Supplementary material

DELCODE study group

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Supplementary methods

DELCODE inclusion criteria

DELCODE comprises two control groups and three patient groups. Clinical screening of patient groups (subjective cognitive decline [SCD], mild cognitive impairment [MCI], and dementia of the Alzheimer type [DAT]) was performed at the respective memory clinic. Those in the SCD group fulfilled research criteria for SCD, expressed concerns about a subjectively perceived cognitive decline to a physician at the respective memory clinic, and were cognitively unimpaired as defined by a score better than –1.5 *SD* below the German age, sex, and education-adjusted norms for the Consortium to Establish a Registry for Alzheimer's Disease (CERAD) test battery. The MCI group fulfilled research criteria for MCI and was limited to amnestic MCI as defined by a performance below –1.5 *SD* on the delayed recall trial of the CERAD word-list episodic memory tests. The DAT group fulfilled research criteria for DAT and had Mini-Mental Status Examination scores ≥ 18. Both control groups included cognitively unimpaired individuals with one group specifically including first-degree relatives of AD patients (n = 56). The other control group comprised n = 139 participants. The two control groups were collapsed to form the HC group in the present study. Participants in this diagnostic group performed better than –1.5 *SD* below the German age, sex, and education-adjusted norms for the CERAD test battery and reported no subjective concerns about cognitive decline.

For all diagnostic groups, inclusion criteria were age ≥ 60 years, fluency in German, the ability to provide informed consent, and the availability of a study partner. Exclusion criteria included, but were not limited to, conditions that would prevent participation according to the study protocol (e.g., significant sensorimotor impairments), current or past diagnoses of psychiatric disorders (e.g., major depressive disorder, disorders due to psychoactive substance use), neurodegenerative disorders other than AD, vascular dementia, and a history of stroke with persistent clinical symptoms. The use of sedative, anticholinergic, and other anti-dementia medication as well as the use of investigational agents for treatment of cognitive impairment or dementia in all diagnostic groups except for the DAT group up to ≤ 1 month prior to screening and during the expected duration of the study led to exclusion.

CSF amyloid positivity predictions

We closely followed an approach proposed by Hu *et al.* to predict cerebrospinal fluid (CSF)-based positivity for amyloid-β (Aβ) in individuals without CSF data.[1] This analysis was performed in the whole DELCODE dataset and was not limited to sub-sample analysed in the present manuscript. First, we fitted a binomial logistic regression model predicting CSF-based Aβ-positivity in participants with available CSF data and all required predictors (number of apolipoprotein E [APOE] ε4 alleles [0/1/2], APOE ε2 carriership [yes/no], age, plasma $A\beta_{42}/A\beta_{40}$ ratio, and plasma phosphorylated tau 181). These data availability criteria resulted in a sample size of n = 328. Note that the original work by Hu *et al.* did not include plasma phosphorylated tau 181 as a predictor. We included this metric as this led to a substantial increase in model performance (AUC [95% confidence interval]: 0.94 [0.91; 1.00] *versus* 0.91 [0.87; 1.00]). The trained model was then used to predict the probability of CSF-based Aβ-positivity in all DELCODE participants with available predictors (n = 675), regardless of CSF biomarker availability. The extracted subject-level probabilities ranged from 0 to 1, with higher values representing a higher probability of an individual being positive based on CSF $A\beta_{42}/A\beta_{40}$ ratios.

Longitudinal segmentation of medial temporal lobe subregions

The longitudinal, template-based implementation of the ASHS algorithm[2] relies on within-subject multivariate templates that were created using Advanced Normalization Tools (ANTs, ref.[3]). For T1-ASHS, these templates were calculated from all available T1-weighted images for a given participant, both at the original and an upsampled (0.5 × 0.5 × 1.0mm) resolution to approximate the anisotropic resolution of the T2-weighted images.[4] For T2-ASHS, templates were generated from available T1- and T2-weighted images. ASHS was run on the resulting within-subject multivariate templates, using the atlases referenced in the main text. To obtain segmentations for each available time point, the resulting multilabel masks were warped onto the individual upsampled T1-weighted (for T1-ASHS) or original T2-weighted (for T2-ASHS) images using the warp fields and transformation matrices created during template calculation. All template segmentations underwent visual quality control and were manually edited if needed.

Supplementary results

Pre-normalization of cognitive test scores

Using latent process modelling with subject-level random slopes and intercepts as well as spline-based link functions, we pre-normalized raw scores on the ADAS-Cog Delayed Word Recall (five knots with internal nodes at 2, 5, and 7), ADAS-Cog Figure Copying (four knots with internal nodes at 7 and 9), ADAS-Cog-13 (four quantile based knots), CDR-SB (six knots with internal nodes at 2, 5, 7, and 10), Clock Copying (five knots with internal nodes at 5, 7, and 9), Clock Drawing (five knots with internal nodes at 5, 7, and 9), FAQ (six knots with internal nodes at 2, 5, 10, 15), MMSE (six knots with internal nodes at 20, 24, 26, 28), and NPI-Q (six knots with internal nodes at 2, 5, 10, 15). This was done to ease LGCM fitting given the non-normal distributions (Supplementary Figure 9). These scores, along with the non-normalized raw scores from the remaining inventories, were then *z*-scored to participants in the HC Aβ–, HC Aβ+, and SCD Aβ+ groups and then passed latent growth curve models (LGCMs). These data are displayed in Supplementary Figure 10.

Latent growth curve model fits

None of the fitted LGCMs failed to meet all of the *a priori* defined criteria for acceptable model fit. Only three models slightly surpassed the threshold of RMSEA = 0.08 (hippocampal tail & PACC-5: RMSEA = 0.082; hippocampal tail & FCSRT-96: RMSEA = 0.080; inferior parietal cortex & PACC-5: RMSEA = 0.082). Given their acceptable CFIs (all > 0.96), these models were retained but should be interpreted cautiously.

With regards to variance structure, parahippocampal volumetric slopes did not consistently meet the critical *Z* threshold in all cases. However, as these violations were marginal and some models including this measure did show sufficient slope variance, we chose to include all models incorporating parahippocampal volumes, while advising readers to consider this limitation.

References

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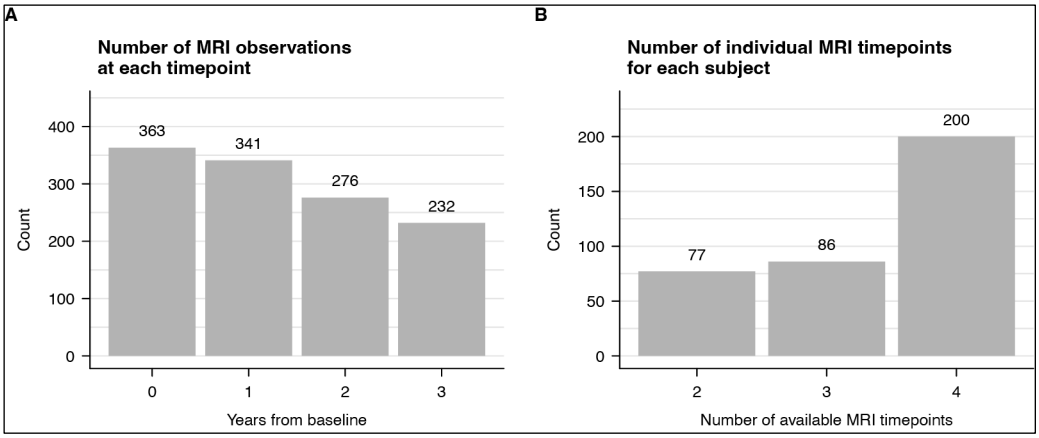
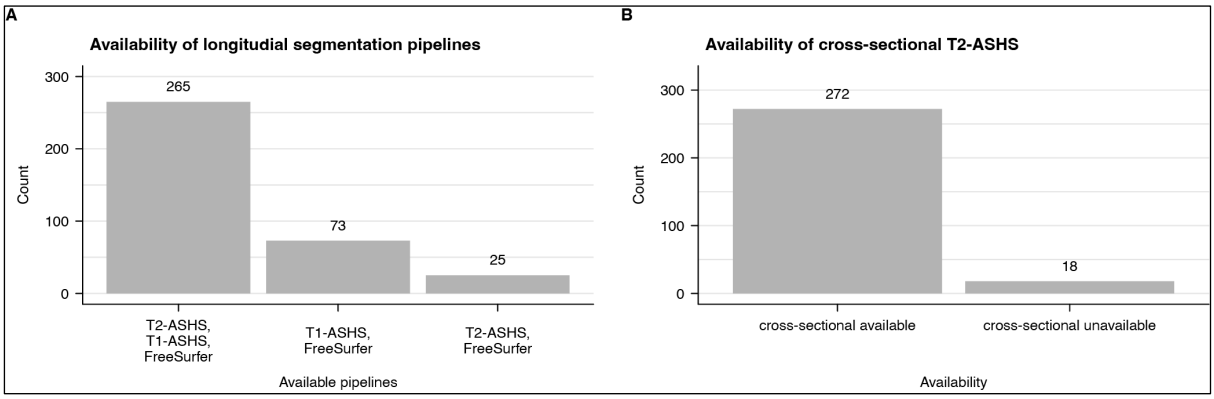
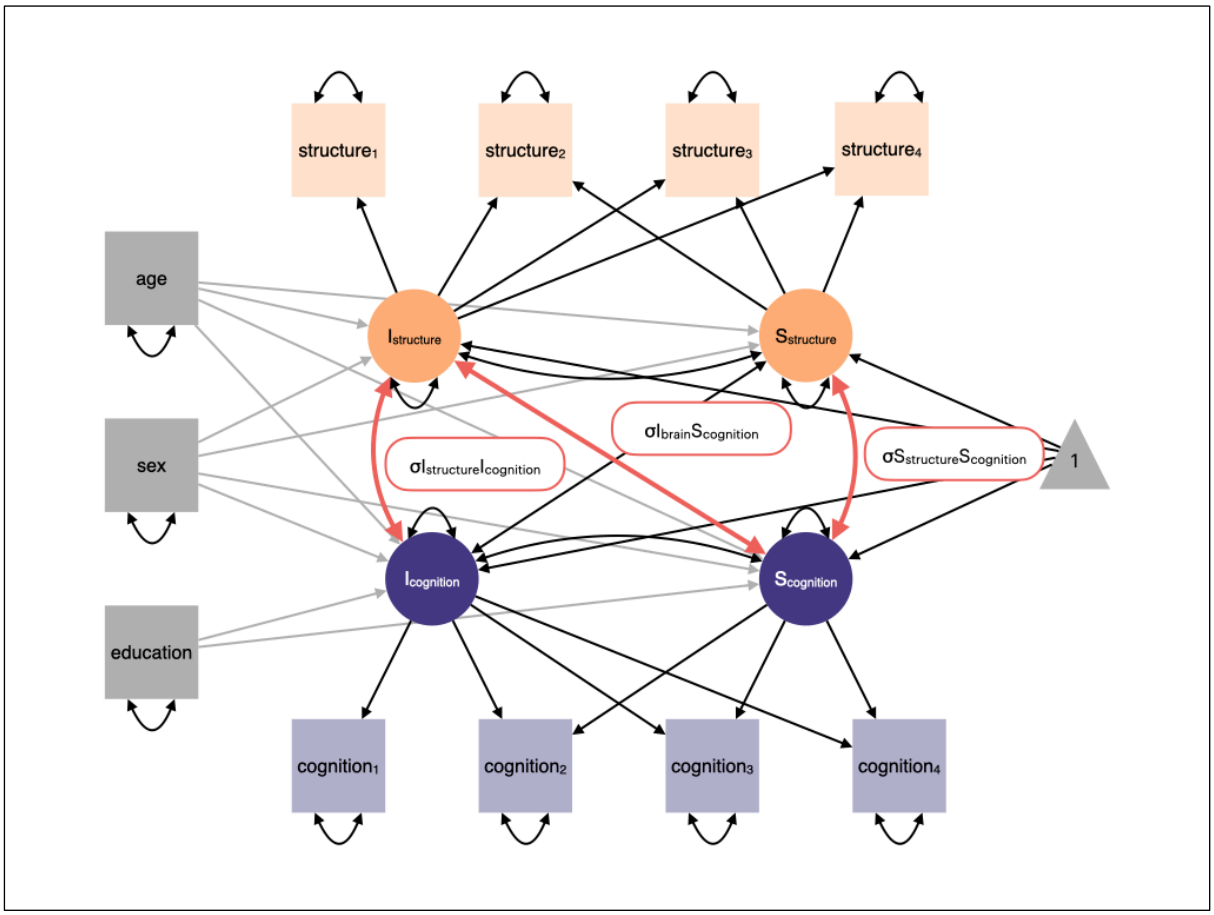
Supplementary figures



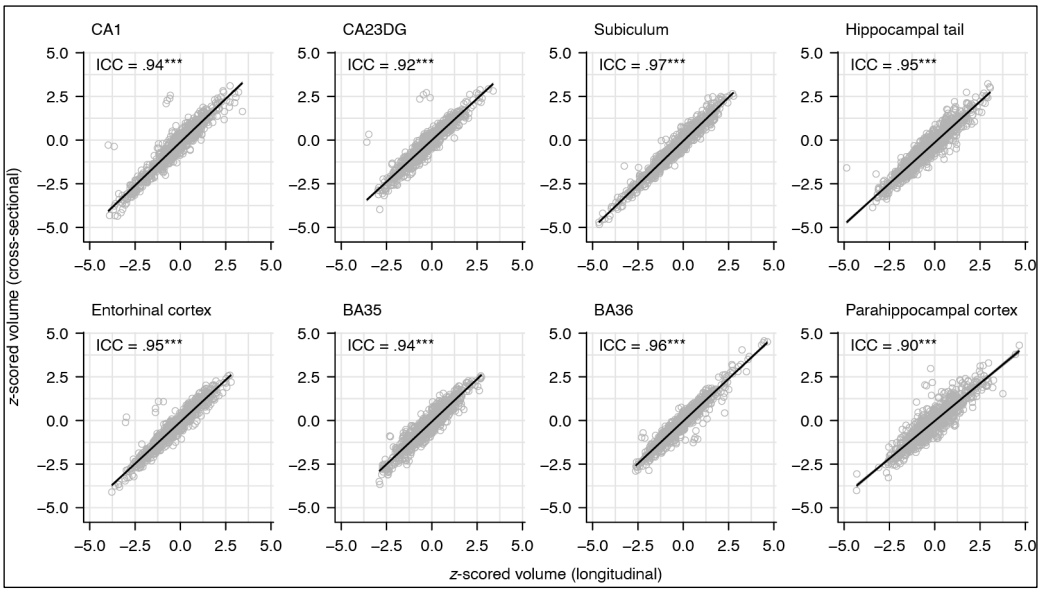
Supplementary Figure 1 MRI data availability. Bar plots indicate (**A**) the number of available scans by study time point and (**B**) the number of subjects with two, three, or four available scans.



