SUPPLEMENTARY DATA

Prospective Longitudinal Perfusion in Probable Alzheimer's Disease Correlated with Atrophy in Temporal Lobe

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Supplemental Table 1. Demographic and cognitive scores at Time 2.

Time 2 (n = 148)			
	NC (n=58)	MCI (n=50)	AD (n=40)
Age (years)	83.4±3.7	84.5±3.6	84.1±3.5
Gender (F, %)	31 (53%)	32 (64%)	28 (70%)
Education (years)	14.6±2.8	14.3±3.4	13.3±2.9
Hypertension (%) †	25 (43%)	24 (49%) (n'=49)	21 (53%)
Diabetes (%)	9 (16%)	7 (14%)	3 (8%)
Heart Disease (%)†	14 (24%)	11 (22%)	5 (13%) (n'=39)
3MSE scores†	**95.0±3.9** (n'=54)	93.3±6.2 (n'=44)	**83.6±10.0** (n'=39)

† 3MSE scores, hypertension and heart disease cases were not completed for all the subjects. The actual number of subjects with valid records is indicated inside the brackets. Subjects with AD had lower 3MSE scores compared to NC subjects ($p < 0.0001$, shown in bold fonts).

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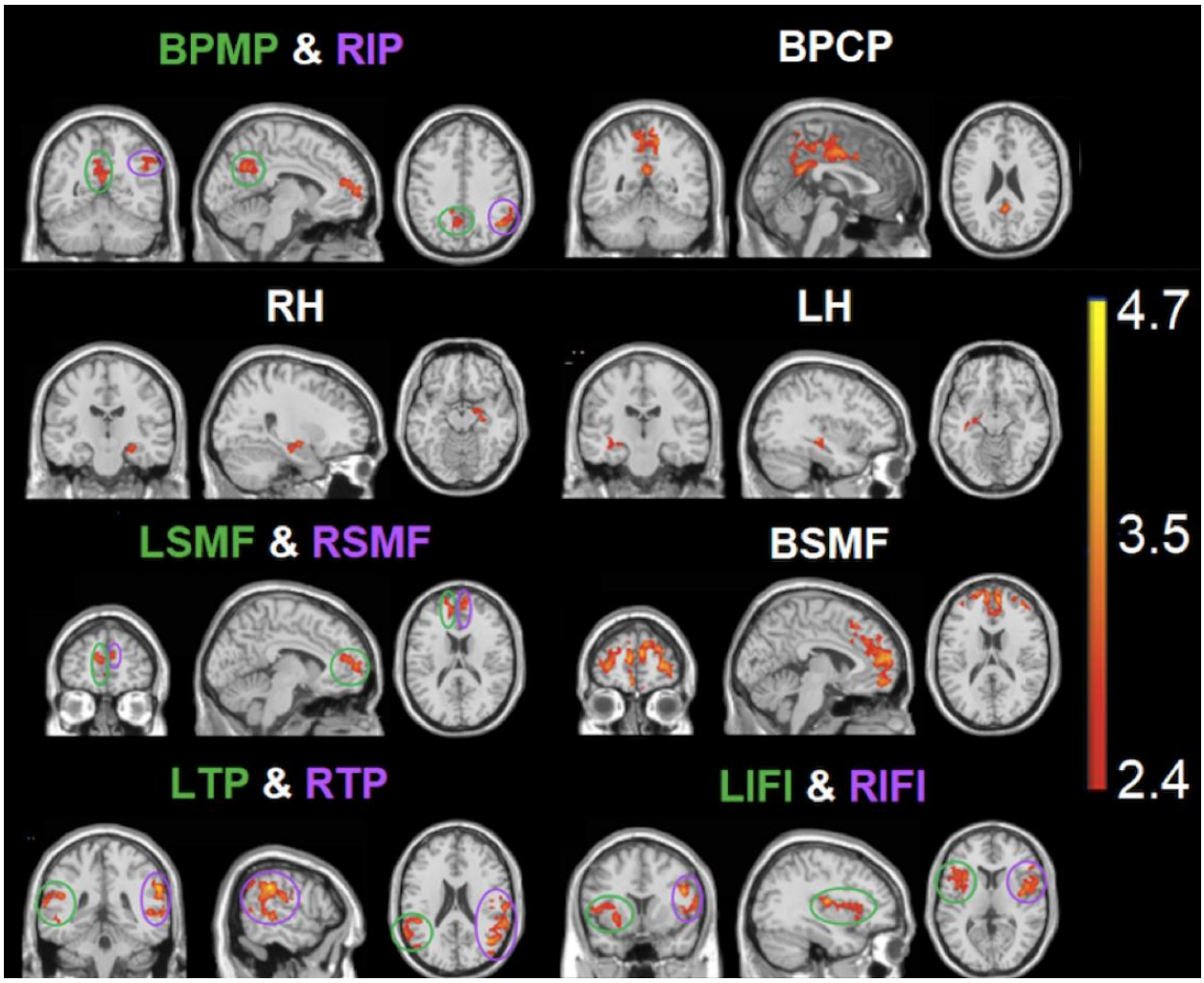

