

Plasma GFAP And P-tau217 Across Centiloid Scales: Associations With Amyloid/Tau, Cortical Atrophy, And Cognitive Decline

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Plasma P-tau217 tracks early Aβ and co-mediates tau pathology with GFAP; together, they provide stage-specific indicators for neurodegeneration and cognitive decline across varying Centiloid scales.

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	REFERENCES
The Centiloid (CL) value offers a standardized metric for quantifying amyloid-β (Aβ) levels in the brain. We aimed to investigate the associations of plasma phosphorylated tau 217 (P-tau217) and glial fibrillary acidic protein (GFAP) with: - Aβ/tau accumulation - Cortical atrophy - Cognitive decline These associations were evaluated across varying CL scales to understand stage-specific biomarker dynamics.	Participants: 1,346 with different cognitive stages. Stratification: CL≤10、10<CL≤30、CL>30 Assessments: - AV45-PET (n=1346) - MK6240-PET(n=604) - structural MRI (sMRI) - Plasma P-tau217, GFAP Analysis: Adjusted regression models for associations of plasma biomarkers with Aβ/tau burden, cortical atrophy, and cognitive decline.	Figure 2: Mediating effects of plasma GFAP and P-tau217 between Centiloid (CL) values and MK6240 SUVR (temporal metaROI) across various CL scales. The diagram shows sequential mediating effects for CL≤10 and CL>10 groups. Figure 4: Beta coefficients (β) and 95% confidence intervals (CI) for associations of plasma P-tau217 and GFAP with cognitive decline across CL scales. The figure shows two main panels for CL≤10 and CL>10, each with subplots for Memory, Language, Executive function, and Visuospatial ability. Plasma P-tau217 was predominantly associated with cortical atrophy and cognitive decline in the CL>10 group, while GFAP played a predominant role in these associations within the CL≤10 group.	- Plasma P-tau217 tracks early Aβ accumulation within the 10<CL≤30 range. - Plasma GFAP and P-tau217 serve as sequential mediators of downstream tau pathology. - Plasma GFAP and P-tau217 may reflect neurodegeneration and cognitive decline across diverse CL scales.	Feng-Feng Pan, et al. Plasma P-tau217, GFAP, and NfL as biomarkers for Alzheimer's disease: role in disease stratification, pathological progression, and cognitive decline. <i>Alzheimers Dement.</i> 2025 Dec; 21(12):e70987. Lin Huang, et al. Associations of plasma GFAP and P-tau217 with imaging ATN markers and cognitive decline across Centiloid scales. <i>Lancet Reg Health West Pac.</i> 2026 Feb 20;68:101817.
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