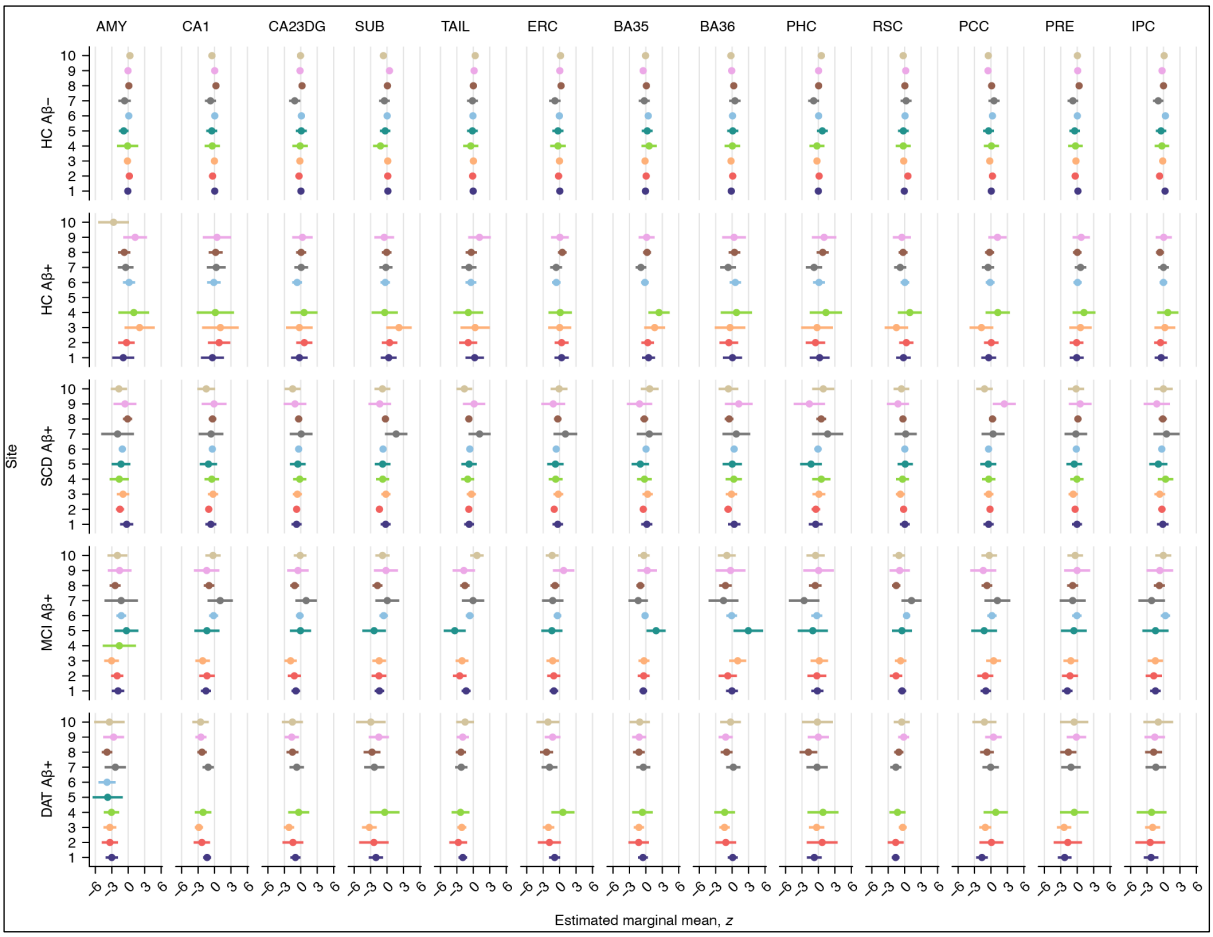
Supplementary Figure 2 Segmentation pipeline availability. Displayed are the counts of (**A**) different constellations of segmentation pipeline availability and (**B**) the availability of cross-sectional T2-ASHS in participants with available longitudinal T2-ASHS. The availability of either T1- or T2-ASHS were required for inclusion.



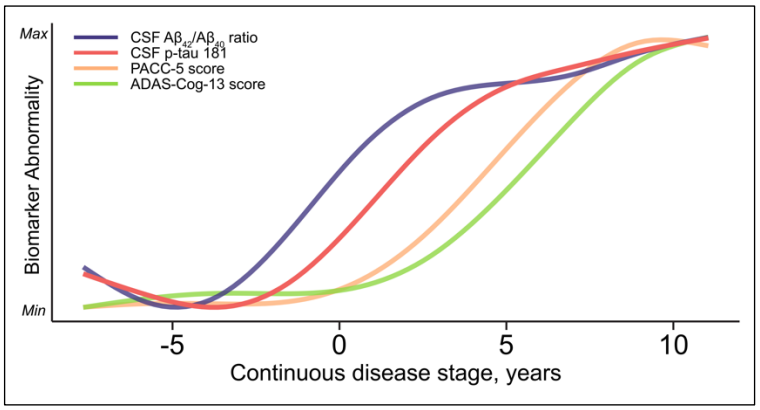
Supplementary Figure 3 Bivariate latent growth curve model (LGCM) estimating the associations of longitudinally recorded measures of brain structure and cognition. Manifest variables were recorded once (covariates) or four times (structure and cognitive variables). Parameters of interest were the covariance estimates representing baseline-baseline ($\sigma I_{structure} I_{cognition}$), baseline-change ($\sigma I_{structure} S_{cognition}$), and change-change ($\sigma S_{structure} S_{cognition}$) associations of structure and cognition. Paths estimating the residual covariance between observed cognitive and brain variables at each time point are not shown for visual clarity.
Abbreviations: I, intercept; S, slope.



Supplementary Figure 4 Scatter plots of baseline volumes obtained from the template-based and cross-sectional implementations of T2-ASHS. Volumes were scaled and centred to the HC Aβ– group.
Abbreviations: ICC, intraclass correlation coefficient.

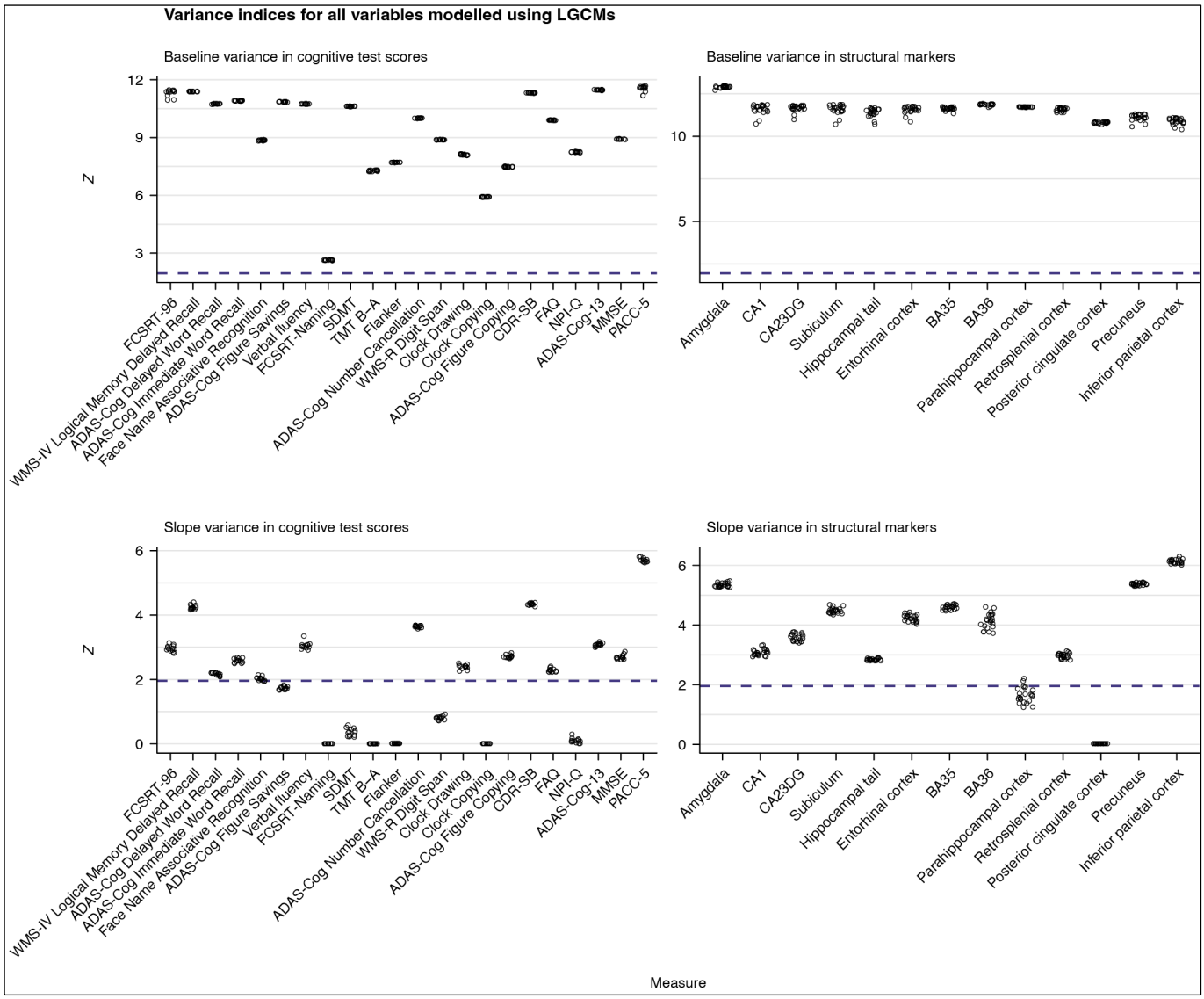


Supplementary Figure 5 Estimated marginal means of the analysed structural MRI readouts, stratified by diagnostic group and DELCODE scanning site. All readouts were scaled and centred to the HC Aβ− group. Estimated marginal means are controlled for age and sex. Error bars denote 95% confidence intervals.
Abbreviations: Aβ, amyloid-β. AMY, amygdala. BA, Brodmann area. CA, cornu ammonis. CA23DG, cornu ammonis 2, 3, and dentate gyrus. DAT, dementia of the Alzheimer type. ERC, entorhinal cortex. FDR, false discovery rate. HC, healthy controls. IPC, inferior parietal cortex. MCI, mild cognitive impairment. PCC, posterior cingulate cortex. PHC, parahippocampal cortex. PRE, precuneus. RSC, retrosplenial cortex. SCD, subjective cognitive decline. SUB, subiculum. TAIL, hippocampal tail.



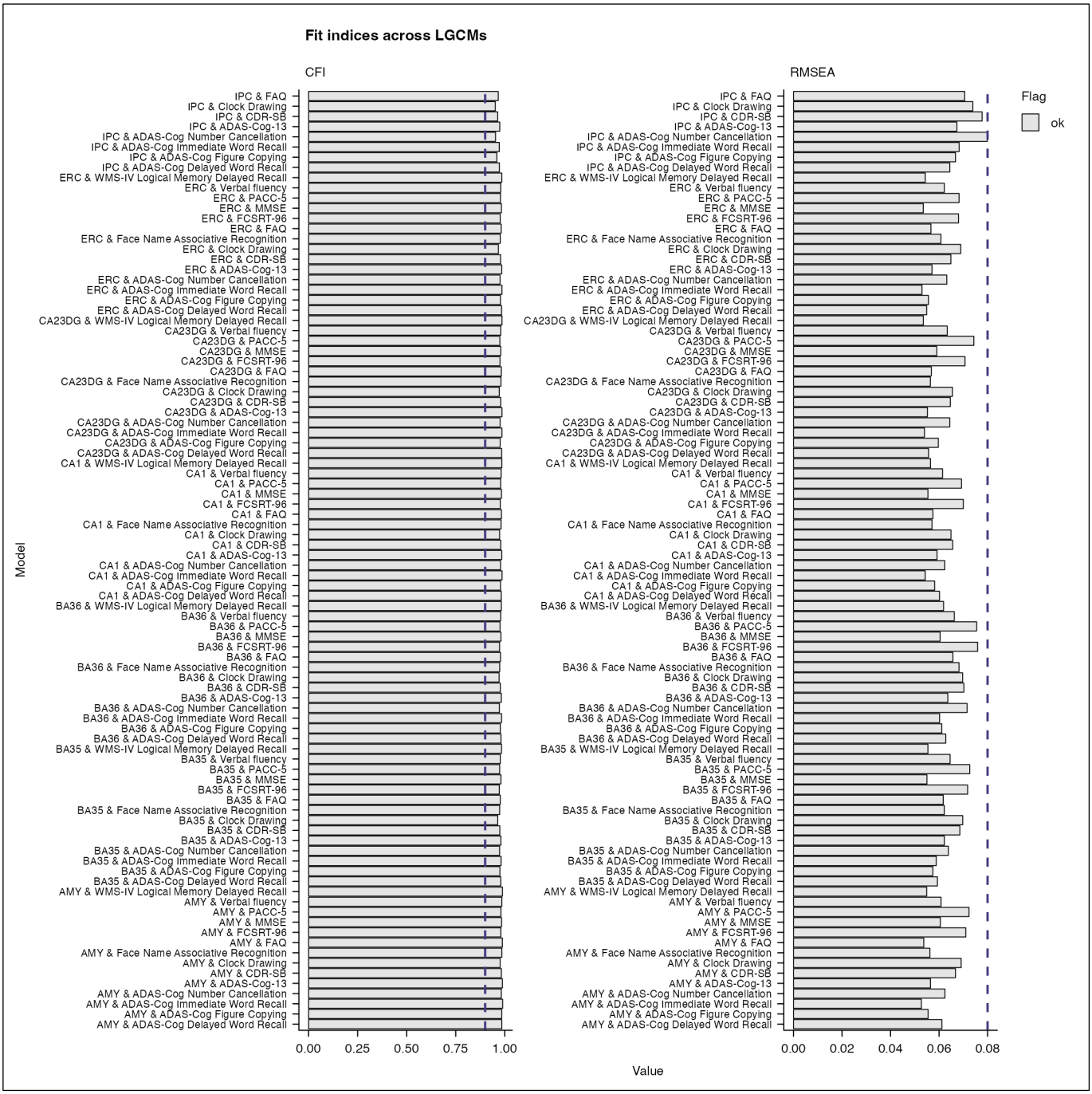
Supplementary Figure 6 Biomarker trajectories across a continuous disease stage. This model was modified from Lattmann-Grefe *et al.* by excluding structural MRI markers in order to prevent circular hypothesis testing in the current study.

