

## Volumetric segmentation and surface parcellations of ex vivo 7T T2w MRI

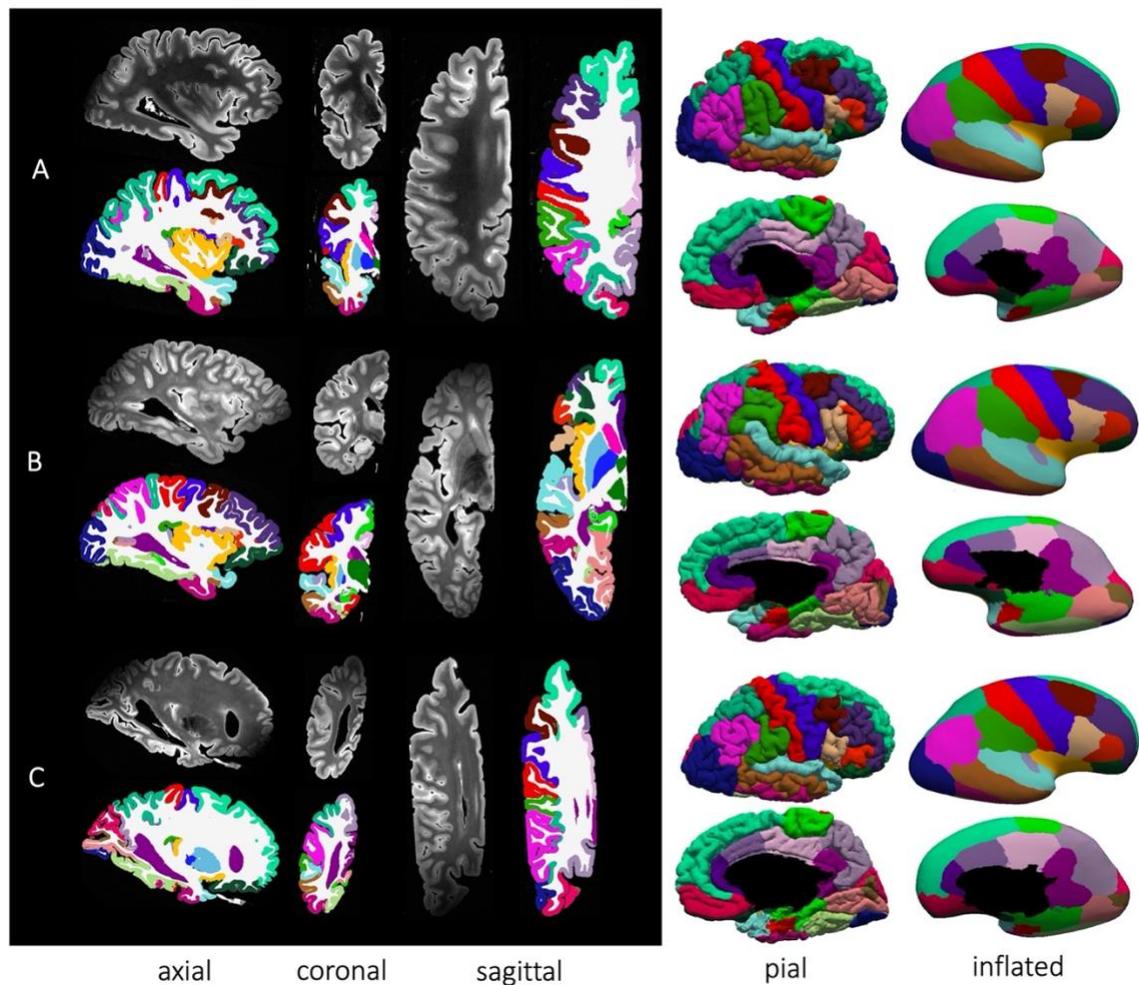


Fig. 1. Ex vivo MRI segmentations and parcellations. Axial, coronal and sagittal viewing planes of ex vivo MRI at 0.3 mm<sup>3</sup> resolution for three subjects (A, B and C) with corresponding DKT volumetric segmentations and surface-based parcellations on pial and inflated surfaces for the medial and lateral views in native subject space resolution. Our method is able to correctly delineate the brain even in regions where the MR signal contrast is low in the anterior and the posterior brain MRI due to artifacts in acquisition protocol. Legend: See Fig. 2.

