

EEG metrics	R2m	Amyloid status		FDG status		Electrode		Amyloid.FDG		Amyloid.electrode		FDG.electrode		Amyloid.FDG.electrode	
		p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr
Complexity	0.12	0.7523	0.9140	0.2239	0.3731	<0.0001*	<0.0001*	0.3058	0.6116	0.4242	1.0000	<0.0001*	<0.0001*	0.9993	0.9993
PSD.alpha	0.07	0.6662	0.9140	0.5539	0.6923	<0.0001*	<0.0001*	0.6269	0.7837	1.0000	1.0000	0.0033*	0.0033*	0.4671	0.9993
PSD.beta	0.11	0.8226	0.9140	0.2813	0.4019	<0.0001*	<0.0001*	0.1140	0.6012	1.0000	1.0000	<0.0001*	<0.0001*	0.8916	0.9993
PSD.delta	0.17	0.4823	0.9140	0.1386	0.3466	<0.0001*	<0.0001*	0.1279	0.6012	0.9999	1.0000	<0.0001*	<0.0001*	0.8727	0.9993
PSD.gamma	0.10	0.6326	0.9140	0.0182*	0.0908	<0.0001*	<0.0001*	0.9379	0.9624	0.9413	1.0000	<0.0001*	<0.0001*	0.0051*	0.0257*
SE	0.12	0.9568	0.9568	0.2017	0.3731	<0.0001*	<0.0001*	0.5615	0.7837	1.0000	1.0000	<0.0001*	<0.0001*	0.9920	0.9993
PSD.theta	0.04	0.4047	0.9140	0.7746	0.8606	<0.0001*	<0.0001*	0.3801	0.6336	0.8735	1.0000	<0.0001*	<0.0001*	0.0122*	0.0406*
MSF	0.10	0.4806	0.9140	0.0093*	0.0908	<0.0001*	<0.0001*	0.1804	0.6012	0.9743	1.0000	<0.0001*	<0.0001*	0.0002*	0.0019*
wSML.alpha	0.07	0.2063	0.9140	0.9099	0.9099	<0.0001*	<0.0001*	0.2640	0.6116	<0.0001*	0.0003*	<0.0001*	<0.0001*	0.9867	0.9993
wSML.theta	0.15	0.6300	0.9140	0.0939	0.3130	<0.0001*	<0.0001*	0.9624	0.9624	0.0534	0.2668	<0.0001*	<0.0001*	0.9955	0.9993

Supplementary Table 1 : Results of linear mixed models for 224 electrodes analysis for amyloid status (A+ versus A-), FDG status (N+ versus N-), electrodes and interactions between amyloid status, FDG status and electrodes, for 10 EEG metrics. Marginal R-squared values (R2m) are indicated. Significant adjusted p-values on age, gender, education level, hippocampal volume and ApoE4 status are indicated with $*P < 0.05$. Significant Benjamini-Hochberg corrected p-values on 10 measures are indicated with $*P < 0.05$. A+ = Amyloid positive; A- = Amyloid negative; FDG = fluorodeoxyglucose; MSF = median spectral frequency; ; N+ = neurodegeneration positive; N- = neurodegeneration negative; pcorr = corrected p-value; PSD = power spectral density; SE = spectral entropy; wSMI = weighted symbolic mutual information.