Abbreviations: ADAS-Cog, Alzheimer's Disease Assessment Scale-Cognitive subscale. PACC-5, Preclinical Alzheimer Cognitive Composite.



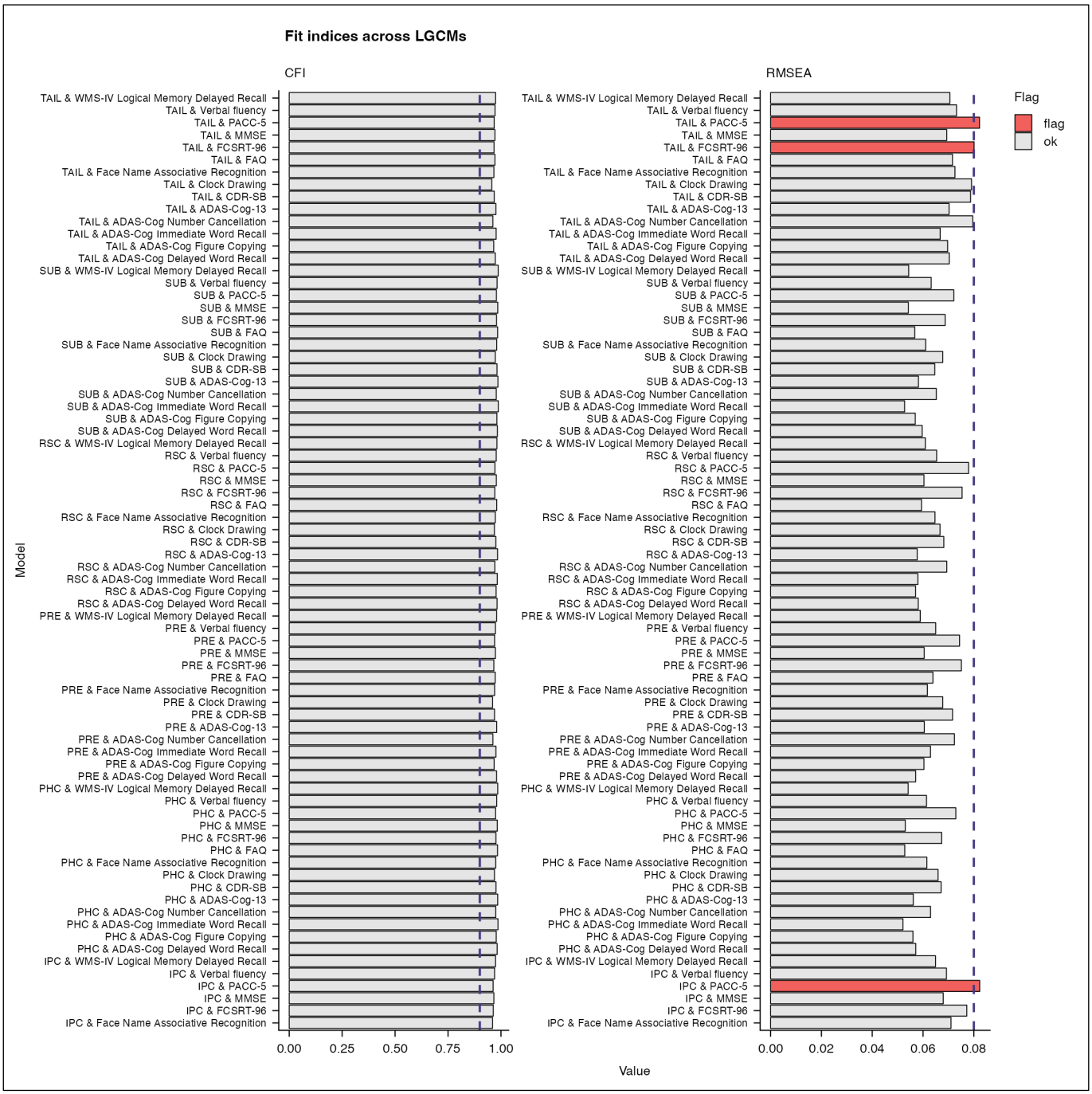
Supplementary Figure 7 Variance indices for all structural markers and cognitive test scores included in the LGCM analysis. The critical $Z = 1.96$ threshold is indicated by the dashed line. Measures falling below that threshold do not have sufficient variance to allow inference about covariance with other variables.

Abbreviations: ADAS-Cog, Alzheimer's Disease Assessment Scale-Cognitive subscale. BA, Brodmann area. CA, cornu ammonis. CA23DG, cornu ammonis 2, 3, and dentate gyrus. CSD-SB, Clinical Dementia Rating Sum of Boxes scale. FAQ, Functional Activities Questionnaire. FCSRT, Free and Cued Selective Reminding Test. MMSE, Mini-Mental State Examination. NPI-Q, Neuropsychiatric Inventory–Questionnaire. PACC-5, Preclinical Alzheimer Cognitive Composite. TMT, Trail Making Test. WMS, Wechsler Memory Scale.

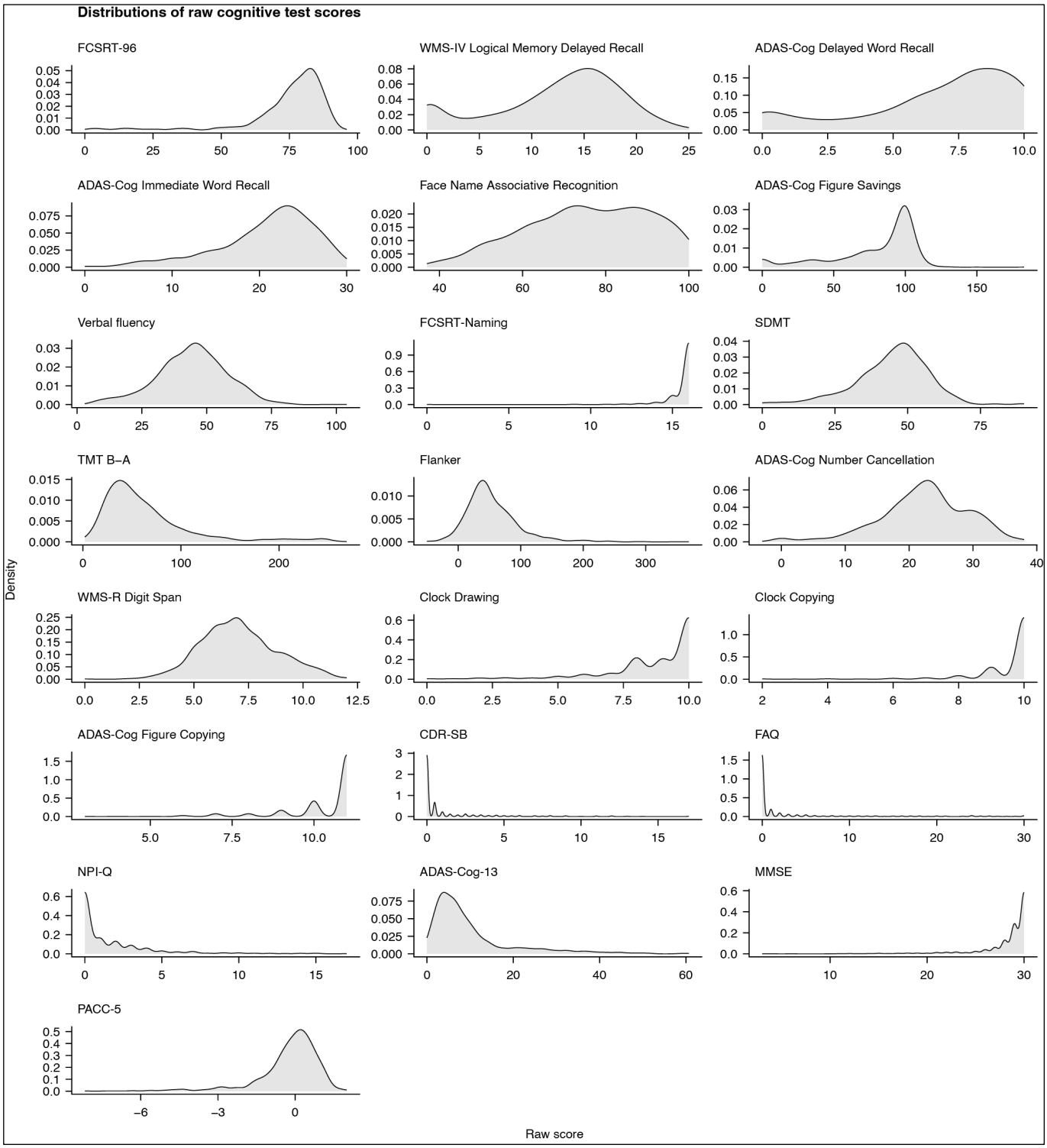


Supplementary Figure 8 Fit indices for all LGCMs with sufficient variance in slopes and intercepts of both cognitive test scores and structural MRI markers. The critical values of RMSEA = 0.08 and CFI = 0.90 are indicated by the dashed lines.

Abbreviations: ADAS-Cog, Alzheimer's Disease Assessment Scale-Cognitive subscale. BA, Brodmann area. CA, cornu ammonis. CA23DG, cornu ammonis 2, 3, and dentate gyrus. CFI, comparative fit index. CSD-SB, Clinical Dementia Rating Sum of Boxes scale. FAQ, Functional Activities Questionnaire. FCSRT, Free and Cued Selective Reminding Test. MMSE, Mini-Mental State Examination. PACC-5, Preclinical Alzheimer Cognitive Composite. RMSEA, root mean square error of approximation.