Supplementary Figure 1. Twelve regions of interest (ROIs) were identified from the voxel-by-voxel analysis at Time 2: right inferior parietal (RIP), bilateral posterior and middle cingulate and parietal regions (BPMP), bilateral posterior cingulate extending to the precuneus (BPCP), right hippocampus (RH), left hippocampus (LH), right superior medial frontal (RSMF), left superior medial frontal (LSMF), bilateral superior medial frontal (BSMF), right temporoparietal (RTP), left temporoparietal (LTP), right inferior frontal and insular (RIFI), left inferior frontal and insular (LIFI). LTP was used as the perfusion ROI in the study.

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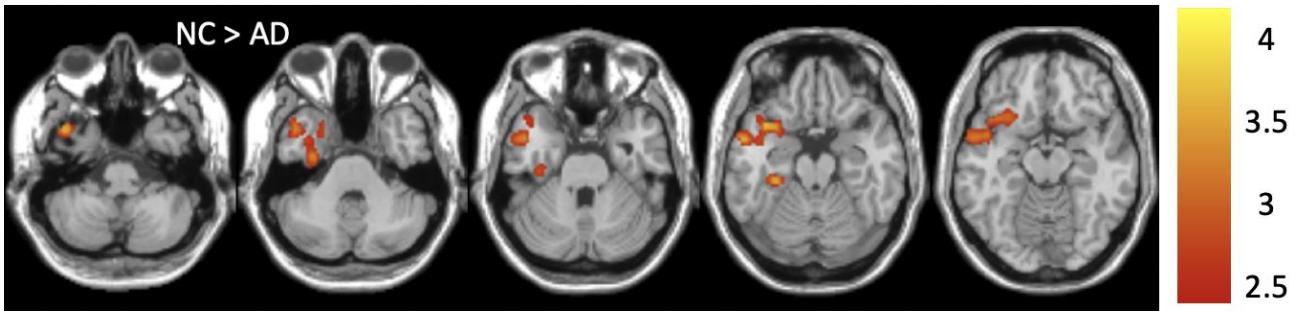
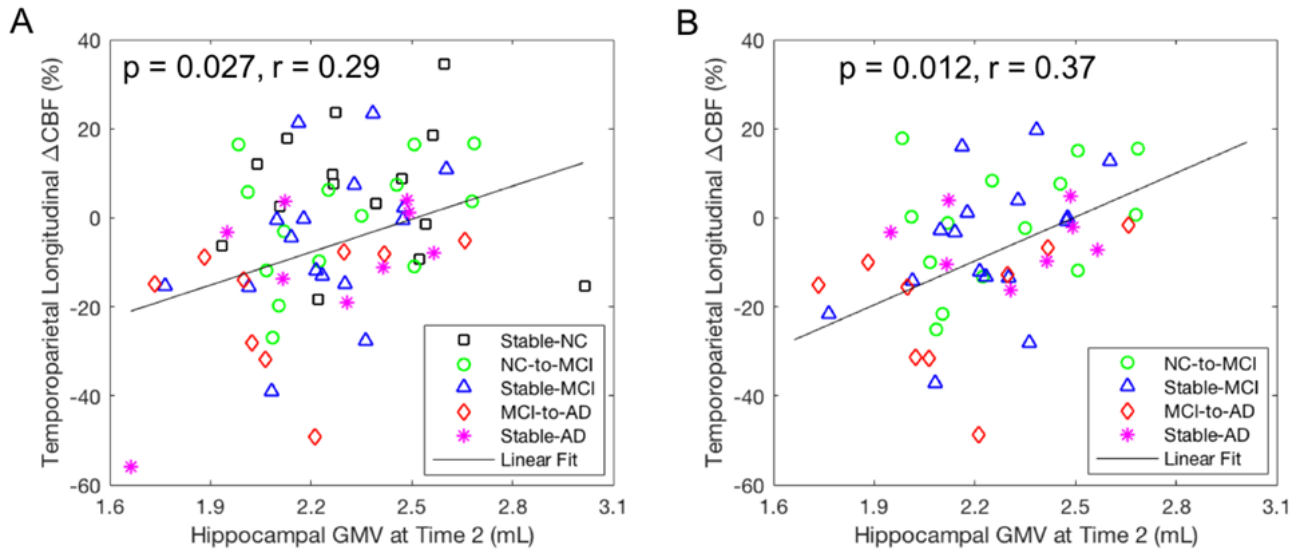


