

Sex differences in the association between plasma GFAP and fornix white matter properties in the PREVENT-AD cohort

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Question: Can baseline plasma GFAP, sex, and amyloid PET status predict changes in neuroinflammation as measured by intravoxel freewater?



A research centre affiliated with:



Study cohort and design

- 234 participants from the Pre-symptomatic Evaluation of Experimental or Novel Treatments for Alzheimer's Disease (PREVENT-AD) cohort

Timepoint 1	Timepoint 2
<ul style="list-style-type: none">• Plasma GFAP• Amyloid PET scan with [18]F-NAV-4694• Diffusion-weighted MRI• Demographic interview	<ul style="list-style-type: none">• Diffusion-weighted MRI

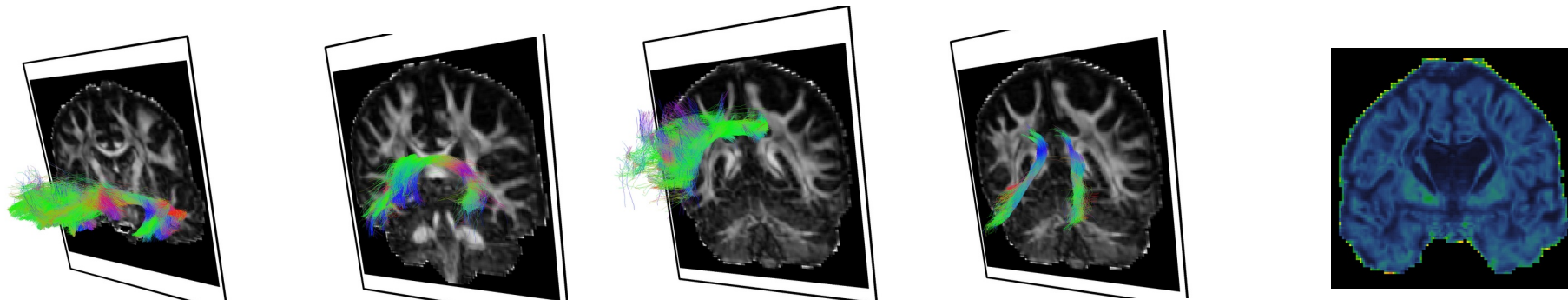


163 71



65.7 ± 7.1 years old

- Tractography analysis in four white matter bundles associated with Alzheimer's disease: uncinate fasciculus, fornix, anterior cingulum, & posterior cingulum



