

Table S1. Derivation of age cutoff and SCD prevalence

Outcome variable: med_probs_thinking (Problems of thinking), n=33537

Covariate	Odds Ratio	Std. Err.	P> z	95% Conf. Interval
Age grp				
<45*	1			
45-<55	0.822	0.224	0.471	(0.482 to 1.401)
55-<65	0.989	0.233	0.964	(0.623 to 1.571)
65-<75	0.784	0.190	0.315	(0.489 to 1.260)
>=75	1.797	0.420	0.012	(1.136 to 2.841)
CDAI grp				
remission*	1			
LDA	3.068	0.691	<0.001	(1.972 to 4.771)
Moderate	5.786	1.265	<0.001	(3.769 to 8.882)
Severe	5.771	1.315	<0.001	(3.692 to 9.020)
Age grp & CADI grp interaction				
45-<55 & LDA	1.158	0.351	0.628	(0.640 to 2.098)
45-<55 & Moderate	1.009	0.298	0.976	(0.565 to 1.800)
45-<55 & Severe	1.081	0.330	0.799	(0.594 to 1.968)
55-<65 & LDA	0.644	0.172	0.099	(0.381 to 1.087)
55-<65 & Moderate	0.562	0.146	0.027	(0.338 to 0.935)
55-<65 & Severe	0.767	0.206	0.323	(0.453 to 1.298)
65-<75 & LDA	0.793	0.213	0.388	(0.468 to 1.343)
65-<75 & Moderate	0.608	0.160	0.059	(0.363 to 1.019)
65-<75 & Severe	0.706	0.195	0.208	(0.411 to 1.213)
>=75 & LDA	0.508	0.132	0.009	(0.305 to 0.846)
>=75 & Moderate	0.332	0.086	<0.001	(0.200 to 0.552)
>=75 & Severe	0.436	0.121	0.003	(0.253 to 0.750)

Adjusted model that includes interaction term

- ORs with CDAI represent risk due to CDAI in the youngest age group (< 45years)
- Interaction OR's represent how these ORs change with older age groups
- OR close to 1 indicates age group similar in risk to <45
- OR <1 indicates age group has lower risk than <45
- OR's consistently <1 for ages 55 and above
- We chose 55 as dividing point to illustrate differences in risk

Table S2. Individual components of CDAI and SCD by quartile

		OR	95% CI
Pt Global	1st quartile (ref)	1	
	2nd quartile	1.62	1.37 1.90
	3rd quartile	2.80	2.39 3.26
	4th quartile	4.55	3.89 5.31
MD Global	1st quartile (ref)	1	
	2nd quartile	1.05	0.92 1.20
	3rd quartile	1.23	1.07 1.41
	4th quartile	1.30	1.12 1.52
Tender Jts	1st quartile (ref)	1	
	2nd quartile	0.94	0.80 1.10
	3rd quartile	1.20	1.07 1.36
	4th quartile	1.30	1.14 1.47
Swollen Jts	1st and 2nd quartile (ref)*	1.00	
	3rd quartile	0.81	0.73 0.91
	4th quartile	0.80	0.72 0.90

+Age, insurance, BMI, education, race, disabled, smoking status, duration of RA, history of diabetes, history of fibromyalgia, exercising, drinking, prednisone use, nsaid use, narcotic use, number prior biologics, current MTX use, current biologic/targeted synthetic dmard use

*50% zeroes so 1st and 2nd quartile the same

Note: interpretation of swollen joints (reduction in risk with increase in swollen joints) – likely compensating for risk in other 3 components which are correlated with SJ. If full model with only swollen joints:

Covariate	Odds Ratio	Std. Err.	P> z	95% Conf. Interval
4 quantiles of swollen_jts_28				
1*	1			
3	1.065	0.053	0.207	(0.966 to 1.175)
4	1.347	0.062	<0.001	(1.231 to 1.475)

Table S3. Baseline characteristics missing vs. complete

Variable	missing data (N =6872)		complete data (N =33537)		p-value
	Mean	±SD	Mean	±SD	
Age	62.12	±14.22	62.35	±13.46	0.199
BMI	29.33	±7.17	29.65	±7.28	0.001
Duration of RA (years)	11.29	±10.79	12.76	±10.72	<0.001
CDAI	11.96	±11.99	10.66	±11.06	<0.001
28 joints: tender	3.61	±5.60	3.24	±5.43	<0.001

