Supplemental Materials to

Electrophysiological Resting State Brain Network and Episodic Memory in Healthy Aging Adults

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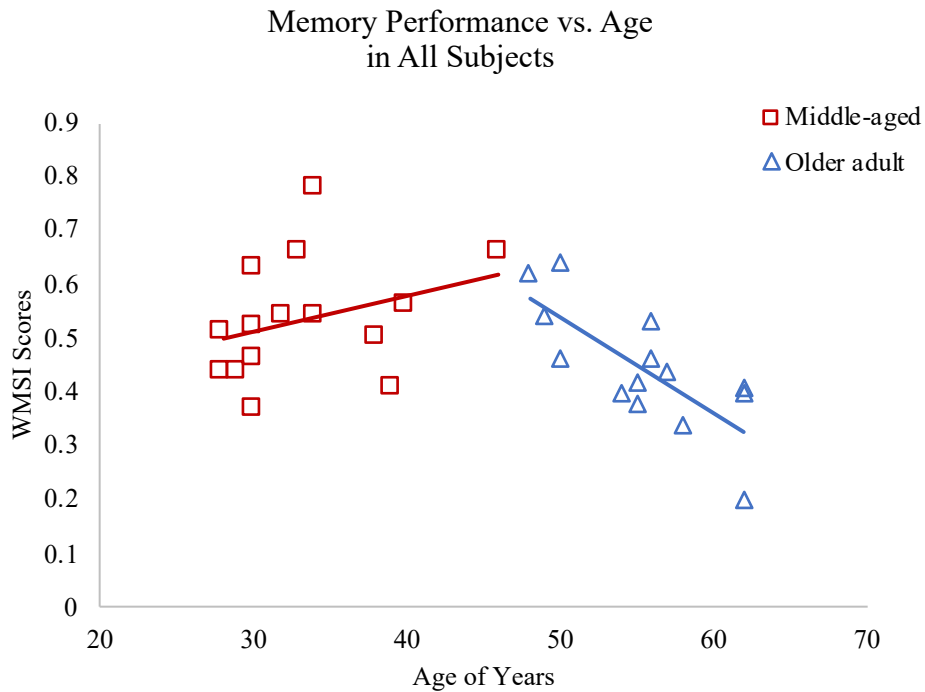
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Memory Performance vs. Age in All Subjects

Supplemental Fig. 1. The relationship between memory performance and age of years differs in middle-aged and older adults. The two subgroups were separately fitted by lines. Blue line and red line represent the older group and the middle-aged group, respectively. Only in the older group, a negative relationship was found between the age and the memory performance scores ($r = -0.75$, $p = 0.002$). WMSI scores stand for the Wechsler Memory Scale Immediate Recall score.
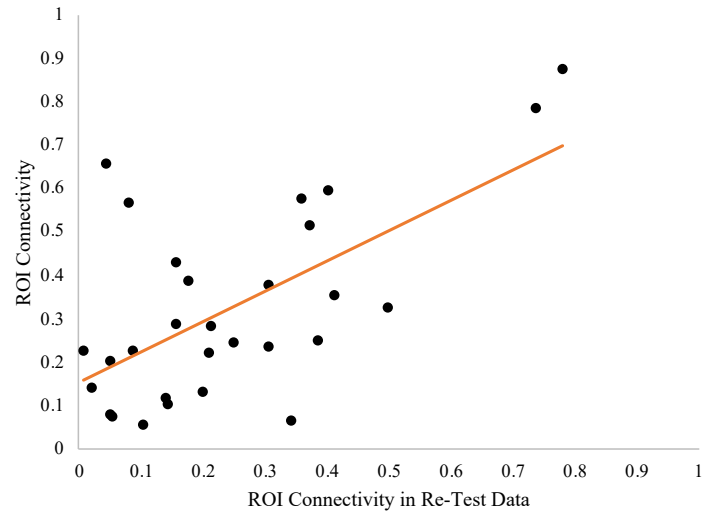
(A) EEG network, Un-Thresholded
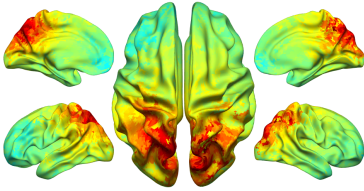
**(B) Re-Test EEG network, Un-Thresholded**
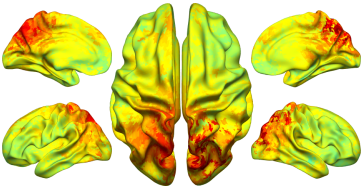
(C) Test-Retest Reliability

Supplemental Fig. 2. Test-retest reliability in EEG network. A separate EEG dataset was extracted and the network analysis and repeated (see details in Methods and Materials). Un-thresholded EEG network maps are plotted for Test and Re-Test dataset in (A) and (B). The ROIs for test and retest data were defined by the source points of significance by one-sample two-sided *t* test on all subjects after multiple comparison correction. The Yeo template was further applied in conjunction to define the ROI. Then brain connectivity values averaged within corresponding ROI were extracted and plotted in (C). The correlation between all individuals' test and retest data is 0.62 ($p < 0.001$).