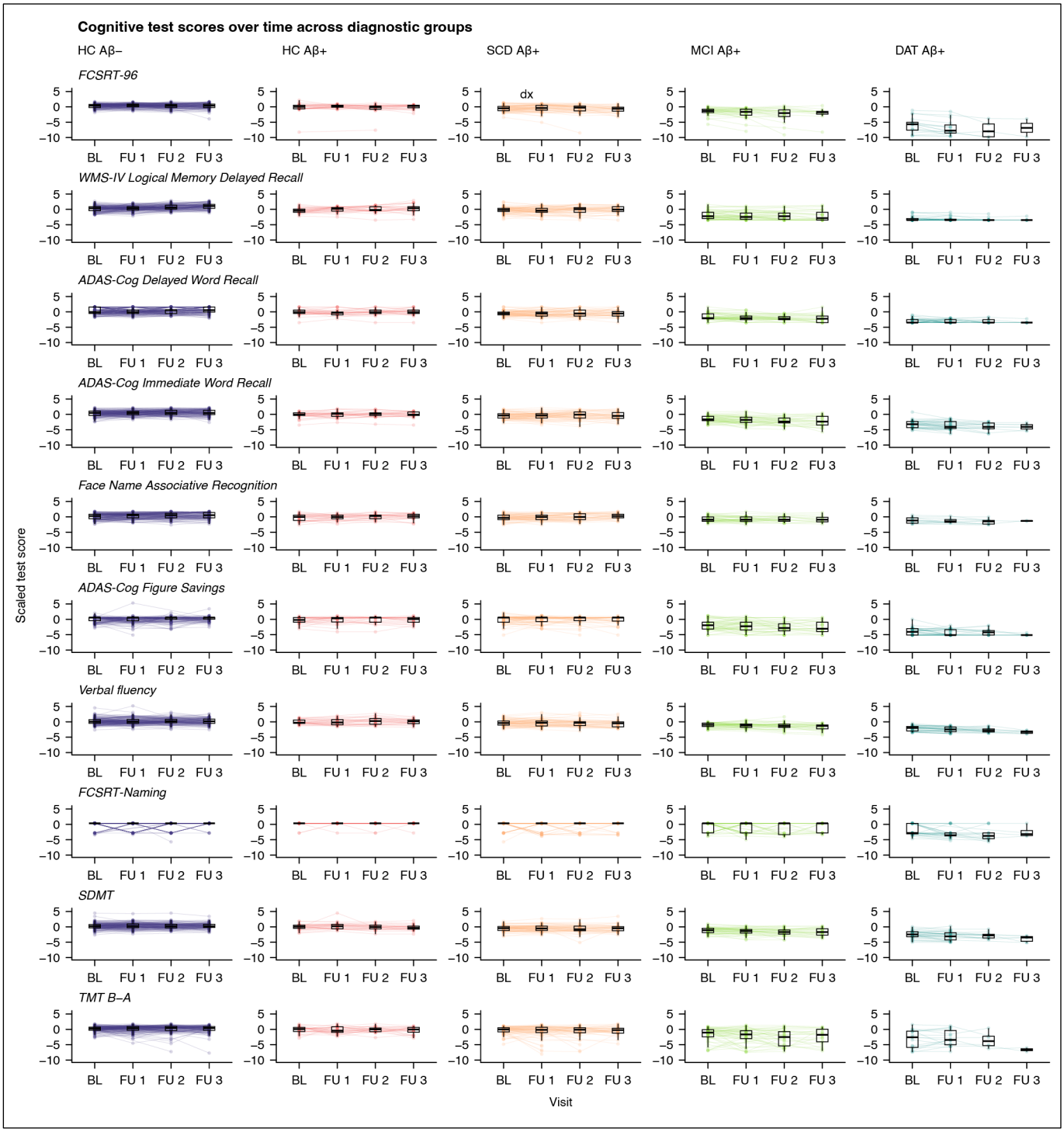


Supplementary Figure 8 *continued*



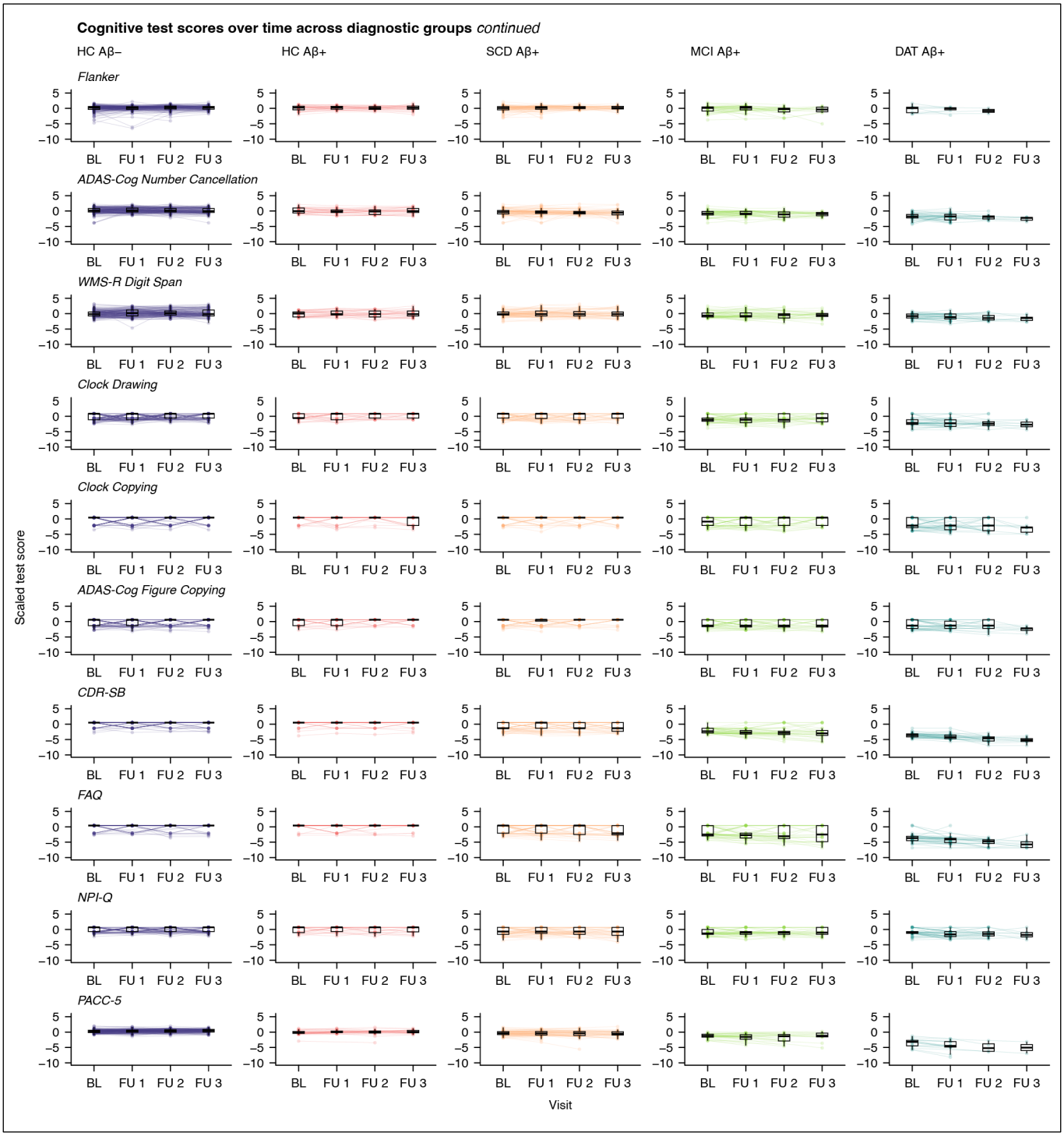
Supplementary Figure 9 Density plots of all raw cognitive test scores.

Abbreviations: ADAS-Cog, Alzheimer's Disease Assessment Scale-Cognitive subscale. CSD-SB, Clinical Dementia Rating Sum of Boxes scale. FAQ, Functional Activities Questionnaire. FCSRT, Free and Cued Selective Reminding Test. MMSE, Mini-Mental State Examination. NPI-Q, Neuropsychiatric Inventory–Questionnaire. PACC-5, Preclinical Alzheimer Cognitive Composite. SDMT, Symbol-Digit Modalities Test. TMT, trail making test. WMS, Wechsler Memory Scale.



Supplementary Figure 10 Standardized cognitive test scores by inventory, diagnostic group, and visit.

Abbreviations: ADAS-Cog, Alzheimer's Disease Assessment Scale-Cognitive subscale. BL, baseline. CSD-SB, Clinical Dementia Rating Sum of Boxes scale. DAT, dementia of the Alzheimer type. FAQ, Functional Activities Questionnaire. FCSRT, Free and Cued Selective Reminding Test. FU, follow-up. HC, healthy controls. MCI, mild cognitive impairment. MMSE, Mini-Mental State Examination. NPI-Q, Neuropsychiatric Inventory–Questionnaire. PACC-5, Preclinical Alzheimer Cognitive Composite. SCD, subjective cognitive decline. SDMT, Symbol-Digit Modalities Test. TMT, trail making test. WMS, Wechsler Memory Scale.



Supplementary Figure 10 *continued*

Supplementary tables

Supplementary Table 1 Summary statistics for ANCOVA models estimating the effect of study site on scaled structural MRI readouts while controlling for participant age and sex, stratified by diagnostic group.

Marker	Diagnostic group	df	F	p_{FDR}
Amygdala, volume	HC Aβ−	9; 136	0.84	.838
	HC Aβ+	8; 16	1.58	.894
	SCD Aβ+	9; 64	1.12	.924
	MCI Aβ+	9; 38	0.99	.551
	DAT Aβ+	9; 25	0.46	.953
CA1, volume	HC Aβ−	9; 139	0.97	.765
	HC Aβ+	7; 18	0.23	.973
	SCD Aβ+	9; 49	0.65	.924
	MCI Aβ+	8; 21	1.67	.357
	DAT Aβ+	7; 8	2.38	.653
CA23DG, volume	HC Aβ−	9; 139	0.97	.765
	HC Aβ+	7; 18	0.55	.894
	SCD Aβ+	9; 49	0.48	.924
	MCI Aβ+	8; 21	1.85	.352
	DAT Aβ+	7; 8	1.02	.792
Subiculum, volume	HC Aβ−	9; 139	1.51	.765
	HC Aβ+	7; 18	0.90	.894
	SCD Aβ+	9; 49	1.77	.924
	MCI Aβ+	8; 21	1.13	.497
	DAT Aβ+	7; 8	0.92	.792
Hippocampal tail, volume	HC Aβ−	9; 139	0.28	.980
	HC Aβ+	7; 18	0.59	.894
	SCD Aβ+	9; 49	0.82	.924
	MCI Aβ+	8; 21	3.02	.131
	DAT Aβ+	7; 8	0.31	.953
Entorhinal cortex, volume	HC Aβ−	9; 139	0.66	.842
	HC Aβ+	7; 18	0.85	.894
	SCD Aβ+	9; 49	0.71	.924
	MCI Aβ+	8; 21	0.93	.553
	DAT Aβ+	7; 8	1.64	.653
BA35, volume	HC Aβ−	9; 139	1.11	.765
	HC Aβ+	7; 18	2.13	.894
	SCD Aβ+	9; 49	0.72	.924
	MCI Aβ+	8; 21	1.55	.371
	DAT Aβ+	7; 8	0.50	.953
BA36, volume	HC Aβ−	9; 139	0.62	.842
	HC Aβ+	7; 18	0.58	.894
	SCD Aβ+	9; 49	1.10	.924
	MCI Aβ+	8; 21	1.79	.352
	DAT Aβ+	7; 8	1.76	.653
Parahippocampal cortex, volume	HC Aβ−	9; 139	1.12	.765
	HC Aβ+	7; 18	0.76	.894
	SCD Aβ+	9; 49	1.01	.924
	MCI Aβ+	8; 21	0.50	.843
	DAT Aβ+	7; 8	0.90	.792
Retrosplenial cortex, average thickness	HC Aβ−	9; 139	0.71	.842
	HC Aβ+	7; 18	0.75	.894
	SCD Aβ+	9; 49	0.59	.924
	MCI Aβ+	8; 21	3.32	.131
	DAT Aβ+	7; 8	2.20	.653
Posterior cingulate cortex, average thickness	HC Aβ−	9; 139	1.32	.765
	HC Aβ+	7; 18	1.13	.894
	SCD Aβ+	9; 49	1.33	.924
	MCI Aβ+	8; 21	1.13	.497
	DAT Aβ+	7; 8	1.73	.653
Precuneus, average thickness	HC Aβ−	9; 139	1.22	.765
	HC Aβ+	7; 18	0.50	.894
	SCD Aβ+	9; 49	0.47	.924
	MCI Aβ+	8; 21	1.25	.497
	DAT Aβ+	7; 8	1.38	.714
Inferior parietal cortex, average thickness	HC Aβ−	9; 139	2.14	.387
	HC Aβ+	7; 18	0.60	.894
	SCD Aβ+	9; 49	0.41	.924
	MCI Aβ+	8; 21	1.98	.352
	DAT Aβ+	7; 8	0.26	.953

FDR correction was performed separately in each diagnostic groups across structural measures.
Abbreviations: DAT, dementia of the Alzheimer type. df, degrees of freedom. HC, healthy control. MCI, mild cognitive impairment. SCD, subjective cognitive decline.

Supplementary Table 2 Summary statistics of ANCOVA models comparing baseline structural MRI readouts.

Marker	Predictor	*SS*	*df*	*MS*	*F*	$\eta^2_{partial}$ [95% C.I.]	*p*
Amygdala, volume	Age, years	169.25	1; 331	169.25	111.34	0.25 [0.19; 1.00]	< .001***
	Sex, male	0.59	1; 331	0.59	0.39	0.00 [0.00; 1.00]	.533
	Diagnostic group	271.98	4; 331	67.99	44.73	0.35 [0.28; 1.00]	< .001***
CA1, volume	Age, years	38.68	1; 283	38.68	34.81	0.11 [0.06; 1.00]	< .001***
	Sex, male	0.07	1; 283	0.07	0.07	0.00 [0.00; 1.00]	.798
	Diagnostic group	71.70	4; 283	17.92	16.13	0.19 [0.12; 1.00]	< .001***
CA23DG, volume	Age, years	21.94	1; 283	21.94	22.82	0.07 [0.03; 1.00]	< .001***
	Sex, male	2.08	1; 283	2.08	2.16	0.01 [0.00; 1.00]	.143
	Diagnostic group	28.24	4; 283	7.06	7.34	0.09 [0.04; 1.00]	< .001***
Subiculum, volume	Age, years	76.66	1; 283	76.66	76.48	0.21 [0.15; 1.00]	< .001***
	Sex, male	2.70	1; 283	2.70	2.69	0.01 [0.00; 1.00]	.102
	Diagnostic group	80.66	4; 283	20.16	20.11	0.22 [0.15; 1.00]	< .001***
Hippocampal tail, volume	Age, years	84.65	1; 283	84.65	87.17	0.24 [0.17; 1.00]	< .001***
	Sex, male	0.10	1; 283	0.10	0.10	0.00 [0.00; 1.00]	.747
	Diagnostic group	60.06	4; 283	15.01	15.46	0.18 [0.11; 1.00]	< .001***
Entorhinal cortex, volume	Age, years	27.88	1; 283	27.88	28.78	0.09 [0.05; 1.00]	< .001***
	Sex, male	0.27	1; 283	0.27	0.28	0.00 [0.00; 1.00]	.595
	Diagnostic group	40.25	4; 283	10.06	10.39	0.13 [0.07; 1.00]	< .001***
BA35, volume	Age, years	15.53	1; 283	15.53	16.20	0.05 [0.02; 1.00]	< .001***
	Sex, male	2.19	1; 283	2.19	2.28	0.01 [0.00; 1.00]	.132
	Diagnostic group	12.84	4; 283	3.21	3.35	0.05 [0.01; 1.00]	.011*
BA36, volume	Age, years	7.68	1; 283	7.68	6.26	0.02 [0.00; 1.00]	.013*
	Sex, male	2.81	1; 283	2.81	2.29	0.01 [0.00; 1.00]	.131
	Diagnostic group	7.99	4; 283	2.00	1.63	0.02 [0.00; 1.00]	.167
Parahippocampal cortex, volume	Age, years	10.30	1; 283	10.30	7.92	0.03 [0.00; 1.00]	.005**
	Sex, male	1.99	1; 283	1.99	1.53	0.01 [0.00; 1.00]	.217
	Diagnostic group	6.16	4; 283	1.54	1.19	0.02 [0.00; 1.00]	.317
Retrosplenial cortex, average thickness	Age, years	22.19	1; 283	22.19	23.49	0.08 [0.03; 1.00]	< .001***
	Sex, male	0.00	1; 283	0.00	0.00	0.00 [0.00; 1.00]	.966
	Diagnostic group	14.82	4; 283	3.71	3.92	0.05 [0.01; 1.00]	.004**
Posterior cingulate cortex, average thickness	Age, years	9.04	1; 283	9.04	8.76	0.03 [0.01; 1.00]	.003**
	Sex, male	0.81	1; 283	0.81	0.79	0.00 [0.00; 1.00]	.376
	Diagnostic group	5.56	4; 283	1.39	1.35	0.02 [0.00; 1.00]	.253
Precuneus, average thickness	Age, years	26.57	1; 283	26.57	26.60	0.09 [0.04; 1.00]	< .001***
	Sex, male	0.33	1; 283	0.33	0.33	0.00 [0.00; 1.00]	.566
	Diagnostic group	45.70	4; 283	11.43	11.44	0.14 [0.07; 1.00]	< .001***
Inferior parietal cortex, average thickness	Age, years	46.26	1; 283	46.26	43.77	0.13 [0.08; 1.00]	< .001***
	Sex, male	4.19	1; 283	4.19	3.97	0.01 [0.00; 1.00]	.047*
	Diagnostic group	43.96	4; 283	10.99	10.40	0.13 [0.07; 1.00]	< .001***

Abbreviations: BA, Brodmann area. CA, cornu ammonis. CA23DG, cornu ammonis 2, 3, and dentate gyrus. df, degrees of freedom. MS, mean squares. SS, sum of squares.

