ON-LINE APPENDIX: SUPPLEMENTARY MATERIAL
Region of Interest Analysis and Data Extraction

Anatomic segregation was performed with MRIcro (http://www.mricro.com) by manual segmentation (Fig 1). The coronal plate was defined as the default plane for labeling; volumetric definitions were consistently used by interfering with the cortical borders of the hippocampus in the sagittal and axial planes according to Pruessner et al.[1] The HH was defined as the 4 cornu ammonis subregions and the subiculum, including the part of the hippocampus that is located between the uncal recess of the lateral ventricle, the alveus, and the uncal cleft. The definition of the HB in this study was made by identifying the dentate gyrus, the CA regions, and the subiculum, with the emergence of the uncal recess as the most anterior border, the lateral ventricle as the lateral border, and the superior excess of the quadrigeminal cistern as the superomedial border. The hippocampus was further used as a as reference for the medial border of the entorhinal cortex. The lateral border of the entorhinal cortex was defined as the midpoint of the medial bank of the collateral sulcus, the medial and anterior border at the level of the limen insulae, and the posterior border behind the end of the uncus gyri parahippocampalis.[2,3]

Additionally a region of interest was drawn at the anterior part of the IN between the superior and the inferior peri-insular sulci and from the anterior peri-insular sulcus to the limen insulae, encompassing the anterior and middle short gyri[4] and at the level of the anterior and middle short gyrus of the insula. TP covered the basal temporal lobe including the inferior and middle temporal gyri at the level of the anterior insula. For every VOI, we used a rigid registration to map it onto the target MRI. In order to project these regions from a reference data template (Fig 1) in MNI space (SPM Anatomy toolbox, colin27T1; colin27T1; http://www2.fz-juelich.de/inm/index.php?index=194) into the individual brains, the SPM5 (Wellcome Department of Imaging Neuroscience, London, UK) warping algorithms and matrices were used. The warp transformation is accomplished in 2 steps: First the template is transformed to the transversal R1 (1/T1) maps of the individual patient (without marked regions to avoid errors). The transformation matrix is then used to transform the region data (regions selected on the template, but separately stored as analyzed data).

Because age-related volume loss represents the cumulative effect of all physiologic changes in the entire brain during the aging process, we incorporated global intracranial/gray matter volume (TIV/GM) ratios to check for age-related intergroup differences in the AD, MCI, and CTRLs cohorts.[5,6] The magnetization transfer parameter values, used for the automated classification, represent the mean overall voxels within a selected VOI. The reference standard for the numeric classification into 3 subgroups of patients with MCI and AD and CTRLs was defined by the results of the CERAD classification score and the psychiatric examination at first referral, because this score has been demonstrated to differentiate patients with mild AD and those with MCI from CTRLs.[7,8]

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