Cluster	N voxels	Peak-t	Peak-t MNI coordinates	Anatomical locations	%Cluster	%Region
Temporal pole [L] (NC > AD)	3865	4.08	-38, 12, -20	**Temporal lobe**		
				Temporal_Pole_Sup_L	20.65	26.20
				Temporal_Mid_L	13.53	4.46
				Temporal_Pole_Mid_L	9.78	21.12
				Temporal_Inf_L	8.90	4.54
				Occipital lobe		
				Fusiform_L	17.49	12.35
				Insula		
				Insula_L	8.33	7.31
				Limbic System		
				ParaHippocampal_L	3.13	5.22
				Frontal lobe		
				Frontal_Inf_Orb_L	1.91	5.51

Supplementary Figure 2. The AD group had significant GMV decreases in the temporal pole cluster (the top panel) compared with the NC group after adjusting for age, gender, and TIV effects using the SnPM analysis with a voxel-level p-value threshold of 0.005 and a cluster-level FWE-corrected p-value threshold of 0.05. The cluster statistics of the temporal pole cluster are shown in the bottom panel.



Supplementary Figure 3. Correlation of longitudinal CBF changes from Time 2 to Time 3 in the temporoparietal region with GMV values at Time 2 after adjusting for age, gender, and time gap. Longitudinal CBF changes in the temporoparietal region were significantly associated with (A) hippocampal GMV values for all of the subjects (n = 63), and (B) hippocampal GMV values for the subjects with AD progression (n = 48).

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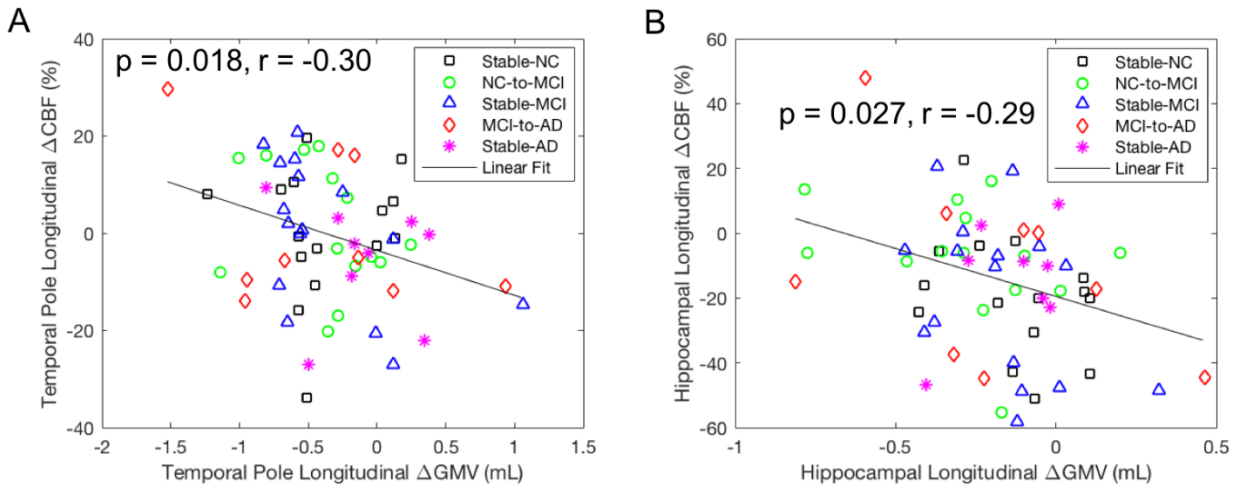

Supplementary Figure 4.. Correlation of longitudinal CBF changes from Time 2 to Time 3 with longitudinal GMV changes from Time 2 to Time 3 after adjusting for age, gender, and time gap for all of the subjects (n = 63). Longitudinal CBF changes were negatively associated with longitudinal changes of GMV values in the same regions: (A) temporal pole and (B) hippocampal regions.