

Supplementary Table 01

Domain	Predictor	$\beta \pm SE$ (All)	p (All)	$\beta \pm SE$ (EOAD)	p (EOAD)
Memory	HC Tangles	-0.018 ± 0.006	0.010	-0.014 ± 0.006	0.034
	MF Tangles	-0.006 ± 0.010	0.531	-0.007 ± 0.009	0.466
	OC Tangles	0.010 ± 0.010	0.340	0.012 ± 0.012	0.313
	MF/HC Ratio	0.505 ± 0.276	0.075	0.278 ± 0.297	0.358
	OC/HC Ratio	0.573 ± 0.241	0.023	0.630 ± 0.232	0.012
	OC/MF Ratio	0.317 ± 0.207	0.134	0.399 ± 0.235	0.102
Executive	HC Tangles	0.015 ± 0.012	0.201	0.018 ± 0.009	0.049
	MF Tangles	-0.038 ± 0.015	0.019	-0.033 ± 0.012	0.010
	OC Tangles	-0.003 ± 0.018	0.867	-0.014 ± 0.016	0.419
	MF/HC Ratio	-1.163 ± 0.438	0.012	-1.186 ± 0.356	0.003
	OC/HC Ratio	-0.522 ± 0.451	0.255	-0.629 ± 0.353	0.087
	OC/MF Ratio	0.326 ± 0.374	0.390	0.214 ± 0.349	0.546
Visuospatial	HC Tangles	0.010 ± 0.013	0.453	0.007 ± 0.013	0.594
	MF Tangles	-0.006 ± 0.018	0.759	-0.003 ± 0.019	0.891
	OC Tangles	-0.050 ± 0.017	0.007	-0.060 ± 0.020	0.005
	MF/HC Ratio	-0.329 ± 0.520	0.531	-0.218 ± 0.594	0.717
	OC/HC Ratio	-1.105 ± 0.468	0.024	-1.288 ± 0.454	0.009
	OC/MF Ratio	-0.927 ± 0.384	0.021	-1.218 ± 0.425	0.008

Table S1: Association of regional tangle burden and cognitive performance adjusted for APOE genotype and TDP-43 proteinopathy

Standardized regression coefficients (β) and p-values from linear regression models examining the association between neurofibrillary tangle (NFT) density (tangles per high-power field, /HPF) in the hippocampus (HC), middle frontal gyrus (MF), and occipital cortex (OC), and NFT density ratios (MF/HC, OC/HC, OC/MF), with composite scores for Memory, Executive, and Visuospatial cognitive domains. Cognitive composites were derived from principal component analysis of 16 neuropsychological tests administered at baseline (**Table 2**). All models were adjusted for age at assessment, sex, education, the interval between the baseline assessment and death (years), as well as the APOE $\epsilon 4$ carrier status (≥ 1 $\epsilon 4$ allele) and TDP-43 status (any LATE stage vs none). Compare to Table 3 (unadjusted for APOE or TDP-43). Results are shown separately for the full cohort (early onset AD and posterior cortical atrophy combined) and for participants with early onset (typical) AD only.