

Supplementary Table 1: Scanner specifications.

Scanner Name	Multi-scanner (matched) data				Source data
	GE	Philips	SiemP	SiemT	-
Manufacturer	General Electrics	Philips	Siemens	Siemens	Siemens
Scanner Hardware	DISCOVERY-MR750w 3T	Achieva-dStream 3T	Prisma-fit 3T	TrioTim 3T	TrioTim 3T
Resolution (mm)	1.0 × 1.0 × 0.5	1.0 × 1.0 × 1.0	1.0 × 1.0 × 1.0	1.0 × 1.0 × 1.0	1.0 × 1.0 × 1.0
TE (ms)	3.7	1.66	1.64	1.64	3.16
TR (ms)	9500	2530	2530	2530	2400

Supplementary Table 2: Bias and Cohen’s d values for biomarkers of AD.

Mean \pm SD of absolute differences over all scanner pairs (Bias)										
Method	Cortical Thickness (mm)					Volume (cm ³)				
	Entorhinal	Inferior Temp. ¹	Middle Temp.	Inferior Parietal	Fusiform	Amygdala	Hippo. ²	Entorhinal	Middle Temp.	Inferior Temp.
RAW	0.62 \pm 0.4	0.46 \pm 0.4	0.22 \pm 0.2	0.25 \pm 0.2	0.38 \pm 0.3	0.25 \pm 0.2	0.30 \pm 0.2	0.56 \pm 0.4	1.48 \pm 1.1	1.19 \pm 1.1
Sup. ³ CALAMITI	0.87 \pm 0.6*	0.45 \pm 0.3	0.40 \pm 0.4*	0.37 \pm 0.4*	0.43 \pm 0.3	0.30 \pm 0.3	0.71 \pm 0.5*	0.62 \pm 0.5	2.78 \pm 2.6*	2.31 \pm 2.1*
MISPEL	0.46 \pm 0.3*	0.25 \pm 0.2*	0.25 \pm 0.3	0.34 \pm 0.3*	0.36 \pm 0.3	0.19 \pm 0.2*	0.32 \pm 0.3	0.37 \pm 0.3*	1.55 \pm 1.7	1.50 \pm 1.6
Unsup. ⁴ ESPA ^{TC}	0.66 \pm 0.5	0.28 \pm 0.2*	0.17 \pm 0.1*	0.21 \pm 0.2	0.29 \pm 0.2*	0.21 \pm 0.2*	0.34 \pm 0.3	0.53 \pm 0.5	1.10 \pm 0.8*	1.21 \pm 1.2
ESPA ^{Res}	0.57 \pm 0.4	0.28 \pm 0.2*	0.26 \pm 0.2	0.22 \pm 0.2	0.32 \pm 0.2*	0.18 \pm 0.2*	0.29 \pm 0.2	0.45 \pm 0.3*	1.31 \pm 0.9	1.04 \pm 0.8*
Mean \pm SD of Cohen’s d measures over all scanner pairs										
Method	Cortical Thickness (mm)					Volume (cm ³)				
	Entorhinal	Inferior Temp.	Middle Temp.	Inferior Parietal	Fusiform	Amygdala	Hippo.	Entorhinal	Middle Temp.	Inferior Temp.
RAW	0.46 \pm 0.1	0.66 \pm 0.4	1.14 \pm 0.2	0.97 \pm 0.3	0.74 \pm 0.2	0.74 \pm 0.3	0.76 \pm 0.2	0.51 \pm 0.1	0.61 \pm 0.4	0.81 \pm 0.3
Sup. CALAMITI	0.50 \pm 0.5	0.57 \pm 0.6	0.31 \pm 0.2	0.40 \pm 0.3	0.54 \pm 0.5	0.28 \pm 0.1	0.31 \pm 0.1	-0.31 \pm 0.6	0.14 \pm 0.1	0.18 \pm 0.2
MISPEL	0.71 \pm 0.1	0.73 \pm 0.1	1.21 \pm 0.3	0.92 \pm 0.1	0.57 \pm 0.2	0.80 \pm 0.2	0.73 \pm 0.2	0.17 \pm 0.2	0.63 \pm 0.4	0.69 \pm 0.2
Unsup. ESPA ^{TC}	0.61 \pm 0.3	0.84 \pm 0.2	1.12 \pm 0.2	1.20 \pm 0.1	0.67 \pm 0.1	0.87 \pm 0.2	0.50 \pm 0.2	0.54 \pm 0.4	0.78 \pm 0.4	1.26 \pm 0.1
ESPA ^{Res}	0.73 \pm 0.4	1.00 \pm 0.2	1.23 \pm 0.3	1.30 \pm 0.2	0.69 \pm 0.2	1.00 \pm 0.3	0.55 \pm 0.1	0.24 \pm 0.1	0.92 \pm 0.3	1.08 \pm 0.2

¹Temp.: Temporal, ²Hip.: Hippocampus, ³Sup.: Supervised, ⁴Unsup.: Unsupervised, *Distributions showing statistically significant t -statistics ($p < 0.05$) when compare to RAW. Distributions with the smallest means (bias) across methods are in bold.