(A)   All Subjects   (B)   Middle-Aged Subjects   (C)   Older Subjects

+MAX

-MAX
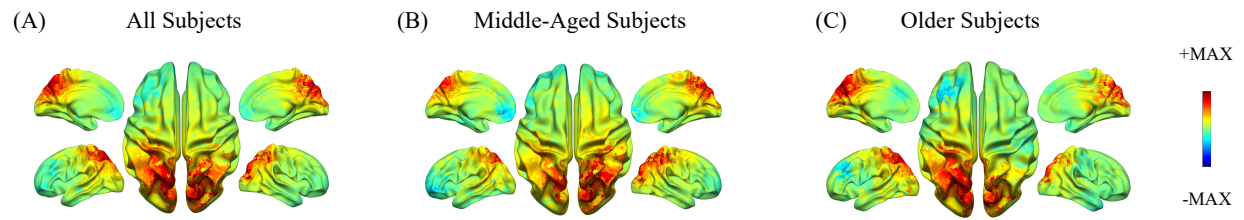
Supplemental Fig. 3. The un-thresholded brain connectivity averaged separately in (A) all, (B) middle-aged subjects, and (C) older subjects.
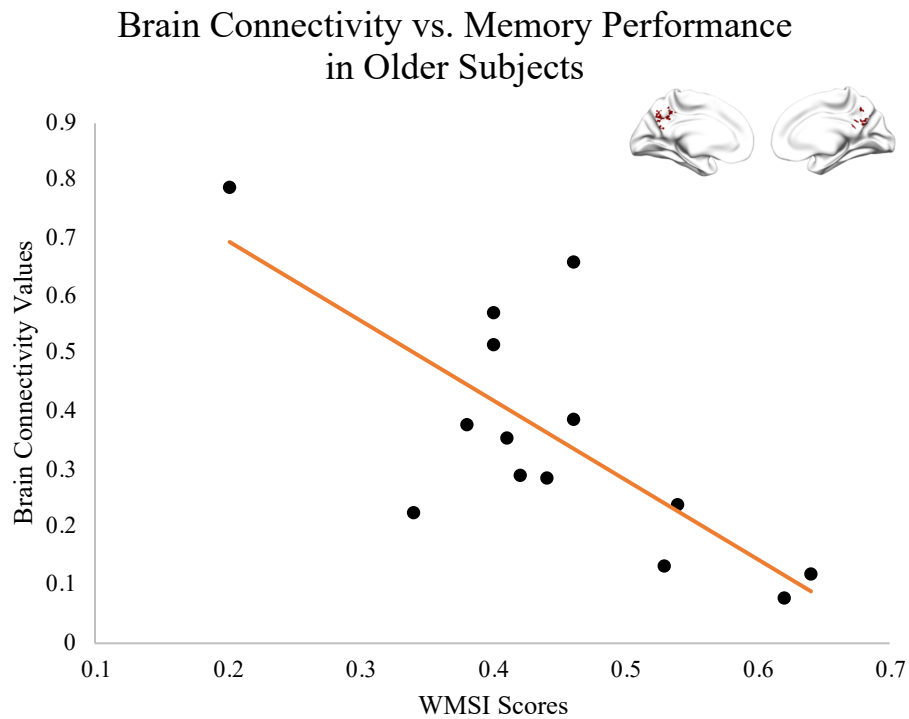
Supplemental Fig. 4. Functional brain connectivity is correlated with memory performance in older

adults. The insert shows ROI regions defined from EEG DMN analysis. Brain connectivity values are

calculated as the z-transformed correlation coefficients between individual's source matrix and activity

matrix, averaged from ROI. Each black dot represents one individual's brain connectivity and the

corresponding Wechsler Memory Scale Immediate Recall score. Orange trendline represents linear

relationship between these two variables ($r = -0.74$, $p = 0.003$).