Supplementary Online Content

Mattsson N, Insel PS, Nosheny R, et al; Alzheimer's Disease Neuroimaging Initiative. Emerging β-amyloid pathology and accelerated cortical atrophy. *JAMA Neurol*. Published online April 28, 2014. doi:10.1001/jamaneurol.2014.446

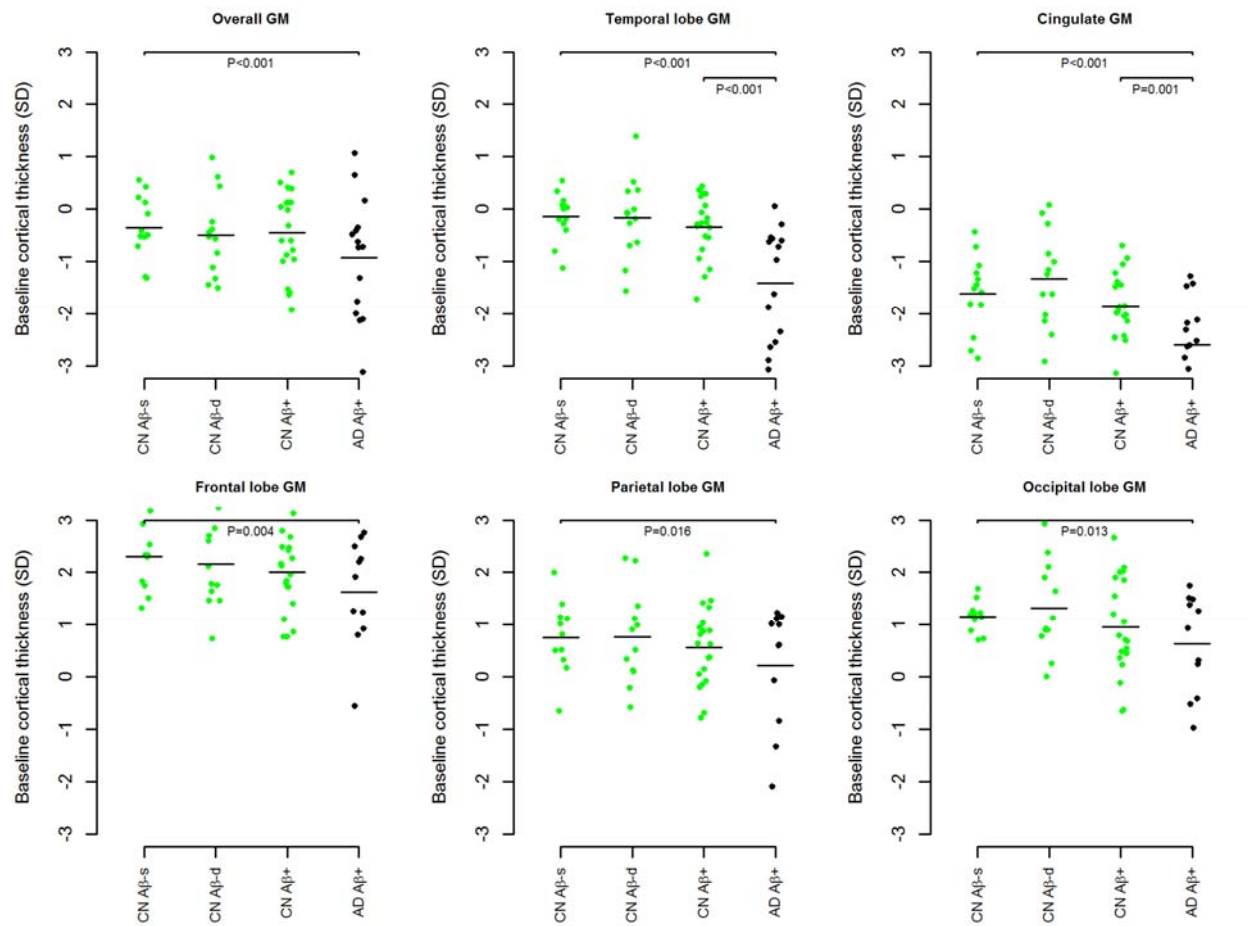**eFigure 1.** Baseline Cortical Thickness in A Priori Defined Gray Matter (GM) Regions

eFigure 2. Atrophy Rates (Cortical Thickness) in A Priori Defined Gray Matter (GM) Regions

eFigure 3. Baseline Volumes in A Priori Defined Gray Matter (GM) Regions, Including All Participants

eFigure 4. Atrophy Rates in A Priori Defined Gray Matter (GM) Regions, Including All Participants

This supplementary material has been provided by the authors to give readers additional information about their work.

