

Plasma biomarker

Plasma biomarkers are promising tools for [Alzheimer's disease diagnosis](#), but comparisons with more established [biomarkers](#) are needed.

Therriault et al. assessed the diagnostic performance of [p-tau181](#), [p-tau217](#), and [p-tau231](#) in [plasma](#) and [CSF](#) in 174 individuals evaluated by [dementia](#) specialists and assessed with [amyloid-PET](#) and tau-PET. [Receiver operating characteristic](#) (ROC) analyses assessed the performance of plasma and CSF biomarkers to identify amyloid-PET and tau-PET positivity.

Plasma p-tau biomarkers had lower dynamic ranges and effect sizes compared to CSF p-tau. Plasma p-tau181 (AUC = 76%) and p-tau231 (AUC = 82%) assessments performed inferior to CSF p-tau181 (AUC = 87%) and p-tau231 (AUC = 95%) for amyloid-PET positivity. However, plasma p-tau217 (AUC = 91%) had diagnostic performance indistinguishable from CSF (AUC = 94%) for amyloid-PET positivity.

Discussion: Plasma and CSF p-tau217 had an equivalent diagnostic performance for biomarker-defined AD. Our results suggest that plasma p-tau217 may help reduce the need for invasive lumbar punctures without compromising accuracy in the identification of AD.

Highlights: p-tau217 in plasma performed equivalent to p-tau217 in CSF for the diagnosis of AD, suggesting the increased accessibility of plasma p-tau217 is not offset by lower accuracy. p-tau biomarkers in plasma had lower mean fold-changes between amyloid-PET negative and positive groups than p-tau biomarkers in CSF. CSF p-tau biomarkers had greater effect sizes than plasma p-tau biomarkers when differentiating between amyloid-PET positive and negative groups. Plasma p-tau181 and plasma p-tau231 performed worse than [p-tau181](#) and p-tau231 in CSF for AD diagnosis ¹⁾

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Therriault J, Servaes S, Tissot C, Rahmouni N, Ashton NJ, Benedet AL, Karikari TK, Macedo AC, Lussier FZ, Stevenson J, Wang YT, Fernandez-Arias J, Stevenson A, Socualaya KQ, Haeger A, Nazneen T, Aumont É, Hosseini A, Rej S, Vitali P, Triana-Baltzer G, Kolb HC, Soucy JP, Pascoal TA, Gauthier S, Zetterberg H, Blennow K, Rosa-Neto P. Equivalence of plasma p-tau217 with cerebrospinal fluid in the diagnosis of Alzheimer's disease. *Alzheimers Dement*. 2023 Apr 20. doi: 10.1002/alz.13026. Epub ahead of print. PMID: 37078495.

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