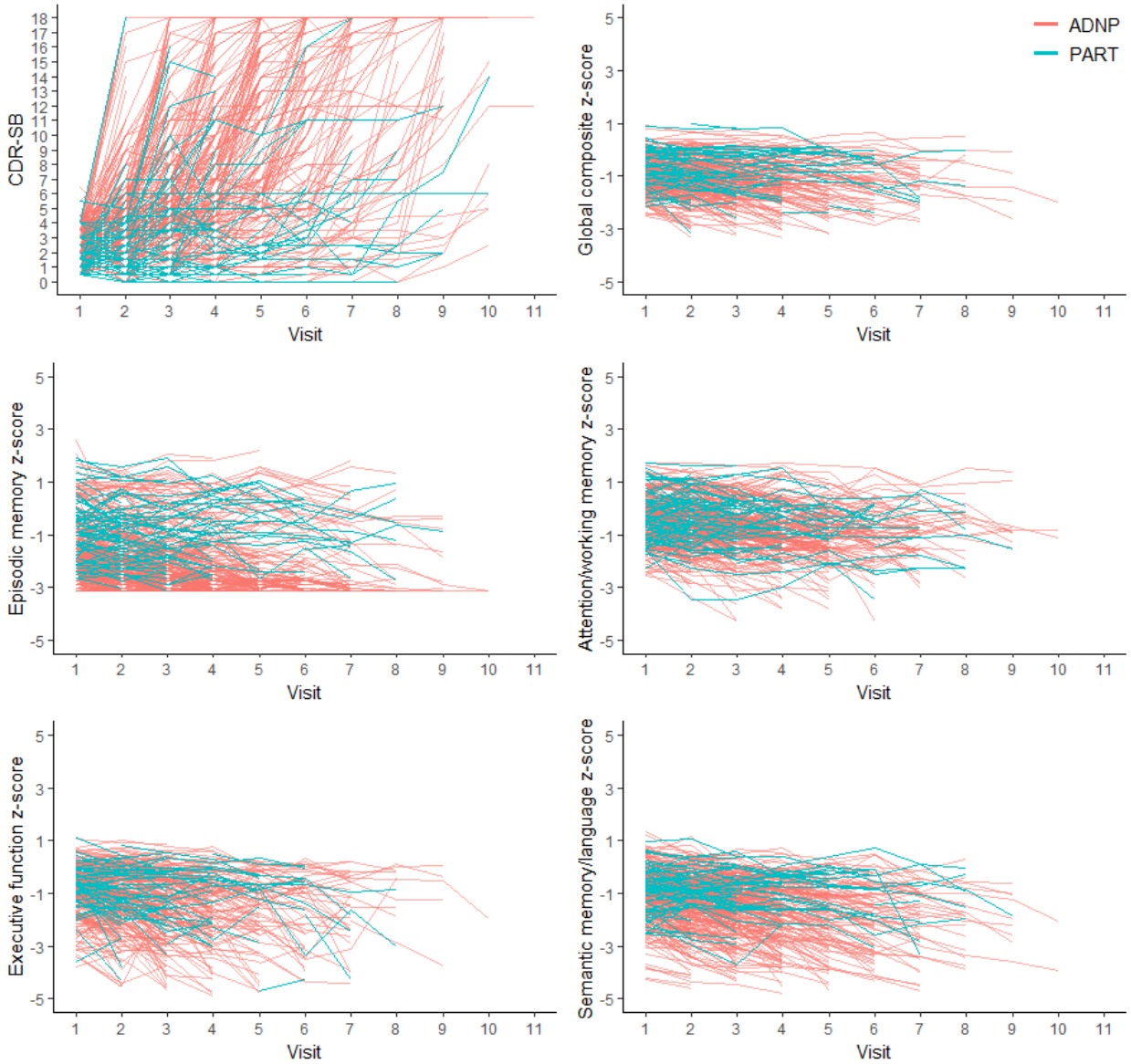
Supplementary Figure 1. Spaghetti plots of CDR-SB and cognitive domain z-scores by UDS visit for participants with mild cognitive impairment (CDR=0.5) at baseline and primary age related tauopathy versus Alzheimer disease at autopsy