Supplementary Table 3 Summary statistics for planned *post hoc* diagnostic group comparisons of baseline structural MRI markers.

Marker	Contrast	*b* [95% C.I.]	Sigma	*t*	p_{raw}	p_{FDR}
Amygdala, volume	HC Aβ+ – HC Aβ–	0.07 [–0.62; 0.77]	0.26	0.28	.783	.783
	SCD Aβ+ – HC Aβ–	–0.70 [–1.19; –0.21]	0.19	–3.75	< .001***	< .001***
	MCI Aβ+ – HC Aβ–	–1.57 [–2.13; –1.01]	0.21	–7.40	< .001***	< .001***
	DAT Aβ+ – HC Aβ–	–2.95 [–3.59; –2.31]	0.24	–12.21	< .001***	< .001***
	SCD Aβ+ – HC Aβ+	–0.77 [–1.50; –0.04]	0.28	–2.78	.006**	.007**
	MCI Aβ+ – SCD Aβ+	–0.87 [–1.47; –0.28]	0.23	–3.86	< .001***	< .001***
	DAT Aβ+ – MCI Aβ+	–1.38 [–2.09; –0.67]	0.27	–5.16	< .001***	< .001***
CA1, volume	HC Aβ+ – HC Aβ–	0.36 [–0.23; 0.94]	0.22	1.60	.111	.111
	SCD Aβ+ – HC Aβ–	–0.37 [–0.82; 0.09]	0.17	–2.13	.034*	.047*
	MCI Aβ+ – HC Aβ–	–0.81 [–1.37; –0.25]	0.21	–3.81	< .001***	< .001***
	DAT Aβ+ – HC Aβ–	–1.84 [–2.55; –1.13]	0.27	–6.84	< .001***	< .001***
	SCD Aβ+ – HC Aβ+	–0.72 [–1.36; –0.08]	0.24	–2.99	.003**	.005**
	MCI Aβ+ – SCD Aβ+	–0.44 [–1.05; 0.17]	0.23	–1.91	.057	.067
	DAT Aβ+ – MCI Aβ+	–1.03 [–1.85; –0.21]	0.31	–3.32	.001**	.002**
CA23DG, volume	HC Aβ+ – HC Aβ–	0.00 [–0.54; 0.55]	0.21	0.02	.985	.985
	SCD Aβ+ – HC Aβ–	–0.39 [–0.81; 0.04]	0.16	–2.42	.016*	.038*
	MCI Aβ+ – HC Aβ–	–0.59 [–1.11; –0.07]	0.20	–2.97	.003**	.011*
	DAT Aβ+ – HC Aβ–	–1.18 [–1.84; –0.52]	0.25	–4.70	< .001***	< .001***
	SCD Aβ+ – HC Aβ+	–0.39 [–0.98; 0.20]	0.22	–1.74	.083	.116
	MCI Aβ+ – SCD Aβ+	–0.20 [–0.77; 0.37]	0.22	–0.93	.353	.412
	DAT Aβ+ – MCI Aβ+	–0.59 [–1.35; 0.17]	0.29	–2.04	.042*	.074
Subiculum, volume	HC Aβ+ – HC Aβ–	0.17 [–0.39; 0.73]	0.21	0.81	.419	.419
	SCD Aβ+ – HC Aβ–	–0.43 [–0.86; 0.00]	0.16	–2.65	.009**	.013*
	MCI Aβ+ – HC Aβ–	–0.91 [–1.44; –0.38]	0.20	–4.50	< .001***	< .001***
	DAT Aβ+ – HC Aβ–	–2.03 [–2.71; –1.35]	0.26	–7.94	< .001***	< .001***
	SCD Aβ+ – HC Aβ+	–0.60 [–1.21; 0.00]	0.23	–2.63	.009**	.013*
	MCI Aβ+ – SCD Aβ+	–0.48 [–1.06; 0.10]	0.22	–2.17	.031*	.036*
	DAT Aβ+ – MCI Aβ+	–1.12 [–1.90; –0.34]	0.30	–3.80	< .001***	< .001***
Hippocampal tail, volume	HC Aβ+ – HC Aβ–	–0.08 [–0.63; 0.47]	0.21	–0.38	.703	.703
	SCD Aβ+ – HC Aβ–	–0.37 [–0.79; 0.06]	0.16	–2.30	.022*	.031*
	MCI Aβ+ – HC Aβ–	–0.94 [–1.46; –0.41]	0.20	–4.72	< .001***	< .001***
	DAT Aβ+ – HC Aβ–	–1.73 [–2.40; –1.07]	0.25	–6.90	< .001***	< .001***
	SCD Aβ+ – HC Aβ+	–0.29 [–0.89; 0.31]	0.23	–1.28	.201	.234
	MCI Aβ+ – SCD Aβ+	–0.57 [–1.14; 0.00]	0.22	–2.63	.009**	.016*
	DAT Aβ+ – MCI Aβ+	–0.80 [–1.56; –0.03]	0.29	–2.74	.006**	.015*
Entorhinal cortex, volume	HC Aβ+ – HC Aβ–	0.00 [–0.55; 0.55]	0.21	–0.01	.995	.995
	SCD Aβ+ – HC Aβ–	–0.44 [–0.86; –0.02]	0.16	–2.75	.006**	.015*
	MCI Aβ+ – HC Aβ–	–0.75 [–1.27; –0.22]	0.20	–3.76	< .001***	< .001***
	DAT Aβ+ – HC Aβ–	–1.39 [–2.05; –0.72]	0.25	–5.52	< .001***	< .001***
	SCD Aβ+ – HC Aβ+	–0.44 [–1.03; 0.16]	0.23	–1.95	.052	.073
	MCI Aβ+ – SCD Aβ+	–0.30 [–0.88; 0.27]	0.22	–1.41	.160	.187
	DAT Aβ+ – MCI Aβ+	–0.64 [–1.41; 0.13]	0.29	–2.21	.028*	.049*
BA35, volume	HC Aβ+ – HC Aβ–	0.16 [–0.39; 0.70]	0.21	0.77	.441	.618
	SCD Aβ+ – HC Aβ–	0.05 [–0.37; 0.48]	0.16	0.34	.731	.731
	MCI Aβ+ – HC Aβ–	–0.21 [–0.73; 0.31]	0.20	–1.07	.287	.502
	DAT Aβ+ – HC Aβ–	–0.80 [–1.46; –0.14]	0.25	–3.18	.002**	.011*
	SCD Aβ+ – HC Aβ+	–0.10 [–0.70; 0.49]	0.22	–0.47	.642	.731
	MCI Aβ+ – SCD Aβ+	–0.27 [–0.83; 0.30]	0.22	–1.23	.218	.502
	DAT Aβ+ – MCI Aβ+	–0.58 [–1.35; 0.18]	0.29	–2.03	.044*	.152
Retrosplenial cortex, average thickness	HC Aβ+ – HC Aβ–	–0.12 [–0.67; 0.42]	0.20	–0.60	.546	.637
	SCD Aβ+ – HC Aβ–	–0.12 [–0.54; 0.30]	0.16	–0.76	.448	.627
	MCI Aβ+ – HC Aβ–	–0.45 [–0.97; 0.07]	0.20	–2.31	.022*	.077
	DAT Aβ+ – HC Aβ–	–0.88 [–1.54; –0.22]	0.25	–3.55	< .001***	.003**
	SCD Aβ+ – HC Aβ+	0.00 [–0.58; 0.59]	0.22	0.01	.988	.988
	MCI Aβ+ – SCD Aβ+	–0.33 [–0.90; 0.23]	0.21	–1.55	.122	.238
	DAT Aβ+ – MCI Aβ+	–0.43 [–1.18; 0.33]	0.29	–1.50	.136	.238
Precuneus, average thickness	HC Aβ+ – HC Aβ–	0.40 [–0.15; 0.96]	0.21	1.92	.056	.065
	SCD Aβ+ – HC Aβ–	–0.08 [–0.51; 0.35]	0.16	–0.50	.618	.618
	MCI Aβ+ – HC Aβ–	–0.62 [–1.15; –0.09]	0.20	–3.07	.002**	.008**
	DAT Aβ+ – HC Aβ–	–1.40 [–2.07; –0.73]	0.26	–5.49	< .001***	< .001***
	SCD Aβ+ – HC Aβ+	–0.49 [–1.09; 0.12]	0.23	–2.12	.035*	.048*
	MCI Aβ+ – SCD Aβ+	–0.54 [–1.12; 0.04]	0.22	–2.44	.015*	.027*
	DAT Aβ+ – MCI Aβ+	–0.78 [–1.56; –0.01]	0.29	–2.66	.008**	.019*
Inferior parietal cortex, average thickness	HC Aβ+ – HC Aβ–	0.06 [–0.51; 0.63]	0.22	0.28	.776	.776
	SCD Aβ+ – HC Aβ–	–0.06 [–0.50; 0.38]	0.17	–0.35	.728	.776
	MCI Aβ+ – HC Aβ–	–0.51 [–1.06; 0.04]	0.21	–2.45	.015*	.035*
	DAT Aβ+ – HC Aβ–	–1.57 [–2.27; –0.88]	0.26	–6.00	< .001***	< .001***
	SCD Aβ+ – HC Aβ+	–0.12 [–0.74; 0.50]	0.24	–0.51	.610	.776
	MCI Aβ+ – SCD Aβ+	–0.45 [–1.05; 0.15]	0.23	–1.99	.048*	.084
	DAT Aβ+ – MCI Aβ+	–1.07 [–1.87; –0.27]	0.30	–3.52	< .001***	.002**

Abbreviations: BA, Brodmann area. CA, cornu ammonis. CA23DG, cornu ammonis 2, 3, and dentate gyrus. DAT, dementia of the Alzheimer type. HC, healthy control. MCI, mild cognitive impairment. SCD, subjective cognitive decline.

Supplementary Table 4 Summary statistics of the fixed effects in linear mixed effects models predicting structural MRI markers, derived from linear mixed effects models.

Marker	$R^2_{conditional}$	$R^2_{marginal}$	Predictor	*b* [95% C.I.]	*SE*	*t*	*df*	$\eta^2_{partial}$	*p*
Amygdala, volume	0.99	0.46	Intercept	3.97 [2.32; 5.63]	0.85	4.70	331.03	0.06	< .001***
			Age, years	–0.06 [–0.08; –0.03]	0.01	–4.75	331.01	0.06	< .001***
			Years since baseline	0.12 [–0.05; 0.29]	0.09	1.43	266.74	0.01	.153
			Sex, male	0.12 [–0.15; 0.39]	0.14	0.89	330.92	0.00	.372
			HC Aβ+ diagnosis	0.05 [–0.47; 0.56]	0.26	0.18	330.43	0.00	.857
			SCD Aβ+ diagnosis	–0.71 [–1.07; –0.34]	0.19	–3.81	330.93	0.04	< .001***
			MCI Aβ+ diagnosis	–1.60 [–2.01; –1.18]	0.21	–7.55	331.02	0.15	< .001***
			DAT Aβ+ diagnosis	–2.99 [–3.47; –2.52]	0.24	–12.42	331.55	0.32	< .001***
			Age, years × years since baseline	0.00 [0.00; 0.00]	0.00	–1.87	266.73	0.01	.063
			Sex, male × years since baseline	–0.01 [–0.04; 0.02]	0.01	–0.62	257.62	0.00	.538
			HC Aβ+ diagnosis × years since baseline	–0.07 [–0.12; –0.03]	0.02	–2.99	224.83	0.04	.003**
			SCD Aβ+ diagnosis × years since baseline	–0.05 [–0.09; –0.01]	0.02	–2.70	254.74	0.03	.007**
			MCI Aβ+ diagnosis × years since baseline	–0.11 [–0.16; –0.07]	0.02	–5.19	272.70	0.09	< .001***
			DAT Aβ+ diagnosis × years since baseline	–0.14 [–0.19; –0.08]	0.03	–4.90	347.63	0.06	< .001***
CA1, volume	0.98	0.27	Intercept	2.75 [1.23; 4.27]	0.78	3.55	283.05	0.04	< .001***
			Age, years	–0.04 [–0.06; –0.02]	0.01	–3.51	283.06	0.04	< .001***
			Years since baseline	0.13 [–0.02; 0.28]	0.08	1.64	257.78	0.01	.102
			Sex, male	–0.06 [–0.32; 0.19]	0.13	–0.50	282.87	0.00	.620
			HC Aβ+ diagnosis	0.35 [–0.08; 0.79]	0.22	1.60	282.61	0.01	.110
			SCD Aβ+ diagnosis	–0.37 [–0.71; –0.04]	0.17	–2.17	282.95	0.02	.031*
			MCI Aβ+ diagnosis	–0.83 [–1.25; –0.42]	0.21	–3.94	283.17	0.05	< .001***
			DAT Aβ+ diagnosis	–1.88 [–2.40; –1.35]	0.27	–7.01	283.47	0.15	< .001***
			Age, years × years since baseline	0.00 [0.00; 0.00]	0.00	–1.83	257.06	0.01	.069
			Sex, male × years since baseline	0.00 [–0.03; 0.02]	0.01	–0.27	246.36	0.00	.787
			HC Aβ+ diagnosis × years since baseline	–0.02 [–0.06; 0.02]	0.02	–1.11	229.85	0.01	.269
			SCD Aβ+ diagnosis × years since baseline	–0.02 [–0.05; 0.02]	0.02	–0.99	252.49	0.00	.325
			MCI Aβ+ diagnosis × years since baseline	–0.05 [–0.09; 0.00]	0.02	–2.13	280.11	0.02	.034*
			DAT Aβ+ diagnosis × years since baseline	–0.08 [–0.13; –0.02]	0.03	–2.63	319.87	0.02	.009**
CA23DG, volume	0.98	0.18	Intercept	1.89 [0.47; 3.32]	0.73	2.60	282.85	0.02	.010**
			Age, years	–0.03 [–0.05; –0.01]	0.01	–2.53	282.85	0.02	.012*
			Years since baseline	0.10 [–0.05; 0.25]	0.08	1.33	251.68	0.01	.185
			Sex, male	–0.15 [–0.38; 0.09]	0.12	–1.23	282.67	0.01	.221
			HC Aβ+ diagnosis	–0.02 [–0.43; 0.39]	0.21	–0.09	282.38	0.00	.926
			SCD Aβ+ diagnosis	–0.40 [–0.71; –0.08]	0.16	–2.47	282.74	0.02	.014*
			MCI Aβ+ diagnosis	–0.59 [–0.98; –0.20]	0.20	–2.97	282.98	0.03	.003**
			DAT Aβ+ diagnosis	–1.21 [–1.70; –0.71]	0.25	–4.81	283.30	0.08	< .001***
			Age, years × years since baseline	0.00 [0.00; 0.00]	0.00	–2.19	250.99	0.02	.029*
			Sex, male × years since baseline	0.00 [–0.02; 0.02]	0.01	–0.07	240.30	0.00	.946
			HC Aβ+ diagnosis × years since baseline	–0.01 [–0.04; 0.03]	0.02	–0.28	223.93	0.00	.783
			SCD Aβ+ diagnosis × years since baseline	–0.03 [–0.06; 0.00]	0.02	–1.86	246.51	0.01	.064
			MCI Aβ+ diagnosis × years since baseline	–0.05 [–0.09; –0.01]	0.02	–2.30	273.51	0.02	.022*
			DAT Aβ+ diagnosis × years since baseline	–0.10 [–0.15; –0.04]	0.03	–3.50	313.44	0.04	< .001***
Subiculum, volume	0.99	0.37	Intercept	4.39 [2.95; 5.83]	0.74	5.96	283.27	0.11	< .001***
			Age, years	–0.07 [–0.09; –0.04]	0.01	–6.04	283.27	0.11	< .001***
			Years since baseline	0.17 [0.02; 0.32]	0.08	2.19	252.45	0.02	.029*
			Sex, male	0.19 [–0.05; 0.43]	0.12	1.58	283.09	0.01	.114
			HC Aβ+ diagnosis	0.16 [–0.25; 0.58]	0.21	0.78	282.82	0.00	.435
			SCD Aβ+ diagnosis	–0.44 [–0.76; –0.12]	0.16	–2.70	283.17	0.03	.007**
			MCI Aβ+ diagnosis	–0.91 [–1.31; –0.52]	0.20	–4.55	283.39	0.07	< .001***
			DAT Aβ+ diagnosis	–2.04 [–2.54; –1.54]	0.25	–8.02	283.70	0.18	< .001***
			Age, years × years since baseline	0.00 [–0.01; 0.00]	0.00	–2.67	251.85	0.03	.008**
			Sex, male × years since baseline	–0.01 [–0.03; 0.02]	0.01	–0.74	241.00	0.00	.459
			HC Aβ+ diagnosis × years since baseline	–0.02 [–0.06; 0.03]	0.02	–0.74	224.70	0.00	.463
			SCD Aβ+ diagnosis × years since baseline	–0.05 [–0.08; –0.02]	0.02	–2.91	247.55	0.03	.004**
			MCI Aβ+ diagnosis × years since baseline	–0.07 [–0.11; –0.03]	0.02	–3.13	273.29	0.03	.002**
			DAT Aβ+ diagnosis × years since baseline	–0.12 [–0.17; –0.06]	0.03	–3.93	313.12	0.05	< .001***
	0.97	0.35	Intercept	4.49 [3.08; 5.91]	0.72	6.22	283.33	0.12	< .001***
			Age, years	–0.07 [–0.09; –0.04]	0.01	–6.21	283.35	0.12	< .001***