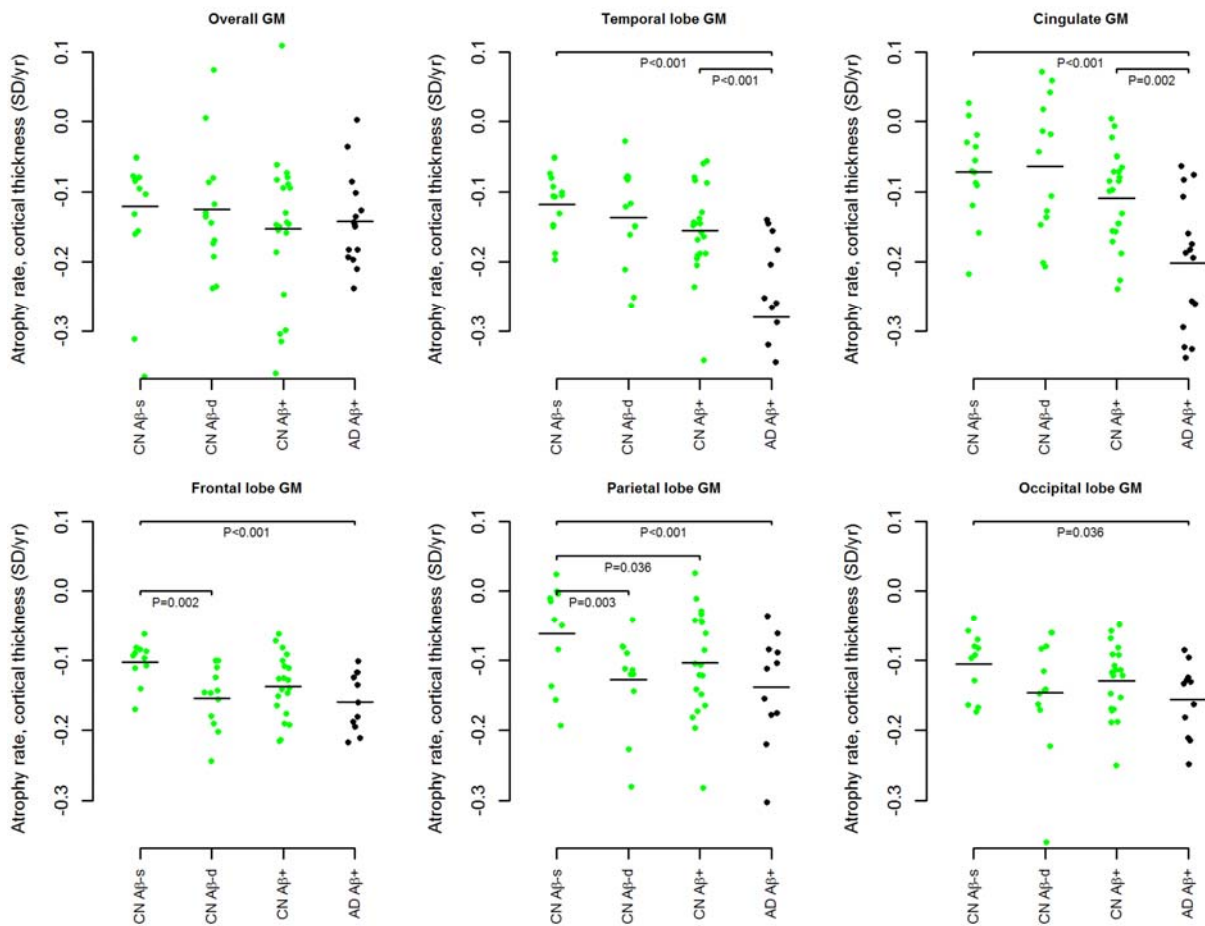**eFigure 1.** Baseline Cortical Thickness in A Priori Defined Gray Matter (GM) Regions

Baseline cortical thickness in stable Aβ negative normal controls (CN Aβ-s), declining Aβ negative normal controls (CN Aβ-d), Aβ positive normal controls (CN Aβ+), and Aβ positive AD dementia patients (AD Aβ+). Thicknesses are centered and standardized. Baseline thicknesses are modeled data from linear mixed effects models (intercepts), adjusted for age, sex, education, and *APOE* genotype. Horizontal lines are mean values. Significances are indicated for the group effects (pair-wise comparisons; CN Aβ-s vs. CN Aβ-d, CN Aβ-s vs. CN Aβ+, CN Aβ-s vs. AD Aβ+, and CN Aβ+ vs. AD Aβ+). When correcting for multiple comparisons (false discovery rate), the differences that remained significant were (*, $P<0.05$; **, $P<0.01$; ***,

P<0.001): overall GM, CN Aβ-s vs. AD Aβ+ (***); temporal GM, CN Aβ-s vs. AD Aβ+ (***),