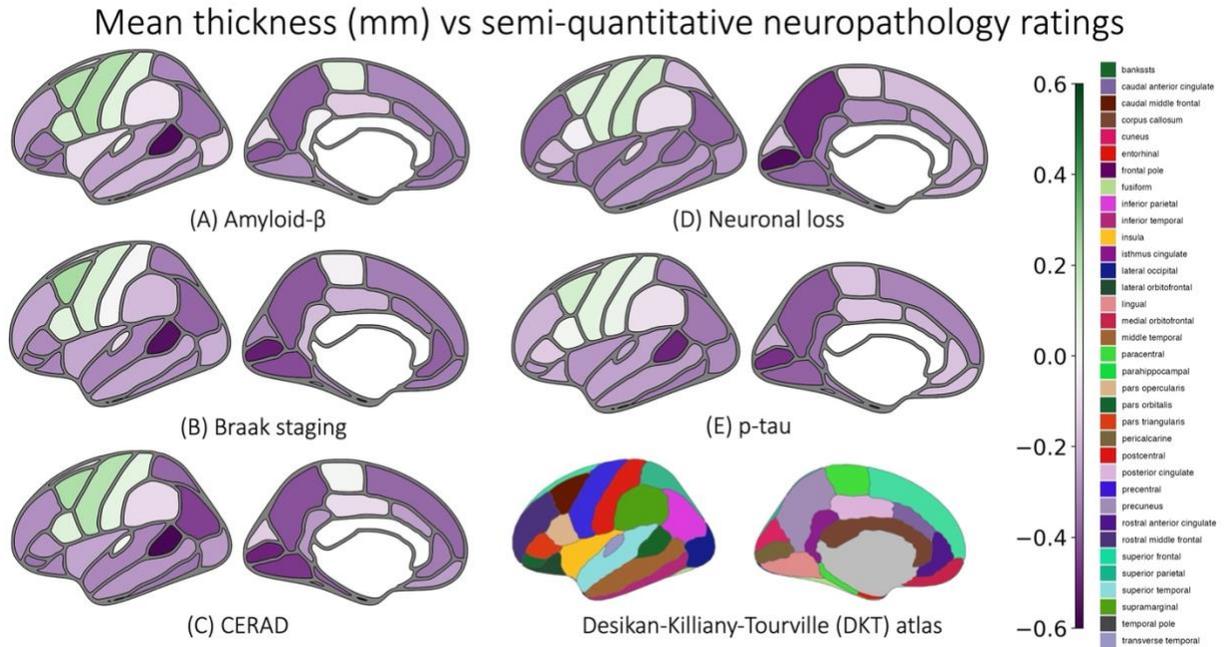


Fig. 2. Spearman's correlation plots between mean ROI thickness (mm) and neuropathological ratings in native subject-space. We observe significant negative correlation with global ratings of amyloid- $\beta$ , Braak staging, CERAD, and the semi-quantitative ratings of the medial temporal lobe (MTL) neuronal loss and tau pathology. All the analysis were covaried for age, sex and postmortem interval (PMI) for the entire cohort of 82 subjects. See legend for the regional brain labels.

