

Supplemental Table 1. Association of acoustic features with incident dementia in patients who were 65 years or older

Index	Marker	Annotation
1	F0final_sma	The smoothed fundamental frequency contour
2	voicingFinalUnclipped_sma	Unclipped means of the voicing probability of the nal fundamental frequency candidate
3	jitterLocal_sma	The local (frame-to-frame) Jitter (pitch period length deviations)
4	jitterDDP_sma	The differential frame-to-frame Jitter (the `Jitter of the Jitter')
5	shimmerLocal_sma	local (frame-to-frame) Shimmer (amplitude deviations between pitch periods)
6	logHNR_sma	Harmonics-to-noise ratio
7	audspec_lengthL1norm_sma	audspec_lengthL1norm_sma
8	audspecRasta_lengthL1norm_sma	audspecRasta_lengthL1norm_sma
9	pcm_RMSenergy_sma	Root-mean-square signal frame energy
10	pcm_zcr_sma	Zero-crossing rate of time signal (frame-based)
11	mfcc_sma[1]	Mel-Frequency cepstral coefficients 1
12	mfcc_sma[2]	Mel-Frequency cepstral coefficients 2
13	mfcc_sma[3]	Mel-Frequency cepstral coefficients 3
14	mfcc_sma[4]	Mel-Frequency cepstral coefficients 4
15	mfcc_sma[5]	Mel-Frequency cepstral coefficients 5
16	mfcc_sma[6]	Mel-Frequency cepstral coefficients 6
17	mfcc_sma[7]	Mel-Frequency cepstral coefficients 7
18	mfcc_sma[8]	Mel-Frequency cepstral coefficients 8
19	mfcc_sma[9]	Mel-Frequency cepstral coefficients 9
20	mfcc_sma[10]	Mel-Frequency cepstral coefficients 10
21	mfcc_sma[11]	Mel-Frequency cepstral coefficients 11
22	mfcc_sma[12]	Mel-Frequency cepstral coefficients 12
23	mfcc_sma[13]	Mel-Frequency cepstral coefficients 13
24	mfcc_sma[14]	Mel-Frequency cepstral coefficients 14
25	F0final_sma_de	The smoothed fundamental frequency contour delta
26	voicingFinalUnclipped_sma_de	Unclipped means of the voicing probability of the nal fundamental frequency candidate delta
27	jitterLocal_sma_de	The local (frame-to-frame) Jitter (pitch period length deviations) delta
28	jitterDDP_sma_de	The differential frame-to-frame Jitter (the `Jitter of the Jitter')
29	shimmerLocal_sma_de	local (frame-to-frame) Shimmer (amplitude deviations between pitch periods)
30	logHNR_sma_de	Harmonics-to-noise ratio
31	audspec_lengthL1norm_sma_de	audspec_lengthL1norm_sma_de

32	audspecRasta_lengthL1norm_sma_de	audspecRasta_lengthL1norm_sma_de
33	pcm_RMSenergy_sma_de	Root-mean-square signal frame energy delta
34	pcm_zcr_sma_de	Zero-crossing rate of time signal (frame-based) delta
35	mfcc_sma_de[1]	Mel-Frequency cepstral coefficients delta 1
36	mfcc_sma_de[2]	Mel-Frequency cepstral coefficients delta 2
37	mfcc_sma_de[3]	Mel-Frequency cepstral coefficients delta 3
38	mfcc_sma_de[4]	Mel-Frequency cepstral coefficients delta 4
39	mfcc_sma_de[5]	Mel-Frequency cepstral coefficients delta 5
40	mfcc_sma_de[6]	Mel-Frequency cepstral coefficients delta 6
41	mfcc_sma_de[7]	Mel-Frequency cepstral coefficients delta 7
42	mfcc_sma_de[8]	Mel-Frequency cepstral coefficients delta 8
43	mfcc_sma_de[9]	Mel-Frequency cepstral coefficients delta 9
44	mfcc_sma_de[10]	Mel-Frequency cepstral coefficients delta 10
45	mfcc_sma_de[11]	Mel-Frequency cepstral coefficients delta 11
46	mfcc_sma_de[12]	Mel-Frequency cepstral coefficients delta 12
47	mfcc_sma_de[13]	Mel-Frequency cepstral coefficients delta 13
48	mfcc_sma_de[14]	Mel-Frequency cepstral coefficients delta 14

