in this study. Intervention: ORIF and immediate THA. Main Outcome Measurements: Oxford Hip Score and reoperation. Methods: All patients had at least 1 year of telephone or clinical follow-up. Postoperative complications, reoperations, and available radiographs were reviewed. Results: Six patients died of causes unrelated to their injuries or surgery; before death, these patients had

well-functioning hips. There was a 15% complication rate. At last follow-up, 94% of hips remained in situ and were functioning well. The average Oxford Hip Score at final follow-up was 17 (range, 12-32), with 93% of patients reporting good to excellent function. There was no statistical association between fracture type, age, or fixation type and outcome. Conclusions: Acute ORIF and immediate THA for selected acetabular fractures is a safe viable treatment option with good to excellent functional outcomes and may reduce the need for 2 separate operations in many patients. Functional outcomes are equivalent to those after primary THA for osteoarthritis. This study does not address at which age acute THA is a cost-effective treatment option.
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NR 48
TC 53
Z9 67
U1 0
U2 4
PU LIPPINCOTT WILLIAMS & WILKINS
PI PHILADELPHIA
PA TWO COMMERCE SQ, 2001 MARKET ST, PHILADELPHIA, PA 19103 USA
SN 0890-5339
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J9 J ORTHOP TRAUMA
JI J. Orthop. Trauma
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WC Orthopedics; Sport Sciences
SC Orthopedics; Sport Sciences
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PT J
AU Saral, I
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Çakar, E
AF Saral, Ilknur

Durmus, Oguz
Agirman, Mehmet
Ormeci, Tugrul
Cakar, Engin
TI AN UNEXPECTED CASE OF ATYPICAL FEMUR FRACTURE MISDIAGNOSED AS RADICULOPATHY AND HIP OSTEOARTHRITIS: A PATIENT TREATED WITH BISPHOSPHONATE
SO TURKISH JOURNAL OF GERIATRICS-TURK GERIATRI DERGISI
LA English
DT Article
DE Alendronate; Bisphosphonates; Femoral Fractures
AB Bisphosphonates are the most commonly used drugs in the treatment of osteoporosis. Several randomized controlled studies have proved their effectiveness in the treatment of postmenopausal osteoporosis and today BPs are considered a first-line therapy for osteoporosis. Bisphosphonates inhibit osteoclastic activity, decrease bone turnover and increase bone mineral density. Although there is strong evidence that bisphosphonates prevent osteoporotic fractures, in recent years, there have been several reports that show the increasing risk of atypical femoral fractures that is related to prolonged usage (5 years or longer) of bisphosphonates. This may be related to prolonged suppression of bone turnover. By suppressing the bone turnover they impair the ability of bone to repair the microdamages and leads the accumulation of microcracs. In this case, we report 67-year-old female who presented with atypical femoral fracture.
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NR 5
TC 0
Z9 1
U1 0
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PU GUNES KITABEVI LTD STI
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PA M RAUF INAN SOK NO 3, ANKARA, SIHHIYE 06410, TURKEY

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