Variable	missing data (N =6872)		complete data (N =33537)		p-value
	N	(%)	N	(%)	
28 joints: swollen	2.74	±4.45	2.32	±3.91	<0.001
Patient global assessment	34.28	±28.06	32.62	±27.28	<0.001
Physician global assessment	21.86	±22.04	18.39	±20.03	<0.001
scale					
patient fatigue	38.98	±30.86	38.18	±30.42	0.052
HAQ	.85	±0.74	.82	±0.74	0.003
Problem thinking					0.088
no problems thinking	6204	(90.3)	30496	(90.9)	
problems thinking	668	(9.7)	3041	(9.1)	
Gender					0.003
Male	1679	(24.4)	7636	(22.8)	
Female	5193	(75.6)	25901	(77.2)	
White					<0.001
No	1438	(22.1)	5785	(17.2)	
Yes	5057	(77.9)	27752	(82.8)	
College completed					<0.001
No	2565	(45.1)	13844	(41.3)	
Yes	3128	(54.9)	19693	(58.7)	
Smoker in 3 categories					<0.001
Never	3113	(50.2)	17460	(52.1)	
Previous	1943	(31.3)	10713	(31.9)	
Current	1144	(18.5)	5364	(16.0)	
Private insurance					<0.001
No	2891	(42.1)	11454	(34.2)	
Yes	3981	(57.9)	22083	(65.8)	
Medicare					<0.001
No	4039	(58.8)	18199	(54.3)	
Yes	2833	(41.2)	15338	(45.7)	
Medicaid					<0.001
No	6350	(92.4)	31540	(94.0)	
Yes	522	(7.6)	1997	(6.0)	
No insurance					<0.001

Variable	missing data (N =6872)		complete data (N =33537)		p-value
No	6739	(98.1)	33123	(98.8)	
Yes	133	(1.9)	414	(1.2)	
History of diabetes					0.885
No	6175	(89.9)	30116	(89.8)	
Yes	697	(10.1)	3421	(10.2)	
History of fibromyalgia					<0.001
No	6541	(95.4)	31638	(94.3)	
Yes	316	(4.6)	1899	(5.7)	
Disabled					0.064
No	5043	(85.6)	29001	(86.5)	
Yes	850	(14.4)	4536	(13.5)	
Use MTX					0.014
No	3297	(48.0)	16636	(49.6)	
Yes	3575	(52.0)	16901	(50.4)	
Prednisone use					<0.001
no prednisone	5030	(75.2)	26318	(78.5)	
dose<10	1201	(18.0)	5328	(15.9)	
dose>=10	459	(6.9)	1891	(5.6)	
Drinking					<0.001
Non drinker	3200	(66.3)	18703	(55.8)	
occasionally	624	(12.9)	5965	(17.8)	
1-3 per week	713	(14.8)	6358	(19.0)	
1-2 per day	260	(5.4)	2306	(6.9)	
3 or more daily	27	(0.6)	205	(0.6)	
Exercise					0.012
No	2233	(43.9)	14579	(43.5)	
1-2 times/week	899	(17.7)	5840	(17.4)	
3-4 times/week	872	(17.1)	5948	(17.7)	
5-6 times/week	333	(6.5)	2500	(7.5)	
Daily	272	(5.3)	1480	(4.4)	
Not sure	483	(9.5)	3190	(9.5)	
Number prior biologic/ts dmarid					<0.001
none	2902	(42.2)	11586	(34.5)	
1	2105	(30.6)	10396	(31.0)	

Variable	missing data (N =6872)		complete data (N =33537)		p-value
2	928	(13.5)	5333	(15.9)	
3+	937	(13.6)	6222	(18.6)	
use of biologic/ts dmard					<0.001
No	3629	(52.8)	16271	(48.5)	
Yes	3243	(47.2)	17266	(51.5)	
Use of NSAIDs					0.002
No	3455	(50.3)	16168	(48.2)	
Yes	3417	(49.7)	17369	(51.8)	
narcotic pain med					0.070
No	5918	(86.1)	28597	(85.3)	
Yes	954	(13.9)	4940	(14.7)	
Depression					0.046
No	5077	(89.9)	29853	(89.0)	
Yes	570	(10.1)	3684	(11.0)	

BMI, Body Mass Index; CDAI, Clinical disease activity index; TJC, Tender Joint Count; SJC: Swollen Joint Count; PGA: Patient Global Assessment; EGA: Evaluator Global Assessment; VAS: Visual Analog Scale; HAQ: Health Assessment Questionnaire (No missing) ≥ 6 cat. included) MTX, Methotrexate; NSAIDS, Non-steroidal anti-inflammatory drugs; TS Dmard, targeted synthetic Dmard.