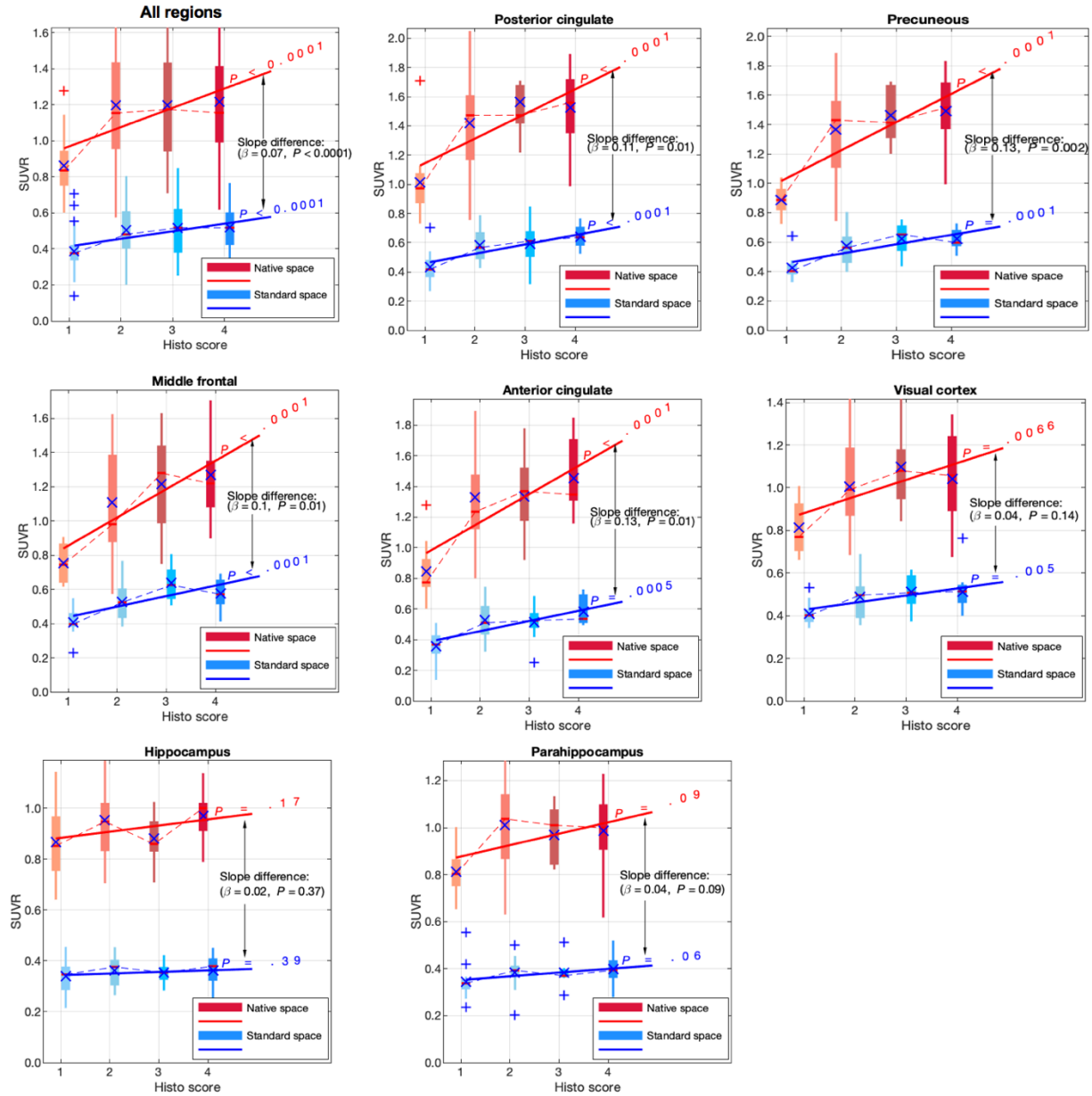Supplemental Table 1. Brain regions derived from the histopathology and their FreeSurfer corresponding regions that were employed in our analysis.

Histopathology regions	FreeSurfer regions
Middle frontal	Caudal middle frontal Rostral middle frontal
Anterior Cingulate	Caudal Anterior Cingulate
Posterior Cingulate	Posterior Cingulate
Precuneus	Precunous
Hippocampus	Hippocampus
Parahippocampus	Parahipoccampus
Occipital	Lateral occipital

Supplemental Table 2. The results of comparison between the variances of the SUVRs obtained by using native and standard space methods from all avilable regions and at each histopathological score level. The F test is used to determine the significance of the observed differences.

ROI	Histo Score	Native SUVR variance	Standard SUVR variance	F ratio	P value
Middle frontal	1 (n= 12)	0.01	0.03	0.53	0.15
	2 (n=17)	0.10	0.06	1.87	0.11
	3 (n=13)	0.08	0.04	2.15	0.10
	4 (n=10)	0.07	0.04	1.90	0.18
Ant Cingulate	1 (n=14)	0.03	0.05	0.63	0.21
	2 (n=21)	0.11	0.09	1.19	0.35
	3 (n=10)	0.07	0.08	0.86	0.41
	4 (n=6)	0.07	0.02	4.24	0.07
Post Cingulate	1 (n=16)	0.05	0.04	1.26	0.33
	2 (n=18)	0.11	0.02	6.13	0.00*
	3 (n=8)	0.08	0.12	0.65	0.29
	4 (n=9)	0.08	0.08	1.06	0.47
precuneus	1 (n=14)	0.01	0.01	0.91	0.43
	2 (n=21)	0.09	0.04	2.17	0.05
	3 (n=7)	0.04	0.06	0.71	0.35
	4 (n=9)	0.07	0.02	2.95	0.07
Hippocampus	1 (n=17)	0.02	0.04	0.63	0.18
	2 (n=14)	0.02	0.04	0.62	0.20
	3 (n=12)	0.01	0.01	0.67	0.26
	4 (n=9)	0.01	0.05	0.23	0.03*
Parahippocampus	1 (n=17)	0.01	0.02	0.54	0.11
	2 (n=14)	0.03	0.04	0.75	0.31
	3 (n=7)	0.02	0.02	0.93	0.46
	4 (n=11)	0.03	0.02	1.58	0.24
Occipital	1 (n=13)	0.01	0.00	3.13	0.03*
	2 (n=14)	0.06	0.04	1.45	0.25
	3 (n=10)	0.04	0.01	4.46	0.02*
	4(n=14)	0.05	0.02	2.19	0.08

*Significantly different variance

Supplemental Figure 1. Each box-plot illustrates the distribution of SUVRs computed with native and standard space method at each level of histopathological stage from available regions. Matching Freesurfer atlas regions in the MNI space is used to computed SUVRs in the standard space. Lines depict the regression slope computed separately for native and standard space indicating the strength of relationship between SUVR and histopathological staging. x indicates the mean, - indicates the median, and + shows the outliers.

Supplemental Video 1. Represents the matching color-coded Freesurfer regions of thirty healthy but older participants' brains after spatial normalization to MNI space using the state of the art non-linear registration; advanced normalization tools (ANTs). The changes in the color at each point in the brain indicates mismatching ROI after normalization.