Supplementary Online Content


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This supplementary material has been provided by the authors to give readers additional information about their work.
eFigure 1. Relationship Between Modality-Specific and Scaled Units for Memory (Panel A), HVa (Panel B), and Amyloid PET (Panel C)

A. Memory and learning performance in native and scaled units

B. HVa in native and scaled units

C. Amyloid PET in native and scaled units

The young normal (age 30-49) group was used to define the minimum (0) and the AD dementia...
(CDR 1-3) group was used to define the maximum (100) for the scaled units. MCSA subjects are grouped into 15 year age ranges, 50-64, 65-79, and 80-95. Horizontal dotted lines show the modality-specific units corresponding to a scaled value of 0, 50, and 100. A subject’s value in modality-specific units was scaled linearly using the following equations:

$$100 \times \frac{(\text{Memory} - 15.642)}{(-68.610 - 15.642)}$$

$$100 \times \frac{(\text{HVa} - 0.9004)}{(-5.0733 - 0.9004)}$$

$$100 \times \frac{(\text{SUVR} - 1.152)}{(2.980 - 1.152)}.$$ 

The derivations of the memory score (based on adjusting the seven-component AVLT for education and practice effects) and HVa (based on adjusting hippocampal volume for total intracranial volume) are described in the methods section. Based on our definitions, about 5% of young cognitively normal subjects will have a scaled value below 0 and 5% of the AD dementia subjects will have a scaled value above 100.
eFigure 2. Memory, HVa, and Amyloid PET in Scaled Units by Age With Subjects Broken Into Four Groups by Sex and APOE Genotype (APOE ε4 Carrier vs Noncarrier)

Solid lines represent the estimated median regression line while dotted lines indicate 95% bootstrap confidence intervals. Knots were placed at 50, 75, and 80 years of age. Values near 0 indicate normal values and values near 100 indicate most abnormal values.
eFigure 3. Estimated Median Regression Line for Memory, HVa, and Amyloid PET in Scaled Units vs Age by Sex and APOE Genotype (APOE ε4 Carrier vs Noncarrier)

Knots were placed at 50, 75, and 80 years of age. Orange lines represent the relationship between memory and age for each demographic group, blue lines represent relationship for HVa, and green lines represent relationship for amyloid PET.
eFigure 4. Plots of the Difference in Medians for Memory vs HVa (Row 1), Memory vs Amyloid PET (Row 2), and HVa vs Amyloid PET (Row 3) for Ages 30 to 90 by Demographic Group (Columns) in Scaled Units

The solid line in each plot indicates the estimated difference in medians while the dotted lines indicate 95% bootstrap confidence intervals for this difference. A horizontal line at 0, i.e., no difference, is shown for reference.