EEG metrics	Adjusted R2	Florbetapir		FDG		Gender		Educational level		Age at baseline		APOE4		Hippocampal volume		Interaction Florbetapir:FDG	
		p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr
PLV.alpha‡	0.361	0.4831	0.6936	0.0182*	0.0711	<0.0001*	<0.0001*	0.3912	0.8846	0.1385	0.8145	0.9334	0.9334	0.3847	0.7028	0.1787	0.3127
PLV.theta‡	0.393	0.7559	0.8819	0.0553	0.1290	<0.0001*	<0.0001*	0.5301	0.8846	0.6655	0.8145	0.4605	0.7478	0.6918	0.7028	0.3237	0.4532
wPLI.alpha‡	-0.008	0.4955	0.6936	0.1910	0.2547	0.2580	0.3612	0.8846	0.8846	0.5089	0.8145	0.8120	0.9334	0.4215	0.7028	0.6387	0.7451
wPLI.theta‡¥	0.002	0.3187	0.5973	0.1731	0.2547	0.7715	0.8309	0.8472	0.8846	0.4435	0.8145	0.1115	0.5203	0.2207	0.7028	0.7471	0.7544
Complexity‡	0.025	0.2578	0.5973	0.2001	0.2547	0.0788	0.1716	0.1549	0.6851	0.4299	0.8145	0.2360	0.6425	0.7000	0.7028	0.0217*	0.1520
PSD.alpha‡	-0.012	0.9376	0.9386	0.5815	0.5815	0.3075	0.3914	0.6780	0.8846	0.4566	0.8145	0.1915	0.6425	0.5324	0.7028	0.7544	0.7544
PSD.beta‡	0.012	0.3413	0.5973	0.2325	0.2712	0.1249	0.2186	0.1958	0.6851	0.5938	0.8145	0.9040	0.9334	0.2372	0.7028	0.0348*	0.1626
PSD.delta‡	0.034	0.3108	0.5973	0.1067	0.2135	0.0051*	0.0179*	0.1347	0.6851	0.8596	0.8596	0.0548	0.3839	0.4439	0.7028	0.1225	0.2450
PSD.gamma‡	0.018	0.6529	0.8310	0.0157*	0.0711	0.9583	0.9583	0.8290	0.8846	0.3602	0.8145	0.9293	0.9334	0.2529	0.7028	0.0691	0.1933
SE‡	0.009	0.3022	0.5973	0.1665	0.2547	0.3526	0.4114	0.1249	0.6851	0.5892	0.8145	0.8517	0.9334	0.5779	0.7028	0.0669	0.1933
PSD.theta¥	0.019	0.3411	0.5973	0.0203*	0.0711	0.2140	0.3329	0.6211	0.8846	0.3552	0.8145	0.4182	0.7478	0.7028	0.7028	0.1064	0.2450
MSF‡	0.037	0.2677	0.5973	0.0064*	0.0711	0.0858	0.1716	0.5198	0.8846	0.5305	0.8145	0.2754	0.6425	0.6792	0.7028	0.0136*	0.1520
wSMI.alpha¥	0.001	0.2219	0.5973	0.4785	0.5154	0.0809	0.1716	0.7596	0.8846	0.7386	0.8145	0.4807	0.7478	0.0751	0.7028	0.2855	0.4440
wSMI.theta¥	0.177	0.9386	0.9386	0.0452*	0.1265	<0.0001*	<0.0001*	0.8170	0.8846	0.7563	0.8145	0.0493*	0.3839	0.3842	0.7028	0.5948	0.7451

Supplementary Table 2 : Results of multiple linear regression analysis of 14 average EEG metrics on all explanatory variables. Adjusted coefficient of determination R-squared values (R2), p-values and Benjamini-Hochberg corrected p values on 14 EEG metrics are shown. *P < 0.05. To maximize R-squared values, for each EEG metric, FDG and Florbetapir were used either as continuous or binary measures. ¥ FDG as continuous measure otherwise as binary measure ‡ Florbetapir as continuous measure otherwise as binary measure. A+ = Amyloid positive; A- = Amyloid negative; ApoE = Apolipoprotein E; FDG = fluorodeoxyglucose; MSF = median spectral frequency; N+ = neurodegeneration positive; N- = neurodegeneration negative; pcorr = corrected p-value; PLV = Phase Locking Value; PSD = power spectral density; SE = spectral entropy; wPLI = weighted Phase Lag Index; wSMI = weighted symbolic mutual information.

EEG metrics	R2m	Amyloid status		FDG status		Electrode		Amyloid.FDG		Amyloid.electrode		FDG.electrode		Amyloid.FDG.electrode	
		p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr	p-value	pcorr
PLV.alpha	0.37	0.3643	0.9568	0.0065*	0.0653	<0.0001*	<0.0001*	0.4226	0.7395	1.0000	1.0000	<0.0001*	<0.0001*	1.0000	1.0000
PLV.theta	0.42	0.6222	0.9568	0.0378*	0.1323	<0.0001*	<0.0001*	0.9196	0.9624	0.9866	1.0000	<0.0001*	<0.0001*	0.8471	1.0000
wPLI.alpha	0.03	0.8972	0.9568	0.1903	0.3483	<0.0001*	<0.0001*	0.8472	0.9624	1.0000	1.0000	0.9999	0.9999	1.0000	1.0000
wPLI.theta	0.03	0.8981	0.9568	0.5099	0.6462	<0.0001*	<0.0001*	0.3867	0.7395	0.9997	1.0000	0.0293*	0.0315*	0.9998	1.0000
Complexity	0.12	0.7523	0.9568	0.2239	0.3483	<0.0001*	<0.0001*	0.3058	0.7395	0.4242	1.0000	<0.0001*	<0.0001*	0.9993	1.0000
PSD.alpha	0.07	0.6662	0.9568	0.5539	0.6462	<0.0001*	<0.0001*	0.6269	0.8777	1.0000	1.0000	0.0033*	0.0039*	0.4671	1.0000
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