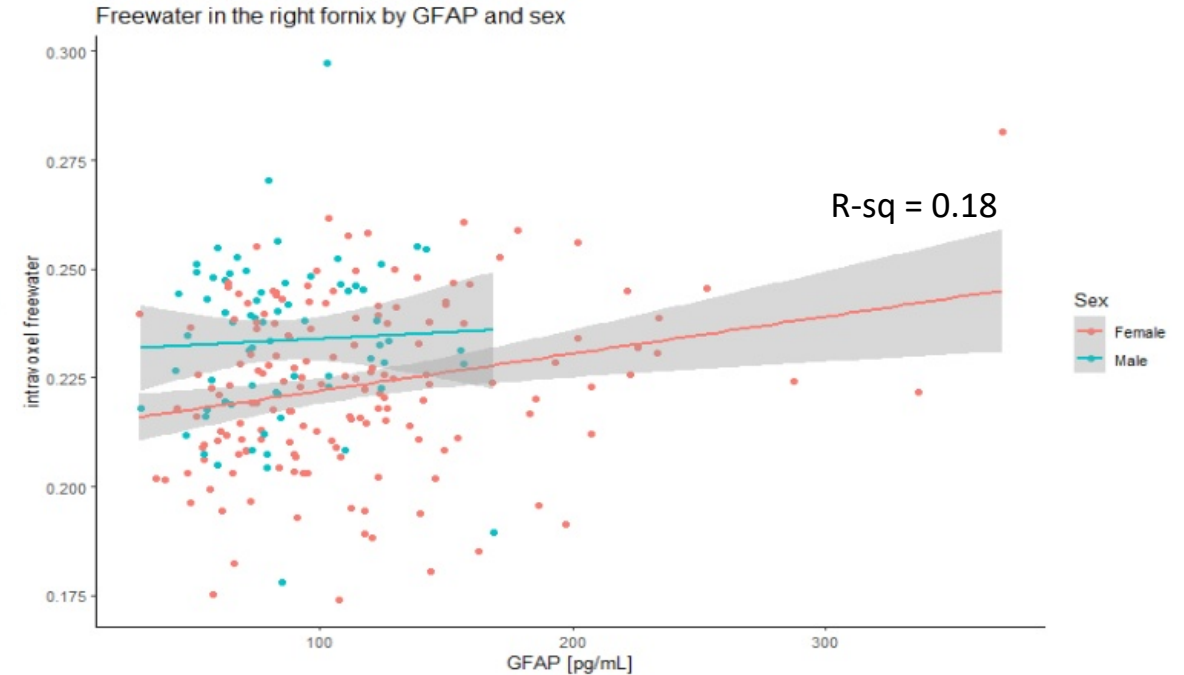
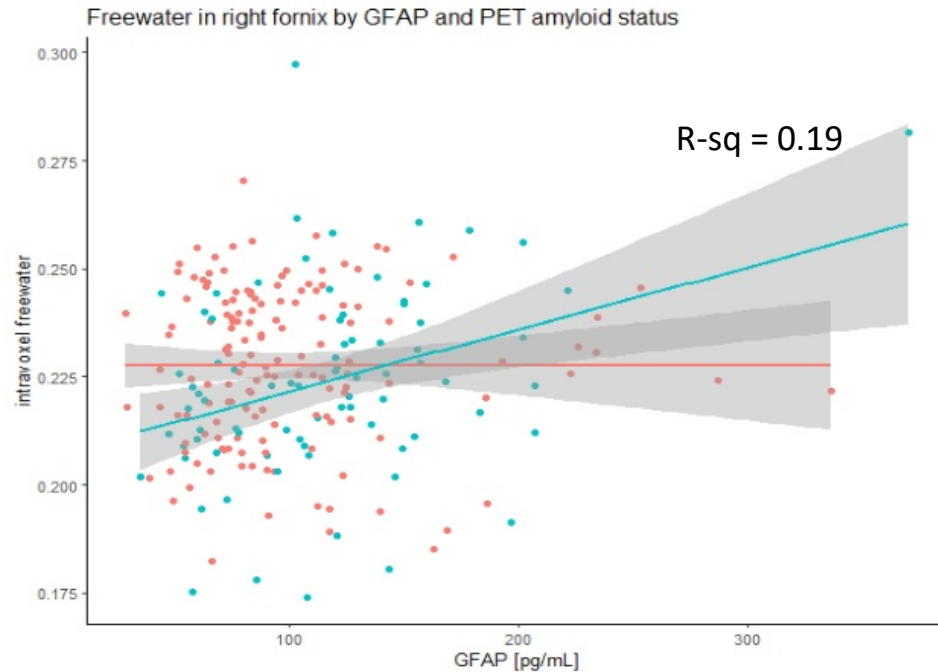
A β -PET +

80 positive
SUVR > 1.27



Mean time
btwn scans:
72 ± 32 months

Results and Interpretations



- Amyloid-positive participants at baseline with elevated GFAP had greater increase in freewater
- Female had lower baseline freewater ($p < 0.01$), but higher baseline GFAP ($p < 0.01$) which correlated with greater increases in freewater
- Young cohort \rightarrow effects constrained to early AD regions (Braak 1-2; Thaal 1)
- **Limitation:** Left fornix segmentation had lower volume ($p < 0.01$) and captured less freewater. Possible reason of mono-lateral effects.