### Generalized linear model (GLM) for vertex-wise thickness (mm) vs neuropathology ratings

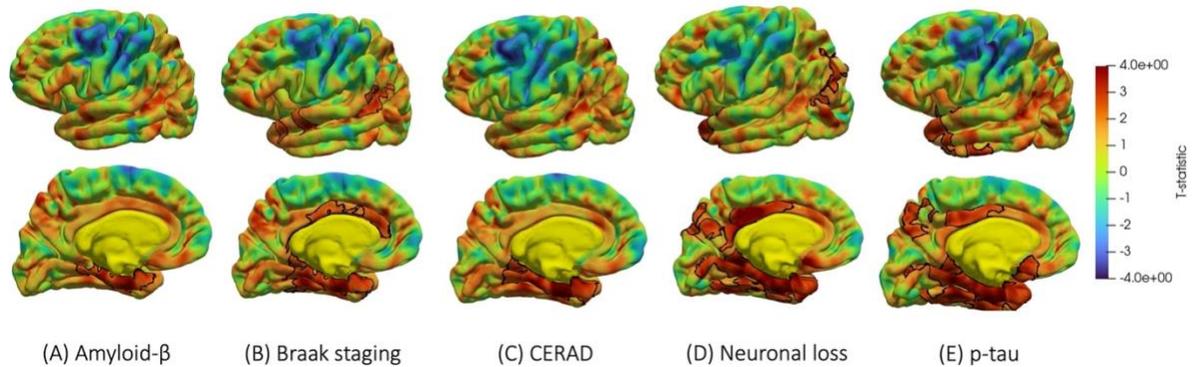
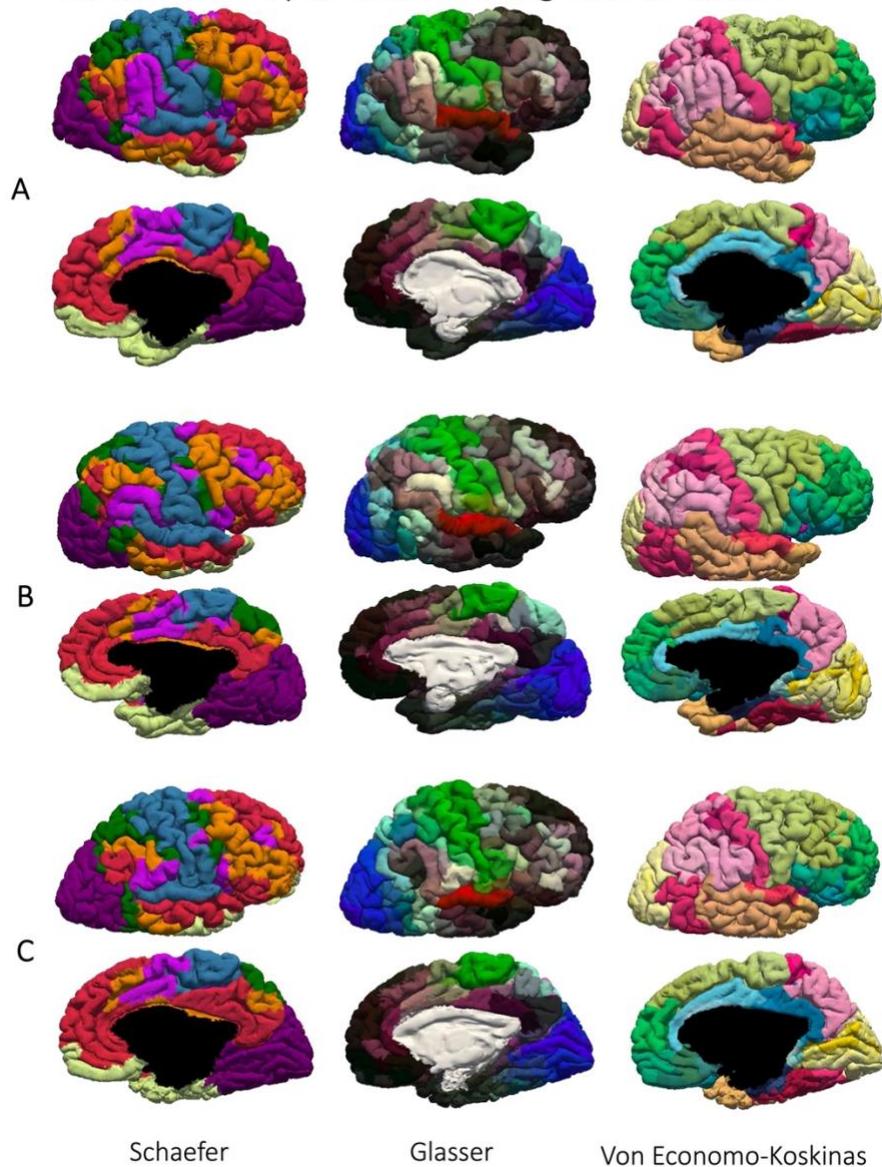


Fig. 3. Template-space vertex-wise morphometry-pathology correlations. Vertex-wise group analysis was performed to fit a generalized linear model (GLM). Shown are the statistical map (t-statistics) of the correlation between cortical thickness (mm) and with global ratings of amyloid- $\beta$ , Braak staging, CERAD, and semi-quantitative ratings of the medial temporal lobe and neuronal loss and tau pathology, with age, sex and postmortem interval (PMI) as covariates across all 82 subjects. The clusters outlined in black indicate regions significant correlation ( $p < 0.05$ ).

### Surface-based parcellation using various atlases



Supplement: Schaefer, Glasser and the Von Economo-Koskinos surface-based parcellations for ex vivo MRI. Shown here are the surface-based parcellations on pial and inflated surfaces for the medial and lateral views for the three subjects (A, B and C) from Fig. 2 in the main paper in native subject-space resolution for the Schaefer, Glasser, and the Von Economo-Koskinos atlases.