Evaluation of Longitudinal Plasma Biomarkers Trajectories across Cognitively Unimpaired Older Adults at Risk of Alzheimer's Disease

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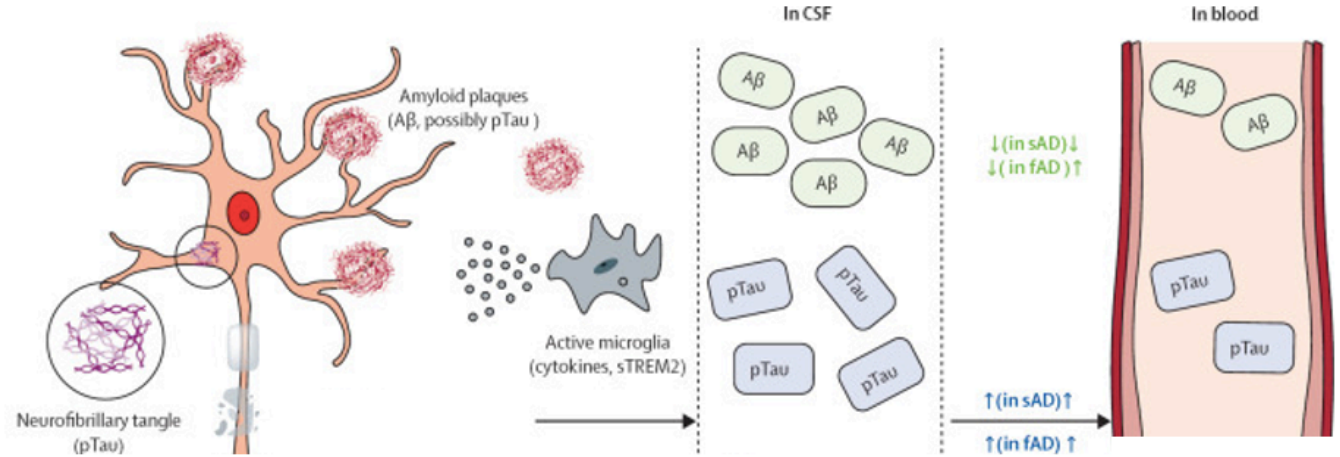
Background

Teunissen et al., 2021



Objective

Assess blood-biomarkers temporal trajectories in cognitively unimpaired older adults at different pathological stages as assessed by positron emission tomography (PET).

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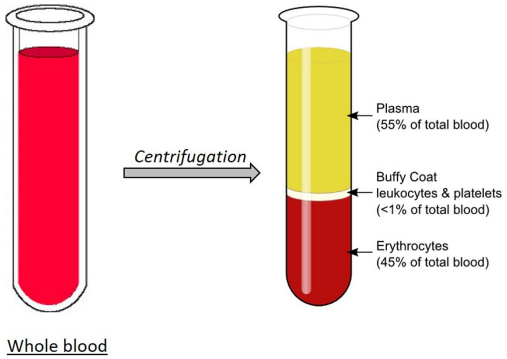
Methods

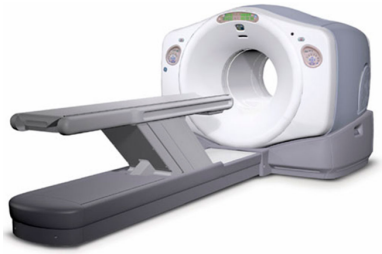
Blood draws collected between (2011-2017)

$A\beta_{42,40}$, pTau181, and pTau231 were measured using (SiMoA)



Subsample (N = 127) of participants completed Aβ (^{18}F-NAV4694) and tau (^{18}F-Flortaucipir) PET scans

- Aβ-PET SUVR threshold (defined by the global neocortical retention) = 1.29
- Tau-PET SUVR threshold (defined by entorhinal cortex) = 1.23



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PET status (N = 127)	N
A-T-	84
A+T-	27
A+T+	15
*A-T+	1

*excluded from the analysis

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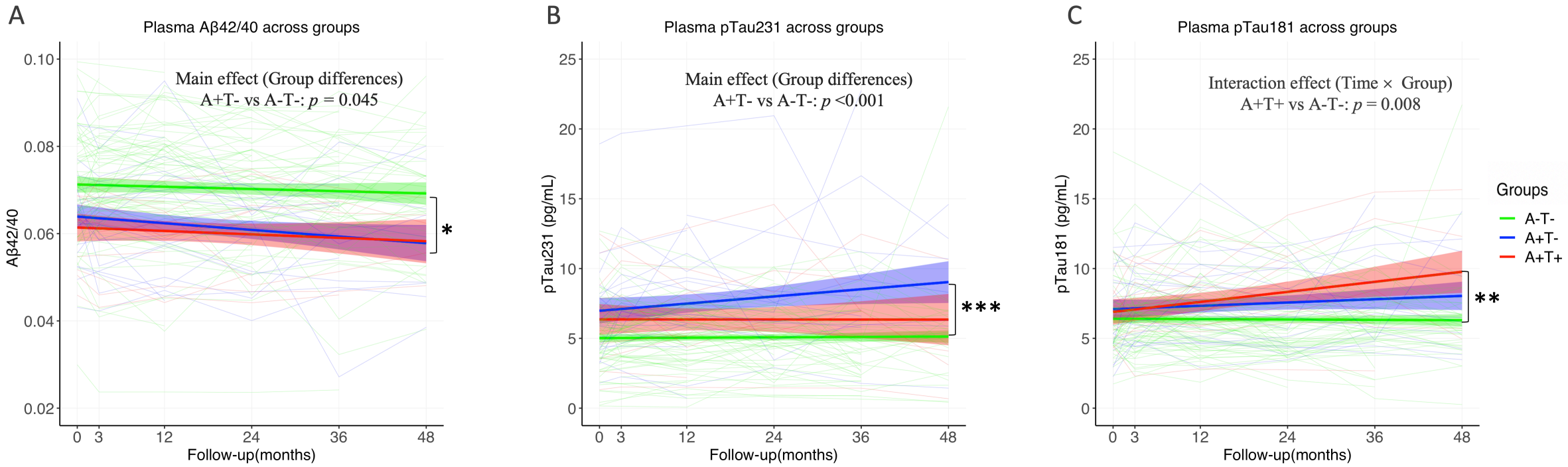
Results

Longitudinal plasma $A\beta_{42/40}$, pTau231, and pTau181 slopes among different pathological groups assessed by PET



Summary

- Increase in pTau231 levels among amyloid pathology group; decrease in plasma $A\beta_{42/40}$ levels among the group with amyloid pathology; Increase in pTau181 plasma levels overtime among individuals with both amyloid and tau pathology on PET.
- Potential utility of plasma markers in tracking the disease progression

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