Hippocampal tail, volume			Years since baseline	0.14 [–0.06; 0.34]	0.10	1.39	247.63	0.01	.165
			Sex, male	–0.04 [–0.27; 0.19]	0.12	–0.34	282.99	0.00	.738
			HC Aβ+ diagnosis	–0.09 [–0.49; 0.31]	0.21	–0.44	282.48	0.00	.660
			SCD Aβ+ diagnosis	–0.35 [–0.67; –0.04]	0.16	–2.22	283.14	0.02	.027*
			MCI Aβ+ diagnosis	–0.95 [–1.34; –0.57]	0.20	–4.83	283.56	0.08	< .001***
			DAT Aβ+ diagnosis	–1.77 [–2.26; –1.28]	0.25	–7.11	284.16	0.15	< .001***
			Age, years × years since baseline	0.00 [–0.01; 0.00]	0.00	–1.57	246.97	0.01	.119
			Sex, male × years since baseline	–0.02 [–0.05; 0.01]	0.02	–1.05	236.29	0.00	.293
			HC Aβ+ diagnosis × years since baseline	–0.01 [–0.07; 0.04]	0.03	–0.50	220.04	0.00	.614
			SCD Aβ+ diagnosis × years since baseline	–0.05 [–0.09; 0.00]	0.02	–2.12	242.57	0.02	.035*
			MCI Aβ+ diagnosis × years since baseline	–0.03 [–0.09; 0.02]	0.03	–1.12	269.10	0.00	.263
			DAT Aβ+ diagnosis × years since baseline	–0.04 [–0.12; 0.03]	0.04	–1.09	308.93	0.00	.276
Entorhinal cortex, volume	0.97	0.24	Intercept	2.23 [0.81; 3.66]	0.72	3.08	283.23	0.03	.002**
			Age, years	–0.03 [–0.05; –0.01]	0.01	–3.10	283.24	0.03	.002**
			Years since baseline	0.25 [0.08; 0.43]	0.09	2.91	253.61	0.03	.004**
			Sex, male	0.08 [–0.16; 0.31]	0.12	0.65	282.98	0.00	.515
			HC Aβ+ diagnosis	–0.03 [–0.44; 0.37]	0.21	–0.17	282.60	0.00	.866
			SCD Aβ+ diagnosis	–0.47 [–0.78; –0.15]	0.16	–2.92	283.09	0.03	.004**
			MCI Aβ+ diagnosis	–0.77 [–1.16; –0.39]	0.20	–3.91	283.40	0.05	< .001***
			DAT Aβ+ diagnosis	–1.42 [–1.91; –0.92]	0.25	–5.65	283.83	0.10	< .001***
			Age, years × years since baseline	0.00 [–0.01; 0.00]	0.00	–2.94	252.92	0.03	.004**
			Sex, male × years since baseline	–0.01 [–0.03; 0.02]	0.01	–0.45	242.20	0.00	.653
			HC Aβ+ diagnosis × years since baseline	–0.07 [–0.12; –0.02]	0.02	–3.01	225.81	0.04	.003**
			SCD Aβ+ diagnosis × years since baseline	–0.05 [–0.08; –0.01]	0.02	–2.42	248.46	0.02	.016*
			MCI Aβ+ diagnosis × years since baseline	–0.08 [–0.13; –0.03]	0.02	–3.30	275.28	0.04	.001**
			DAT Aβ+ diagnosis × years since baseline	–0.17 [–0.24; –0.11]	0.03	–5.24	315.30	0.08	< .001***
BA35, volume	0.97	0.13	Intercept	2.43 [1.01; 3.86]	0.73	3.35	283.14	0.04	< .001***
			Age, years	–0.04 [–0.06; –0.02]	0.01	–3.41	283.15	0.04	< .001***
			Years since baseline	0.19 [0.01; 0.37]	0.09	2.02	258.01	0.02	.044*
			Sex, male	0.15 [–0.09; 0.38]	0.12	1.22	282.88	0.01	.224
			HC Aβ+ diagnosis	0.15 [–0.26; 0.55]	0.21	0.71	282.50	0.00	.478
			SCD Aβ+ diagnosis	0.05 [–0.26; 0.37]	0.16	0.33	283.00	0.00	.745
			MCI Aβ+ diagnosis	–0.22 [–0.61; 0.17]	0.20	–1.11	283.32	0.00	.268
			DAT Aβ+ diagnosis	–0.82 [–1.31; –0.33]	0.25	–3.28	283.76	0.04	.001**
			Age, years × years since baseline	0.00 [–0.01; 0.00]	0.00	–2.29	257.43	0.02	.023*
			Sex, male × years since baseline	–0.01 [–0.04; 0.02]	0.01	–0.39	246.40	0.00	.695
			HC Aβ+ diagnosis × years since baseline	–0.07 [–0.12; –0.02]	0.02	–2.73	229.91	0.03	.007**
			SCD Aβ+ diagnosis × years since baseline	–0.04 [–0.08; 0.00]	0.02	–2.04	253.17	0.02	.043*
			MCI Aβ+ diagnosis × years since baseline	–0.04 [–0.09; 0.01]	0.03	–1.69	278.95	0.01	.093
			DAT Aβ+ diagnosis × years since baseline	–0.16 [–0.22; –0.09]	0.03	–4.49	318.92	0.06	< .001***
BA36, volume	0.99	0.07	Intercept	1.81 [0.21; 3.42]	0.82	2.21	283.03	0.02	.028*
			Age, years	–0.03 [–0.05; 0.00]	0.01	–2.28	283.03	0.02	.023*
			Years since baseline	0.07 [–0.05; 0.20]	0.06	1.13	223.34	0.01	.259
			Sex, male	0.17 [–0.09; 0.44]	0.14	1.27	282.93	0.01	.204
			HC Aβ+ diagnosis	0.17 [–0.29; 0.63]	0.23	0.72	282.77	0.00	.473
			SCD Aβ+ diagnosis	0.05 [–0.31; 0.40]	0.18	0.25	282.97	0.00	.799
			MCI Aβ+ diagnosis	–0.14 [–0.58; 0.29]	0.22	–0.65	283.10	0.00	.519
			DAT Aβ+ diagnosis	–0.62 [–1.18; –0.07]	0.28	–2.19	283.28	0.02	.029*
			Age, years × years since baseline	0.00 [0.00; 0.00]	0.00	–1.47	222.70	0.01	.142
			Sex, male × years since baseline	0.00 [–0.02; 0.02]	0.01	–0.04	212.59	0.00	.968
			HC Aβ+ diagnosis × years since baseline	–0.03 [–0.06; 0.00]	0.02	–1.76	197.24	0.02	.080
			SCD Aβ+ diagnosis × years since baseline	–0.03 [–0.06; –0.01]	0.01	–2.37	218.48	0.03	.019*
			MCI Aβ+ diagnosis × years since baseline	–0.04 [–0.08; –0.01]	0.02	–2.50	244.15	0.03	.013*
			DAT Aβ+ diagnosis × years since baseline	–0.18 [–0.23; –0.13]	0.02	–7.51	282.73	0.17	< .001***
Parahippocampal cortex, volume[1]	0.97	0.07	Intercept	2.22 [0.57; 3.87]	0.84	2.63	283.35	0.02	.009**
			Age, years	–0.03 [–0.06; –0.01]	0.01	–2.68	283.36	0.02	.008**
			Years since baseline	0.05 [–0.12; 0.22]	0.09	0.61	217.77	0.00	.543
			Sex, male	0.15 [–0.13; 0.42]	0.14	1.06	283.13	0.00	.289
			HC Aβ+ diagnosis	0.26 [–0.22; 0.73]	0.24	1.06	282.79	0.00	.288
			SCD Aβ+ diagnosis	–0.01 [–0.37; 0.36]	0.19	–0.05	283.22	0.00	.961
			MCI Aβ+ diagnosis	–0.29 [–0.74; 0.16]	0.23	–1.26	283.50	0.01	.208