CN Aβ+ vs. AD Aβ+ (***); cingulate GM, CN Aβ-s vs. AD Aβ+ (***), CN Aβ+ vs. AD Aβ+

(**); frontal GM, CN Aβ-s vs. AD Aβ+ (*); parietal GM, CN Aβ-s vs. AD Aβ+ (*); occipital

GM, CN Aβ-s vs. AD Aβ+ (*).

eFigure 2. Atrophy Rates (Cortical Thickness) in A Priori Defined Gray Matter (GM) Regions
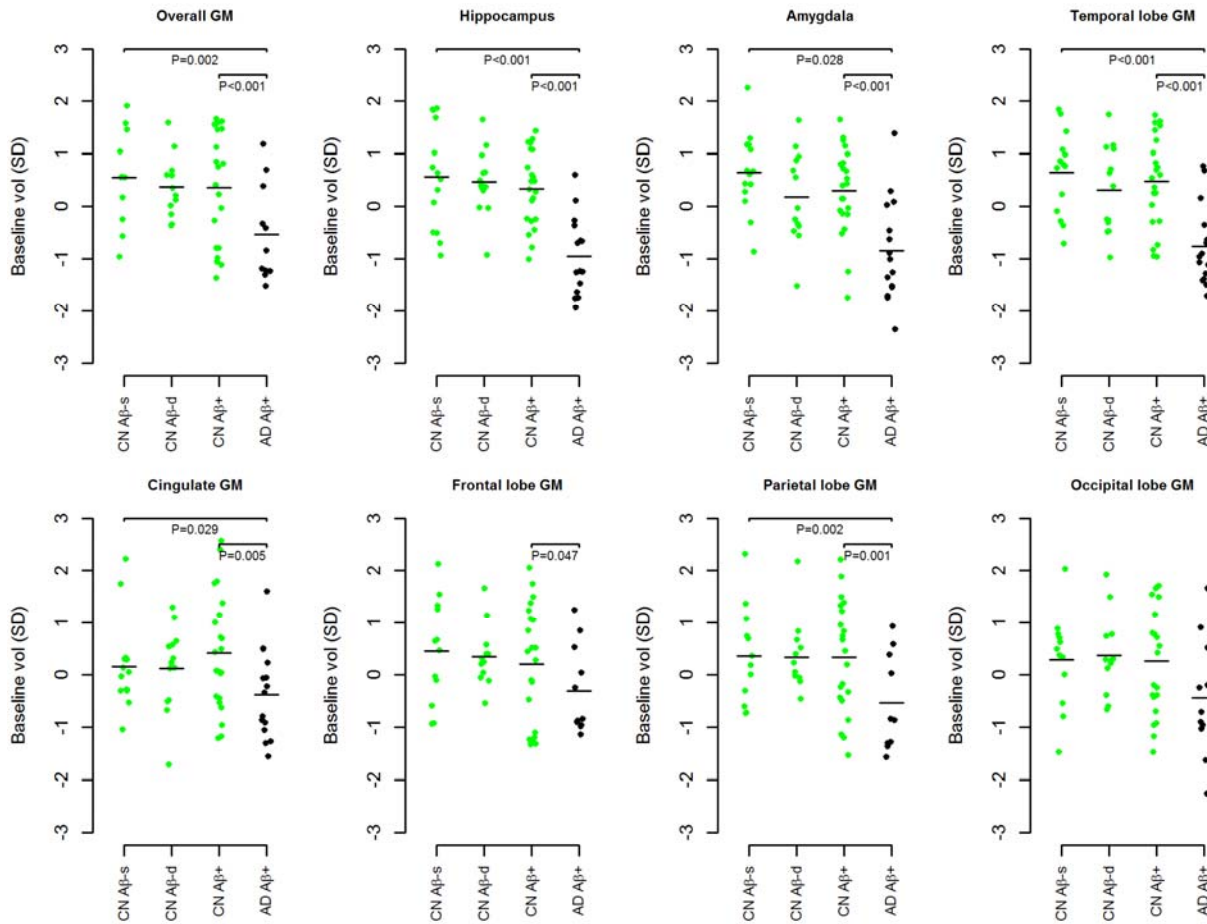

. Rate of change in cortical thickness in stable Aβ negative normal controls (CN Aβ-s), declining Aβ negative normal controls (CN Aβ-d), Aβ positive normal controls (CN Aβ+), and Aβ positive AD dementia patients (AD Aβ+). Thicknesses are centered and standardized. Rates are modeled data from linear mixed effects models (slopes), adjusted for age, sex, education, and *APOE* genotype. Horizontal lines are mean values. Significances are indicated for the group effects (pair-wise comparisons; CN Aβ-s vs. CN Aβ-d, CN Aβ-s vs. CN Aβ+, CN Aβ-s vs. AD Aβ+, and CN Aβ+ vs. AD Aβ+). When correcting for multiple comparisons (false discovery rate), differences that remained significant were (*, P<0.05; **, P<0.01; ***, P<0.001): temporal GM,

