

Supplementary Table 2 Demographic, clinical and imaging data of participants included in the whole-brain fixel-based analysis

		AD (<i>n</i> = 27)	LATE (<i>n</i> =18)	Controls (<i>n</i> =19)	Statistics
<i>Demographics</i>	Age, years (SD)	70.3 (7.0)	77.2 (5.4)*	68.3 (4.6)	$F = 11.1$ $P < 0.01$
	Males (%)	13 (48)	12 (67) [#]	6 (32)	$\chi^2 = 12.1$ $P < 0.01$
	Years of education (SD)	14.6 (4.4)	14.4 (4.5)	14.6 (3.0)	$F = 0.0$ $P = 0.98$
<i>Functional Status</i>	CDR (SD)	0.6 (0.2)	0.8 (0.4)	0.0 (0.0)*	$F = 49.0$ $P < 0.001$
<i>Global Cognitive Efficiency</i>	MMSE (SD)	23.4 (3.6)	24.4 (3.0)	29.1 (0.8)*	$F = 22.1$ $P < 0.001$
<i>Verbal episodic memory</i>	FCSRT - Free recall (SD)	11.7 (8.6)	9.7 (5.6)	33.8 (4.6)*	$F = 73.2$ $P < 0.001$
	FCSRT - Total recall (SD)	27.2 (11.4)	27.0 (11.2)	47.2 (1.0)*	$F = 28.1$ $P < 0.001$
<i>Visual episodic memory</i>	Rey memory (SD)	8.4 (5.2)	8.2 (6.8)	18.8 (5.7)*	$F = 19.5$ $P < 0.001$
<i>CSF biomarkers (lumbar puncture)</i>	Ratio p-tau/A β_{42}	0.19 (0.08)	0.05 (0.01)	-	$T = 7.2$ $P < 0.001$
<i>Molecular PET imaging</i>	Amyloid PET SUVR GCI ^a (SD)	2.78 (0.62)*	1.40 (0.25)	1.28 (0.10)	$F = 76.0$ $P < 0.001$
	Tau PET SUVR in a temporal meta-VOI ^b (SD)	2.10 (0.67)*	1.20 (0.10)	1.22 (0.13)	$F = 13.5$ $P < 0.001$
<i>MRI</i>	IC volume (SD)	1576 (145)	1695 (182) [†]	1607 (116)	$F = 3.3$ $P = 0.04$
	Hipp volume (SD)	1.96 (0.31)	1.75 (0.34)	2.46 (0.22)*	$F = 27.8$ $P < 0.001$
	Fazekas score (0/1/2/3)	15/8/3/1	7/9/1/1	12/6/0/0	-

Mean values (standard deviation) or number (%) are presented for each data.

AD: Alzheimer's disease, CDR : Clinical Dementia Rating scale, MMSE: Mini-Mental State Examination, FCSRT: Free and Cued Selective Reminding Test, p-tau: phosphorylated tau, A β_{42} : amyloid- β_{42} , GCI: Global Cortical Index, IC volume: intracranial volume in cm³, Hipp volume: hippocampal volumes in cm³.

Statistics report *P*-value from one-way between-groups ANOVA for continuous variable, and chi-square test for independence for categorical variables. Post-hoc Tukey honest significance difference tests were then performed to compare each group with the others. As controls did not undergo lumbar puncture, two-sided *T*-tests were performed instead ANOVA for CSF biomarkers.

**P* < 0.05 vs the other groups (assessed with 2 post-hoc Tukey honest significance difference tests)

[#]*P* < 0.05 vs the control group

[†]*P* < 0.05 vs the AD group

^aMissing data for 2 AD patients and 3 control subjects

^bMissing data for 3 AD patients, 1 LATE patient and 3 control subjects / temporal meta-VOI composed of the entorhinal cortex, parahippocampus, fusiform gyri, inferior and middle temporal cortices