			DAT Aβ+ diagnosis	–0.34 [–0.91; 0.23]	0.29	–1.16	283.88	0.00	.246
			Age, years × years since baseline	0.00 [0.00; 0.00]	0.00	–1.16	217.15	0.01	.249
			Sex, male × years since baseline	–0.02 [–0.05; 0.01]	0.01	–1.44	207.41	0.01	.151
			HC Aβ+ diagnosis × years since baseline	0.03 [–0.02; 0.07]	0.02	1.17	192.71	0.01	.243
			SCD Aβ+ diagnosis × years since baseline	–0.01 [–0.05; 0.03]	0.02	–0.49	213.02	0.00	.624
			MCI Aβ+ diagnosis × years since baseline	–0.03 [–0.08; 0.01]	0.02	–1.44	240.06	0.01	.151
			DAT Aβ+ diagnosis × years since baseline	–0.14 [–0.21; –0.08]	0.03	–4.32	274.19	0.06	< .001***
Retrosplenial cortex, average thickness	0.96	0.14	Intercept	2.39 [0.98; 3.81]	0.72	3.31	283.23	0.04	.001**
			Age, years	–0.04 [–0.06; –0.01]	0.01	–3.32	283.23	0.04	.001**
			Years since baseline	0.03 [–0.14; 0.20]	0.09	0.34	251.39	0.00	.734
			Sex, male	–0.01 [–0.24; 0.23]	0.12	–0.04	282.99	0.00	.965
			HC Aβ+ diagnosis	–0.14 [–0.55; 0.26]	0.21	–0.70	282.54	0.00	.483
			SCD Aβ+ diagnosis	–0.08 [–0.40; 0.23]	0.16	–0.53	283.22	0.00	.598
			MCI Aβ+ diagnosis	–0.41 [–0.80; –0.02]	0.20	–2.08	283.30	0.02	.038*
			DAT Aβ+ diagnosis	–0.90 [–1.39; –0.41]	0.25	–3.59	283.93	0.04	< .001***
			Age, years × years since baseline	0.00 [0.00; 0.00]	0.00	–0.72	250.62	0.00	.469
			Sex, male × years since baseline	0.00 [–0.03; 0.03]	0.01	0.03	239.93	0.00	.973
			HC Aβ+ diagnosis × years since baseline	0.01 [–0.04; 0.05]	0.02	0.25	221.92	0.00	.804
			SCD Aβ+ diagnosis × years since baseline	–0.04 [–0.07; 0.00]	0.02	–1.87	249.67	0.01	.063
			MCI Aβ+ diagnosis × years since baseline	–0.06 [–0.11; –0.02]	0.02	–2.67	257.60	0.03	.008**
			DAT Aβ+ diagnosis × years since baseline	–0.16 [–0.22; –0.09]	0.03	–4.90	282.91	0.08	< .001***
Posterior cingulate cortex, average thickness	0.89	0.08	Intercept	1.52 [0.04; 3.00]	0.75	2.01	316.86	0.01	.045*
			Age, years	–0.02 [–0.04; 0.00]	0.01	–1.96	316.85	0.01	.051
			Years since baseline	0.20 [–0.07; 0.47]	0.14	1.45	721.93	0.00	.147
			Sex, male	–0.13 [–0.37; 0.12]	0.12	–1.02	316.17	0.00	.308
			HC Aβ+ diagnosis	0.01 [–0.41; 0.43]	0.21	0.04	314.83	0.00	.971
			SCD Aβ+ diagnosis	–0.11 [–0.44; 0.22]	0.17	–0.66	316.83	0.00	.507
			MCI Aβ+ diagnosis	–0.28 [–0.68; 0.13]	0.21	–1.34	317.07	0.01	.180
			DAT Aβ+ diagnosis	–0.51 [–1.02; 0.00]	0.26	–1.96	318.89	0.01	.051
			Age, years × years since baseline	0.00 [–0.01; 0.00]	0.00	–1.38	722.19	0.00	.169
			Sex, male × years since baseline	–0.02 [–0.06; 0.02]	0.02	–1.01	720.27	0.00	.315
			HC Aβ+ diagnosis × years since baseline	0.02 [–0.05; 0.09]	0.04	0.52	718.77	0.00	.601
			SCD Aβ+ diagnosis × years since baseline	–0.02 [–0.08; 0.04]	0.03	–0.69	721.56	0.00	.490
			MCI Aβ+ diagnosis × years since baseline	–0.05 [–0.13; 0.02]	0.04	–1.40	721.81	0.00	.162
			DAT Aβ+ diagnosis × years since baseline	–0.25 [–0.35; –0.15]	0.05	–4.92	724.29	0.03	< .001***
Precuneus, average thickness	0.94	0.25	Intercept	2.67 [1.22; 4.12]	0.74	3.62	283.22	0.04	< .001***
			Age, years	–0.04 [–0.06; –0.02]	0.01	–3.54	283.21	0.04	< .001***
			Years since baseline	–0.04 [–0.33; 0.26]	0.15	–0.24	265.24	0.00	.814
			Sex, male	–0.12 [–0.36; 0.12]	0.12	–1.01	282.65	0.00	.311
			HC Aβ+ diagnosis	0.40 [–0.01; 0.81]	0.21	1.92	281.63	0.01	.056
			SCD Aβ+ diagnosis	–0.09 [–0.41; 0.22]	0.16	–0.58	283.18	0.00	.564
			MCI Aβ+ diagnosis	–0.62 [–1.02; –0.23]	0.20	–3.10	283.37	0.03	.002**
			DAT Aβ+ diagnosis	–1.38 [–1.88; –0.88]	0.26	–5.39	284.78	0.09	< .001***
			Age, years × years since baseline	0.00 [0.00; 0.00]	0.00	–0.09	264.58	0.00	.925
			Sex, male × years since baseline	–0.04 [–0.09; 0.01]	0.02	–1.69	252.59	0.01	.092
			HC Aβ+ diagnosis × years since baseline	–0.02 [–0.10; 0.06]	0.04	–0.48	234.62	0.00	.631
			SCD Aβ+ diagnosis × years since baseline	–0.10 [–0.17; –0.04]	0.03	–3.10	262.36	0.04	.002**
			MCI Aβ+ diagnosis × years since baseline	–0.11 [–0.20; –0.03]	0.04	–2.78	270.59	0.03	.006**
			DAT Aβ+ diagnosis × years since baseline	–0.32 [–0.43; –0.22]	0.06	–5.89	298.62	0.10	< .001***
Infertior parietal cortex, average thickness	0.93	0.30	Intercept	3.86 [2.35; 5.36]	0.77	5.03	283.37	0.08	< .001***
			Age, years	–0.05 [–0.08; –0.03]	0.01	–4.87	283.36	0.08	< .001***
			Years since baseline	–0.03 [–0.38; 0.32]	0.18	–0.16	275.11	0.00	.870
			Sex, male	–0.28 [–0.53; –0.03]	0.13	–2.19	282.65	0.02	.029*
			HC Aβ+ diagnosis	0.07 [–0.36; 0.50]	0.22	0.32	281.39	0.00	.749
			SCD Aβ+ diagnosis	–0.06 [–0.39; 0.27]	0.17	–0.36	283.31	0.00	.716
			MCI Aβ+ diagnosis	–0.52 [–0.93; –0.11]	0.21	–2.47	283.55	0.02	.014*
			DAT Aβ+ diagnosis	–1.51 [–2.03; –0.99]	0.27	–5.68	285.32	0.10	< .001***
			Age, years × years since baseline	0.00 [–0.01; 0.00]	0.00	–0.20	274.50	0.00	.844
			Sex, male × years since baseline	–0.03 [–0.08; 0.03]	0.03	–0.90	262.07	0.00	.367

			HC Aβ+ diagnosis × years since baseline	0.00 [–0.10; 0.09]	0.05	–0.10	243.96	0.00	.919
			SCD Aβ+ diagnosis × years since baseline	–0.15 [–0.23; –0.08]	0.04	–3.90	272.01	0.05	< .001***
			MCI Aβ+ diagnosis × years since baseline	–0.16 [–0.25; –0.06]	0.05	–3.17	280.32	0.03	.002**
			DAT Aβ+ diagnosis × years since baseline	–0.52 [–0.65; –0.39]	0.07	–8.00	308.72	0.17	< .001***

[1]Fitted without random slopes due to insufficient variance in random slope estimates.

Abbreviations: AMY, amygdala. BA, Brodmann area. CA, cornu ammonis. CA23DG, cornu ammonis 2, 3, and dentate gyrus. DAT, dementia of the Alzheimer type. ERC, entorhinal cortex. HC, healthy control. IPC, inferior parietal cortex. MCI, mild cognitive impairment. PCC, posterior cingulate cortex. PHC, parahippocampal cortex. PRE, precuneus. RSC, retrosplenial cortex. SCD, subjective cognitive decline. SUB, subiculum. TAIL, hippocampal tail.

Supplementary Table 5 Estimated marginal means of the linear fixed effect of years since baseline on structural MRI markers for each diagnostic group, derived from linear mixed effects models.

Marker	Diagnostic group	*b* [95% C.I.]	*SE*	*t*	*df*	$\eta^2_{partial}$	*p*
Amygdala, volume	HC Aβ–	–0.05 [–0.07; –0.03]	0.01	–4.74	257.94	0.08	< .001***
	HC Aβ +	–0.12 [–0.17; –0.08]	0.02	–5.46	247.84	0.11	< .001***
	SCD Aβ +	–0.10 [–0.13; –0.07]	0.01	–6.58	294.48	0.13	< .001***
	MCI Aβ +	–0.16 [–0.20; –0.12]	0.02	–8.67	310.15	0.20	< .001***
	DAT Aβ +	–0.18 [–0.23; –0.14]	0.03	–7.30	408.62	0.12	< .001***
CA1, volume	HC Aβ–	–0.02 [–0.04; 0.00]	0.01	–2.45	223.69	0.03	.015*
	HC Aβ +	–0.04 [–0.08; –0.01]	0.02	–2.32	224.92	0.02	.021*
	SCD Aβ +	–0.04 [–0.06; –0.01]	0.01	–2.58	258.92	0.03	.010*
	MCI Aβ +	–0.07 [–0.10; –0.03]	0.02	–3.36	283.99	0.04	< .001***
	DAT Aβ +	–0.10 [–0.15; –0.04]	0.03	–3.49	324.38	0.04	< .001***
CA23DG, volume	HC Aβ–	–0.07 [–0.09; –0.05]	0.01	–8.67	224.76	0.25	< .001***
	HC Aβ +	–0.08 [–0.11; –0.04]	0.02	–4.17	226.03	0.07	< .001***
	SCD Aβ +	–0.10 [–0.13; –0.07]	0.01	–7.22	260.35	0.17	< .001***
	MCI Aβ +	–0.12 [–0.16; –0.08]	0.02	–6.17	284.96	0.12	< .001***
	DAT Aβ +	–0.17 [–0.22; –0.12]	0.03	–6.27	325.70	0.11	< .001***
Subiculum, volume	HC Aβ–	–0.05 [–0.06; –0.03]	0.01	–5.71	227.59	0.13	< .001***
	HC Aβ +	–0.06 [–0.10; –0.03]	0.02	–3.36	229.01	0.05	< .001***
	SCD Aβ +	–0.10 [–0.13; –0.07]	0.01	–6.77	263.99	0.15	< .001***
	MCI Aβ +	–0.12 [–0.16; –0.08]	0.02	–5.86	287.17	0.11	< .001***
	DAT Aβ +	–0.16 [–0.22; –0.11]	0.03	–5.86	328.03	0.09	< .001***
Hippocampal tail, volume	HC Aβ–	–0.03 [–0.05; –0.01]	0.01	–2.83	225.33	0.03	.005**
	HC Aβ +	–0.04 [–0.09; 0.00]	0.02	–1.82	226.62	0.01	.070
	SCD Aβ +	–0.08 [–0.12; –0.04]	0.02	–4.15	261.11	0.06	< .001***
	MCI Aβ +	–0.06 [–0.11; –0.01]	0.03	–2.42	285.47	0.02	.016*
	DAT Aβ +	–0.07 [–0.14; 0.00]	0.04	–2.00	326.34	0.01	.047*
Entorhinal cortex, volume	HC Aβ–	–0.01 [–0.03; 0.00]	0.01	–1.44	225.36	0.01	.150
	HC Aβ +	–0.08 [–0.13; –0.04]	0.02	–3.97	226.65	0.06	< .001***
	SCD Aβ +	–0.06 [–0.09; –0.03]	0.02	–3.70	261.14	0.05	< .001***
	MCI Aβ +	–0.09 [–0.14; –0.05]	0.02	–4.22	285.48	0.06	< .001***
	DAT Aβ +	–0.19 [–0.25; –0.12]	0.03	–5.94	326.35	0.10	< .001***
BA35, volume	HC Aβ–	–0.03 [–0.05; –0.01]	0.01	–3.36	228.50	0.05	< .001***
	HC Aβ +	–0.10 [–0.15; –0.06]	0.02	–4.51	230.08	0.08	< .001***
	SCD Aβ +	–0.08 [–0.11; –0.04]	0.02	–4.37	265.53	0.07	< .001***
	MCI Aβ +	–0.08 [–0.12; –0.03]	0.02	–3.28	288.40	0.04	.001**
	DAT Aβ +	–0.19 [–0.25; –0.13]	0.03	–5.74	329.24	0.09	< .001***
BA36, volume	HC Aβ–	–0.02 [–0.04; –0.01]	0.01	–3.60	224.66	0.05	< .001***
	HC Aβ +	–0.05 [–0.08; –0.02]	0.02	–3.55	225.93	0.05	< .001***
	SCD Aβ +	–0.06 [–0.08; –0.03]	0.01	–4.89	260.22	0.08	< .001***
	MCI Aβ +	–0.07 [–0.10; –0.04]	0.02	–4.26	284.88	0.06	< .001***
	DAT Aβ +	–0.20 [–0.25; –0.16]	0.02	–8.97	325.56	0.20	< .001***
Parahippocampal cortex, volume[1]	HC Aβ–	–0.06 [–0.08; –0.04]	0.01	–6.51	218.75	0.16	< .001***
	HC Aβ +	–0.03 [–0.07; 0.01]	0.02	–1.61	220.15	0.01	.109
	SCD Aβ +	–0.07 [–0.10; –0.04]	0.02	–4.31	252.56	0.07	< .001***
	MCI Aβ +	–0.09 [–0.14; –0.05]	0.02	–4.27	279.03	0.06	< .001***
	DAT Aβ +	–0.20 [–0.26; –0.14]	0.03	–6.42	314.76	0.12	< .001***
Retrosplenial cortex, average thickness	HC Aβ–	–0.04 [–0.05; –0.02]	0.01	–3.76	228.92	0.06	< .001***
	HC Aβ +	–0.03 [–0.07; 0.01]	0.02	–1.42	223.58	0.01	.157
	SCD Aβ +	–0.07 [–0.10; –0.04]	0.02	–4.42	262.97	0.07	< .001***
	MCI Aβ +	–0.10 [–0.14; –0.06]	0.02	–4.58	264.02	0.07	< .001***
	DAT Aβ +	–0.19 [–0.25; –0.13]	0.03	–6.32	291.34	0.12	< .001***
Posterior cingulate cortex, average thickness	HC Aβ–	–0.01 [–0.04; 0.02]	0.01	–0.46	717.73	0.00	.647
	HC Aβ +	0.01 [–0.05; 0.08]	0.03	0.37	718.61	0.00	.710
	SCD Aβ +	–0.03 [–0.08; 0.02]	0.03	–1.09	722.76	0.00	.278
	MCI Aβ +	–0.06 [–0.13; 0.01]	0.03	–1.74	721.88	0.00	.081
	DAT Aβ +	–0.26 [–0.35; –0.16]	0.05	–5.32	724.34	0.04	< .001***
Precuneus, average thickness	HC Aβ–	–0.07 [–0.10; –0.04]	0.02	–4.32	235.45	0.07	< .001***
	HC Aβ +	–0.09 [–0.16; –0.02]	0.04	–2.47	230.97	0.03	.014*
	SCD Aβ +	–0.17 [–0.23; –0.12]	0.03	–6.25	270.64	0.13	< .001***
	MCI Aβ +	–0.19 [–0.26; –0.11]	0.04	–4.97	271.80	0.08	< .001***
	DAT Aβ +	–0.40 [–0.50; –0.29]	0.05	–7.57	301.82	0.16	< .001***
Inferior parietal cortex, average thickness	HC Aβ–	–0.08 [–0.12; –0.04]	0.02	–4.04	236.49	0.06	< .001***
	HC Aβ +	–0.08 [–0.17; 0.00]	0.04	–1.93	232.22	0.02	.055
	SCD Aβ +	–0.23 [–0.30; –0.17]	0.03	–7.05	271.66	0.15	< .001***
	MCI Aβ +	–0.23 [–0.32; –0.15]	0.04	–5.29	272.78	0.09	< .001***
	DAT Aβ +	–0.60 [–0.72; –0.48]	0.06	–9.72	302.80	0.24	< .001***

[1]Fitted without random slopes due to insufficient variance in random slope estimates.

Abbreviations: AMY, amygdala. BA, Brodmann area. CA, cornu ammonis. CA23DG, cornu ammonis 2, 3, and dentate gyrus. DAT, dementia of the Alzheimer type. ERC, entorhinal cortex. HC, healthy control. IPC, inferior parietal cortex. MCI, mild cognitive impairment. PCC, posterior cingulate cortex. PHC, parahippocampal cortex. PRE, precuneus. RSC, retrosplenial cortex. SCD, subjective cognitive decline. SUB, subiculum. TAIL, hippocampal tail.

