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Patterns of progressive atrophy vary with age in Alzheimer's disease patients

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1 **Patterns of progressive atrophy vary with age in**

2 **Alzheimer's disease patients**

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17 *Data used in preparation of this article were obtained from the Alzheimer's Disease Neuroimaging
18 Initiative (ADNI) database (adni.loni.usc.edu). As such, the investigators within the ADNI contributed
19 to the design and implementation of ADNI and/or provided data but did not participate in analysis or
20 writing of this report. A complete listing of ADNI investigators can be found at:

21 http://adni.loni.usc.edu/wp-content/uploads/how_to_apply/ADNI_Acknowledgement_List.pdf

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25 **Abbreviations:** 95% CI (95% confidence interval), ADNI (Alzheimer's Disease Neuroimaging
26 Initiative), AD (Alzheimer's disease), A β (amyloid beta), BSI (Boundary Shift Integral), CSF
27 (cerebrospinal fluid), FWE (Family Wise Error), GM (grey matter), MCI (mild cognitive impairment),
28 MRI (magnetic resonance imaging), VBM (voxel based morphometry), TIV (Total intracranial volume),
29 WM (white matter), WMH (white matter hyperintensity), DARTEL (Diffeomorphic Anatomical
30 Registration Through Exponentiated Lie-algebra), GWAS (Genome Wide Association Study), Region
31 of Interest (ROI), SVD (Small Vessel Disease), MMSE (Mini-Mental State Examination)

32 **Highlights (limited to 85 characters for each bullet, including spaces):**

- 33 • Atrophy rates are greater at younger ages in MCI and AD patients
- 34 • Younger patients atrophy more in the precuneus, parietal and superior temporal lobes
- 35 • APOE genotype and WMH volume do not account for the atrophy patterns with age
- 36 • Clinical trials in younger AD patients may benefit from revised outcome measures

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