Supplemental Table 2. Association of acoustic features with incident dementia in patients who were 65 years or older

Marker	HR	95% CI	P value
jitterDDP_sma_de	0.77	0.66-0.90	7.5E-04
mfcc_sma_de[4]	0.77	0.69-0.87	1.2E-05
shimmerLocal_sma_de	0.85	0.73-0.99	3.5E-02
mfcc_sma_de[3]	0.77	0.69-0.87	1.2E-05
pcm_zcr_sma_de	1.39	1.23-1.57	1.2E-07
mfcc_sma_de[1]	0.79	0.71-0.89	5.7E-05
pcm_RMSenergy_sma	1.29	1.11-1.49	5.9E-04
jitterLocal_sma	1.32	1.17-1.49	5.6E-06
audspec_lengthL1norm_sma	1.33	1.15-1.54	1.8E-04
jitterDDP_sma	1.32	1.17-1.48	6.1E-06
voicingFinalUnclipped_sma	1.01	0.90-1.14	8.6E-01
F0final_sma_de	0.86	0.75-0.98	2.8E-02
F0final_sma	1.28	1.14-1.44	2.2E-05
audspecRasta_lengthL1norm_sma	1.22	1.08-1.38	1.3E-03

HR: hazard ratio; CI: confidence interval

Supplemental Table 3. Association of acoustic features with incident dementia in age matched patients

Marker	HR	95% CI	P value
jitterDDP_sma_de	0.79	0.68-0.92	3.0E-03
mfcc_sma_de[4]	0.77	0.69-0.87	1.7E-05
shimmerLocal_sma_de	0.87	0.75-1.02	7.8E-02
mfcc_sma_de[3]	0.78	0.70-0.88	3.0E-05
pcm_zcr_sma_de	1.36	1.21-1.53	5.6E-07
mfcc_sma_de[1]	0.80	0.72-0.89	8.8E-05
pcm_RMSenergy_sma	1.27	1.09-1.47	1.5E-03
jitterLocal_sma	1.33	1.18-1.49	2.1E-06
audspec_lengthL1norm_sma	1.29	1.10-1.50	1.3E-03
jitterDDP_sma	1.33	1.18-1.49	2.2E-06
voicingFinalUnclipped_sma	1.02	0.91-1.15	7.4E-01
F0final_sma_de	0.88	0.77-1.00	5.1E-02
F0final_sma	1.29	1.15-1.44	8.4E-06
audspecRasta_lengthL1norm_sma	1.25	1.11-1.41	3.2E-04

HR: hazard ratio; CI: confidence interval

Supplemental Table 4. Association of acoustic features with incident dementia in men

Marker	HR	95% CI	P value
shimmerLocal_sma_de	0.68	0.54-0.85	7.8E-04
jitterDDP_sma_de	0.70	0.57-0.86	8.2E-04

HR: hazard ratio; CI: confidence interval

Supplemental Table 5. Association of acoustic features with incident dementia in women

Marker	HR	95% CI	P value
mfcc_sma_de[4]	0.68	0.59-0.80	1.3E-06
jitterDDP_sma_de	0.74	0.64-0.86	1.2E-04
shimmerLocal_sma_de	0.75	0.65-0.87	1.3E-04
pcm_RMSenergy_sma	1.36	1.16-1.59	1.6E-04
jitterDDP_sma	1.35	1.15-1.58	2.1E-04
jitterLocal_sma	1.34	1.15-1.57	2.7E-04
pcm_zcr_sma_de	1.36	1.15-1.60	3.2E-04
audspec_lengthL1norm_sma	1.33	1.13-1.55	4.2E-04
mfcc_sma_de[1]	0.76	0.65-0.89	7.4E-04
mfcc_sma_de[3]	0.76	0.65-0.89	8.1E-04

HR: hazard ratio; CI: confidence interval

Supplemental Figure 1. Distribution of weighted acoustic score among referents and dementia cases (median -0.21 vs 0.54)