Supplementary Table 6 Pairwise contrasts of diagnostic groups for estimated marginal means of the linear fixed effect of years since baseline on structural MRI markers, derived from linear mixed-effects models.

Marker	Contrast	*b* [95% C.I.]	*SE*	*t*	*df*	$\eta^2_{partial}$	*p*
Amygdala, volume	HC Aβ+ *versus* HC Aβ –	–0.07 [–0.12; –0.03]	0.02	–2.99	248.12	0.03	.003**
	SCD Aβ + *versus* HC Aβ –	–0.05 [–0.09; –0.01]	0.02	–2.69	279.61	0.03	.007**
	MCI Aβ + *versus* HC Aβ –	–0.11 [–0.16; –0.07]	0.02	–5.18	298.31	0.08	< .001***
	DAT Aβ + *versus* HC Aβ –	–0.14 [–0.19; –0.08]	0.03	–4.89	375.01	0.06	< .001***
	SCD Aβ + *versus* HC Aβ +	0.02 [–0.03; 0.08]	0.03	0.88	261.33	0.00	.379
	MCI Aβ + *versus* SCD Aβ +	–0.06 [–0.11; –0.02]	0.02	–2.66	304.10	0.02	.008**
	DAT Aβ + *versus* MCI Aβ +	–0.02 [–0.08; 0.04]	0.03	–0.75	374.25	0.00	.451
CA1, volume	HC Aβ+ *versus* HC Aβ –	–0.02 [–0.06; 0.02]	0.02	–1.11	223.84	0.01	.269
	SCD Aβ + *versus* HC Aβ –	–0.02 [–0.05; 0.02]	0.02	–0.98	246.34	0.00	.326
	MCI Aβ + *versus* HC Aβ –	–0.05 [–0.09; 0.00]	0.02	–2.13	273.69	0.02	.034*
	DAT Aβ + *versus* HC Aβ –	–0.08 [–0.13; –0.02]	0.03	–2.62	313.32	0.02	.009**
	SCD Aβ + *versus* HC Aβ +	0.01 [–0.04; 0.05]	0.02	0.26	237.49	0.00	.795
	MCI Aβ + *versus* SCD Aβ +	–0.03 [–0.08; 0.02]	0.02	–1.22	277.33	0.01	.225
	DAT Aβ + *versus* MCI Aβ +	–0.03 [–0.10; 0.04]	0.03	–0.91	309.03	0.00	.365
CA23DG, volume	HC Aβ+ *versus* HC Aβ –	–0.01 [–0.04; 0.03]	0.02	–0.28	224.97	0.00	.783
	SCD Aβ + *versus* HC Aβ –	–0.03 [–0.06; 0.00]	0.02	–1.86	247.61	0.01	.064
	MCI Aβ + *versus* HC Aβ –	–0.05 [–0.09; –0.01]	0.02	–2.30	274.61	0.02	.022*
	DAT Aβ + *versus* HC Aβ –	–0.10 [–0.16; –0.04]	0.03	–3.49	314.54	0.04	< .001***
	SCD Aβ + *versus* HC Aβ +	–0.03 [–0.07; 0.02]	0.02	–1.11	238.69	0.01	.268
	MCI Aβ + *versus* SCD Aβ +	–0.02 [–0.06; 0.03]	0.02	–0.75	278.51	0.00	.453
	DAT Aβ + *versus* MCI Aβ +	–0.05 [–0.11; 0.01]	0.03	–1.55	310.25	0.01	.122
Subiculum, volume	HC Aβ+ *versus* HC Aβ –	–0.02 [–0.06; 0.03]	0.02	–0.73	227.97	0.00	.463
	SCD Aβ + *versus* HC Aβ –	–0.05 [–0.08; –0.02]	0.02	–2.91	250.87	0.03	.004**
	MCI Aβ + *versus* HC Aβ –	–0.07 [–0.11; –0.03]	0.02	–3.13	276.79	0.03	.002**
	DAT Aβ + *versus* HC Aβ –	–0.12 [–0.17; –0.06]	0.03	–3.92	316.77	0.05	< .001***
	SCD Aβ + *versus* HC Aβ +	–0.03 [–0.08; 0.01]	0.02	–1.46	241.86	0.01	.145
	MCI Aβ + *versus* SCD Aβ +	–0.02 [–0.07; 0.03]	0.02	–0.75	281.32	0.00	.452
	DAT Aβ + *versus* MCI Aβ +	–0.05 [–0.11; 0.02]	0.03	–1.38	312.60	0.01	.169
Hippocampal tail, volume	HC Aβ+ *versus* HC Aβ –	–0.01 [–0.07; 0.04]	0.03	–0.50	225.56	0.00	.614
	SCD Aβ + *versus* HC Aβ –	–0.05 [–0.09; 0.00]	0.02	–2.12	248.28	0.02	.035*
	MCI Aβ + *versus* HC Aβ –	–0.03 [–0.09; 0.02]	0.03	–1.12	275.09	0.00	.263
	DAT Aβ + *versus* HC Aβ –	–0.04 [–0.12; 0.03]	0.04	–1.09	315.14	0.00	.277
	SCD Aβ + *versus* HC Aβ +	–0.03 [–0.09; 0.03]	0.03	–1.09	239.33	0.00	.275
	MCI Aβ + *versus* SCD Aβ +	0.02 [–0.05; 0.08]	0.03	0.48	279.13	0.00	.629
	DAT Aβ + *versus* MCI Aβ +	–0.01 [–0.10; 0.08]	0.04	–0.22	310.86	0.00	.824
Entorhinal cortex, volume	HC Aβ+ *versus* HC Aβ –	–0.07 [–0.12; –0.02]	0.02	–3.01	225.59	0.04	.003**
	SCD Aβ + *versus* HC Aβ –	–0.05 [–0.08; –0.01]	0.02	–2.42	248.31	0.02	.016*
	MCI Aβ + *versus* HC Aβ –	–0.08 [–0.13; –0.03]	0.02	–3.29	275.10	0.04	.001**
	DAT Aβ + *versus* HC Aβ –	–0.17 [–0.24; –0.11]	0.03	–5.23	315.14	0.08	< .001***
	SCD Aβ + *versus* HC Aβ +	0.02 [–0.03; 0.08]	0.03	0.90	239.35	0.00	.369
	MCI Aβ + *versus* SCD Aβ +	–0.03 [–0.09; 0.02]	0.03	–1.25	279.14	0.01	.211
	DAT Aβ + *versus* MCI Aβ +	–0.09 [–0.17; –0.02]	0.04	–2.42	310.86	0.02	.016*
BA35, volume	HC Aβ+ *versus* HC Aβ –	–0.07 [–0.12; –0.02]	0.02	–2.73	229.00	0.03	.007**
	SCD Aβ + *versus* HC Aβ –	–0.04 [–0.08; 0.00]	0.02	–2.03	252.20	0.02	.043*
	MCI Aβ + *versus* HC Aβ –	–0.04 [–0.09; 0.01]	0.03	–1.68	277.97	0.01	.093
	DAT Aβ + *versus* HC Aβ –	–0.16 [–0.22; –0.09]	0.03	–4.48	317.93	0.06	< .001***
	SCD Aβ + *versus* HC Aβ +	0.03 [–0.03; 0.08]	0.03	0.94	243.11	0.00	.349
	MCI Aβ + *versus* SCD Aβ +	0.00 [–0.06; 0.05]	0.03	–0.08	282.71	0.00	.940
	DAT Aβ + *versus* MCI Aβ +	–0.11 [–0.19; –0.03]	0.04	–2.80	313.81	0.02	.005**
BA36, volume	HC Aβ+ *versus* HC Aβ –	–0.03 [–0.06; 0.00]	0.02	–1.76	224.86	0.01	.080
	SCD Aβ + *versus* HC Aβ –	–0.03 [–0.06; –0.01]	0.01	–2.37	247.49	0.02	.019*
	MCI Aβ + *versus* HC Aβ –	–0.04 [–0.08; –0.01]	0.02	–2.50	274.53	0.02	.013*
	DAT Aβ + *versus* HC Aβ –	–0.18 [–0.23; –0.13]	0.02	–7.50	314.41	0.15	< .001***
	SCD Aβ + *versus* HC Aβ +	0.00 [–0.04; 0.03]	0.02	–0.17	238.58	0.00	.864
	MCI Aβ + *versus* SCD Aβ +	–0.01 [–0.05; 0.03]	0.02	–0.58	278.40	0.00	.564
	DAT Aβ + *versus* MCI Aβ +	–0.13 [–0.19; –0.08]	0.03	–4.90	310.12	0.07	< .001***
Parahippocampal cortex, volume[1]	HC Aβ+ *versus* HC Aβ –	0.03 [–0.02; 0.07]	0.02	1.17	218.87	0.01	.243
	SCD Aβ + *versus* HC Aβ –	–0.01 [–0.05; 0.03]	0.02	–0.49	240.66	0.00	.625
	MCI Aβ + *versus* HC Aβ –	–0.03 [–0.08; 0.01]	0.02	–1.44	269.19	0.01	.151
	DAT Aβ + *versus* HC Aβ –	–0.14 [–0.21; –0.08]	0.03	–4.31	304.65	0.06	< .001***
	SCD Aβ + *versus* HC Aβ +	–0.04 [–0.09; 0.01]	0.03	–1.39	232.34	0.01	.167
	MCI Aβ + *versus* SCD Aβ +	–0.03 [–0.08; 0.03]	0.03	–0.95	271.62	0.00	.344
	DAT Aβ + *versus* MCI Aβ +	–0.11 [–0.18; –0.03]	0.04	–2.82	300.99	0.03	.005**
Retrosplenial cortex, average thickness	HC Aβ+ *versus* HC Aβ –	0.01 [–0.04; 0.05]	0.02	0.25	223.17	0.00	.804
	SCD Aβ + *versus* HC Aβ –	–0.04 [–0.07; 0.00]	0.02	–1.86	251.07	0.01	.064
	MCI Aβ + *versus* HC Aβ –	–0.06 [–0.11; –0.02]	0.02	–2.67	259.02	0.03	.008**
	DAT Aβ + *versus* HC Aβ –	–0.16 [–0.22; –0.09]	0.03	–4.89	284.46	0.08	< .001***
	SCD Aβ + *versus* HC Aβ +	–0.04 [–0.09; 0.01]	0.03	–1.58	238.07	0.01	.115
	MCI Aβ + *versus* SCD Aβ +	–0.03 [–0.08; 0.02]	0.03	–1.06	264.23	0.00	.289
	DAT Aβ + *versus* MCI Aβ +	–0.09 [–0.17; –0.02]	0.04	–2.54	280.32	0.02	.012*
Posterior cingulate cortex, average thickness	HC Aβ+ *versus* HC Aβ –	0.02 [–0.05; 0.09]	0.04	0.52	718.32	0.00	.601
	SCD Aβ + *versus* HC Aβ –	–0.02 [–0.08; 0.04]	0.03	–0.69	721.12	0.00	.490
	MCI Aβ + *versus* HC Aβ –	–0.05 [–0.13; 0.02]	0.04	–1.40	721.37	0.00	.162
	DAT Aβ + *versus* HC Aβ –	–0.25 [–0.35; –0.15]	0.05	–4.92	723.85	0.03	< .001***
	SCD Aβ + *versus* HC Aβ +	–0.04 [–0.12; 0.04]	0.04	–0.97	720.35	0.00	.334

	MCI Aβ + *versus* SCD Aβ +	–0.03 [–0.11; 0.05]	0.04	–0.76	722.51	0.00	.445
	DAT Aβ + *versus* MCI Aβ +	–0.20 [–0.31; –0.08]	0.06	–3.39	723.55	0.02	< .001***
Precuneus, average thickness	HC Aβ+ *versus* HC Aβ –	–0.02 [–0.10; 0.06]	0.04	–0.48	230.59	0.00	.632
	SCD Aβ + *versus* HC Aβ –	–0.10 [–0.17; –0.04]	0.03	–3.10	258.21	0.04	.002**
	MCI Aβ + *versus* HC Aβ –	–0.11 [–0.20; –0.03]	0.04	–2.77	266.38	0.03	.006**
	DAT Aβ + *versus* HC Aβ –	–0.32 [–0.43; –0.22]	0.06	–5.88	294.35	0.11	< .001***
	SCD Aβ + *versus* HC Aβ +	–0.08 [–0.17; 0.01]	0.05	–1.83	245.29	0.01	.069
	MCI Aβ + *versus* SCD Aβ +	–0.01 [–0.10; 0.08]	0.05	–0.27	272.25	0.00	.788
	DAT Aβ + *versus* MCI Aβ +	–0.21 [–0.33; –0.09]	0.06	–3.32	289.78	0.04	.001**
Inferior parietal cortex, average thickness	HC Aβ+ *versus* HC Aβ –	0.00 [–0.10; 0.09]	0.05	–0.10	231.83	0.00	.920
	SCD Aβ + *versus* HC Aβ –	–0.15 [–0.23; –0.08]	0.04	–3.89	259.20	0.06	< .001***
	MCI Aβ + *versus* HC Aβ –	–0.16 [–0.25; –0.06]	0.05	–3.17	267.36	0.04	.002**
	DAT Aβ + *versus* HC Aβ –	–0.52 [–0.65; –0.39]	0.07	–7.99	295.33	0.18	< .001***
	SCD Aβ + *versus* HC Aβ +	–0.15 [–0.25; –0.04]	0.05	–2.74	246.43	0.03	.007**
	MCI Aβ + *versus* SCD Aβ +	0.00 [–0.11; 0.10]	0.05	–0.05	273.29	0.00	.959
	DAT Aβ + *versus* MCI Aβ +	–0.37 [–0.51; –0.22]	0.08	–4.89	290.78	0.08	< .001***

[1]Fitted without random slopes due to insufficient variance in random slope estimates.

Abbreviations: AMY, amygdala. BA, Brodmann area. CA, cornu ammonis. CA23DG, cornu ammonis 2, 3, and dentate gyrus. DAT, dementia of the Alzheimer type. ERC, entorhinal cortex. HC, healthy control. IPC, inferior parietal cortex. MCI, mild cognitive impairment. PCC, posterior cingulate cortex. PHC, parahippocampal cortex. PRE, precuneus. RSC, retrosplenial cortex. SCD, subjective cognitive decline. SUB, subiculum. TAIL, hippocampal tail.