Supplementary Table 1. Adjusted models for CDR-SB by prevalent and incident MCI cases of primary age related tauopathy versus Alzheimer disease

Score	Sample	Number of participant visits	Annual rate of change (Adjusted)[a]				Annual difference between PART and AD[b]		
			PART		AD				
			β est	95% CI	β est	95% CI	β est	95% CI	p-value
CDR-SB	Total	2424	0.74	(0.49, 0.98)	1.80	(1.63, 1.96)	1.06	(0.83, 1.29)	<0.001
	Prevalent	1856	0.90	(0.50, 1.29)	1.86	(1.68, 2.03)	0.96	(0.57, 1.35)	<0.001
	Incident	568	0.51	(0.26, 0.76)	1.51	(1.22, 1.79)	1.00	(0.73, 1.27)	<0.001

[a] Interpretation: a positive β estimate and a 95% CI that does not include zero indicates significant decline.

[b] Interpretation: a positive difference indicates PART is declining at a slower rate than AD.

[c] Adjusting for baseline score, sex, age at baseline, education, Braak stage, APOE ε4 carrier status, family history of cognitive impairment, history of stroke, hypertension, or diabetes.

Supplementary Table 2. Alternative adjusted models comparing primary age-related tauopathy versus Alzheimer's disease in participants with mild cognitive impairment (CDR=0.5) at baseline, where clinical history of cardiovascular risk factors are replaced with autopsy evidence of vascular brain injury

Score	Number of participant visits	Annual rate of change (Adjusted)[a]				Annual difference between PART and AD[b]		
		PART		AD				
		β est	95% CI	β est	95% CI	β est	95% CI	p-value
CDR-SB	2443	0.71	(0.47, 0.95)	1.80	(1.64, 1.97)	1.10	(0.87, 1.32)	<0.001
Global composite	1316	-0.12	(-0.16, -0.07)	-0.26	(-0.29, -0.22)	-0.14	(-0.19, -0.09)	<0.001
Episodic memory	1821	-0.08	(-0.13, -0.02)	-0.21	(-0.26, -0.17)	-0.14	(-0.21, -0.06)	<0.001
Attention/working memory	1892	-0.06	(-0.09, -0.02)	-0.18	(-0.21, -0.16)	-0.12	(-0.16, -0.09)	<0.001
Executive function	1375	-0.21	(-0.28, -0.13)	-0.40	(-0.45, -0.36)	-0.20	(-0.28, -0.11)	<0.001
Semantic memory/language	1828	-0.13	(-0.16, -0.10)	-0.35	(-0.39, -0.31)	-0.22	(-0.26, -0.18)	<0.001

[a] Interpretation: a negative β estimate and a 95% CI that does not include zero indicates significant decline with the exception of CDR-SB, where a positive β estimate and a 95% CI that does not include zero indicates significant decline.

[b] Interpretation: a negative difference indicates PART is declining at a slower rate than AD except for CDR-SB where a positive difference indicates PART is declining at a slower rate than AD.

[c] Adjusting for sex, age at baseline, education, baseline test score, Braak stage, APOE ε4 carrier status, family history of cognitive impairment, evidence of vascular brain injury at autopsy. Vascular brain injury is a binary variable that includes the presence of hemorrhage, microbleed, infarct/lacune, or microinfarct.

Supplementary Table 3. Alternative adjusted models comparing primary age-related tauopathy versus Alzheimer's disease in participants with mild cognitive impairment (CDR=0.5) at baseline, where Braak stage is removed as a covariate

Score	Number of participant visits	Annual rate of change (Adjusted)[a]				Annual difference between PART and AD[b]		
		PART		AD				
		β est	95% CI	β est	95% CI	β est	95% CI	p-value
CDR-SB	2431	0.72	(0.48, 0.97)	1.80	(1.64, 1.97)	1.08	(0.85, 1.30)	<0.001
Global composite	1309	-0.11	(-0.16, -0.07)	-0.26	(-0.29, -0.23)	-0.14	(-0.19, -0.10)	<0.001
Episodic memory	1811	-0.07	(-0.13, -0.01)	-0.21	(-0.26, -0.17)	-0.14	(-0.22, -0.06)	<0.001
Attention/working memory	1882	-0.06	(-0.09, -0.02)	-0.18	(-0.21, -0.16)	-0.13	(-0.16, -0.09)	<0.001
Executive function	1368	-0.20	(-0.28, -0.13)	-0.40	(-0.45, -0.36)	-0.20	(-0.28, -0.11)	<0.001
Semantic memory/language	1818	-0.13	(-0.16, -0.10)	-0.35	(-0.39, -0.31)	-0.22	(-0.27, -0.18)	<0.001

[a] Interpretation: a negative β estimate and a 95% CI that does not include zero indicates significant decline with the exception of CDR-SB, where a positive β estimate and a 95% CI that does not include zero indicates significant decline.