CN Aβ-s vs. AD Aβ+ (***), CN Aβ+ vs. AD Aβ+ (***); cingulate GM, CN Aβ-s vs. AD Aβ+ (***), CN Aβ+ vs. AD Aβ+ (**); frontal GM, CN Aβ-s vs. CN Aβ-d (**), CN Aβ-s vs. AD Aβ+ (**); parietal GM, CN Aβ-s vs. CN Aβ-d (**), CN Aβ-s vs. AD Aβ+ (**);parietal GM, CN Aβ-s vs. CN Aβ-d (**), CN Aβ-s vs. AD Aβ+ (**).

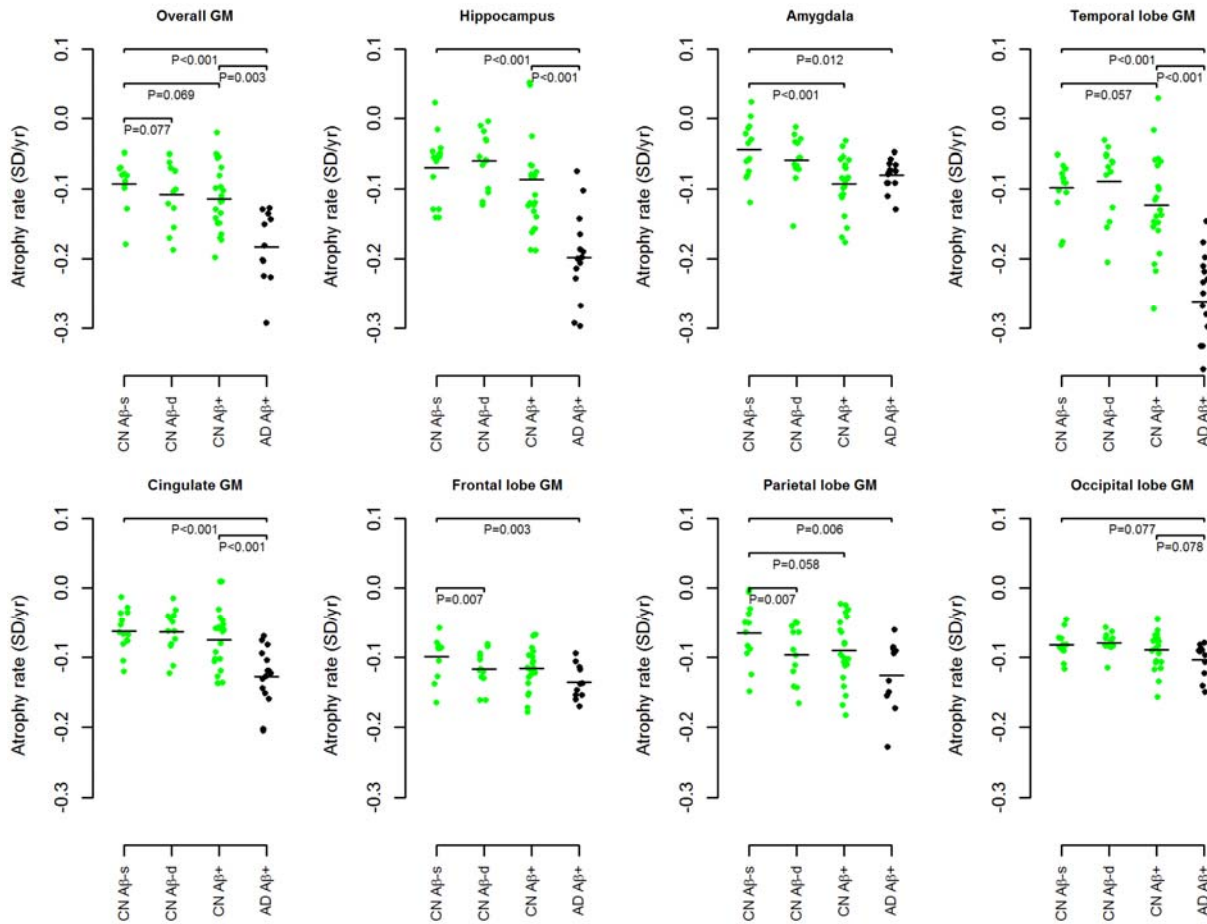**eFigure 3.** Baseline Volumes in A Priori Defined Gray Matter (GM) Regions, Including All

Participants

This analysis includes data from 5 subjects, where data was removed in the main analyses, as

explained in the methods section. The results were similar to the main results.

Rates of volume change. This analysis includes data from 5 subjects, where data was removed in the main analyses, as explained in the methods section. The results were similar to the main results.