[b] Interpretation: a negative difference indicates PART is declining at a slower rate than AD except for CDR-SB where a positive difference indicates PART is declining at a slower rate than AD.

[c] Adjusting for sex, age at baseline, education, baseline test score, APOE ε4 carrier status, family history of cognitive impairment, history of stroke, hypertension, or diabetes

Supplementary Table 4. Adjusted models examining Alzheimer's disease participants with mild cognitive impairment (CDR=0.5) at baseline, comparing those with Thal phase 1-3 versus Thal phase 4-5

Model[c]	Score	Number of participant visits	Annual rate of change (Adjusted)[a]				Annual difference between AD with Thal phase 1-3 and 4-5[b]		
			AD with Thal phase 1-3		AD with Thal phase 4-5				
			β est	95% CI	β est	95% CI	β est	95% CI	p-value
Model 1	CDR-SB	1156	1.38	(0.86, 1.89)	1.75	(1.56, 1.93)	0.37	(-0.16, 0.90)	0.17
	Global composite	624	-0.16	(-0.21, -0.10)	-0.24	(-0.28, -0.21)	-0.08	(-0.15, -0.02)	0.008
	Episodic memory	825	-0.12	(-0.23, -0.01)	-0.19	(-0.23, -0.15)	-0.07	(-0.18, 0.04)	0.21
	Attention/working memory	843	-0.12	(-0.18, -0.06)	-0.18	(-0.20, -0.15)	-0.06	(-0.13, 0.01)	0.10
	Executive function	641	-0.27	(-0.35, -0.18)	-0.39	(-0.44, -0.33)	-0.12	(-0.20, -0.03)	0.007
	Semantic memory/language	824	-0.25	(-0.35, -0.16)	-0.35	(-0.41, -0.30)	-0.10	(-0.21, 0.01)	0.09
Model 2	CDR-SB	1156	1.38	(0.86, 1.89)	1.75	(1.56, 1.93)	0.37	(-0.16, 0.90)	0.17
	Global composite	624	-0.16	(-0.21, -0.10)	-0.24	(-0.28, -0.21)	-0.08	(-0.15, -0.02)	0.008
	Episodic memory	825	-0.12	(-0.23, -0.005)	-0.19	(-0.23, -0.15)	-0.07	(-0.18, 0.04)	0.21
	Attention/working memory	843	-0.12	(-0.18, -0.06)	-0.18	(-0.20, -0.15)	-0.06	(-0.13, 0.01)	0.10
	Executive function	641	-0.27	(-0.35, -0.19)	-0.39	(-0.44, -0.33)	-0.12	(-0.20, -0.03)	0.007
	Semantic memory/language	824	-0.25	(-0.35, -0.16)	-0.35	(-0.41, -0.30)	-0.10	(-0.21, 0.01)	0.09

[a] Interpretation: a negative β estimate and a 95% CI that does not include zero indicates significant decline with the exception of CDR-SB, where a positive β estimate and a 95% CI that does not include zero indicates significant decline.

[b] Interpretation: a negative difference indicates AD with Thal phase 1-3 is declining at a slower rate than AD with Thal phase 4-5 except for CDR-SB where a positive difference indicates AD with Thal phase 1-3 is declining at a slower rate than AD with Thal phase 4-5.

[c] Model 1: Adjusting for sex, age at baseline, education, baseline test score, APOE ε4 carrier status, family history of cognitive impairment, history of stroke, hypertension, or diabetes, and Braak stage
Model 2: Adjusting for sex, age at baseline, education, baseline test score, APOE ε4 carrier status, family history of cognitive impairment, history of stroke, hypertension, or diabetes