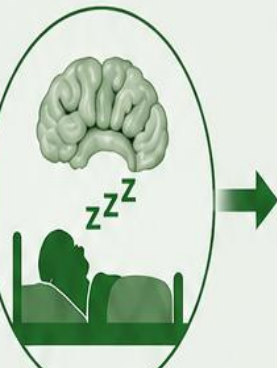
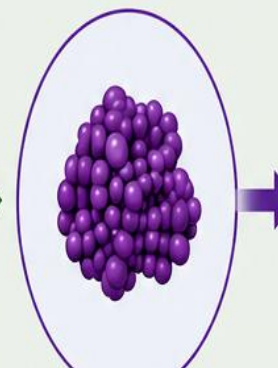
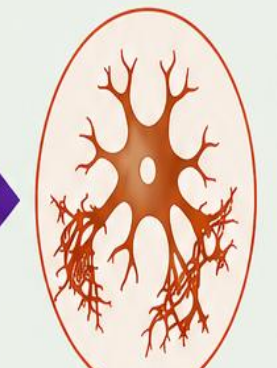
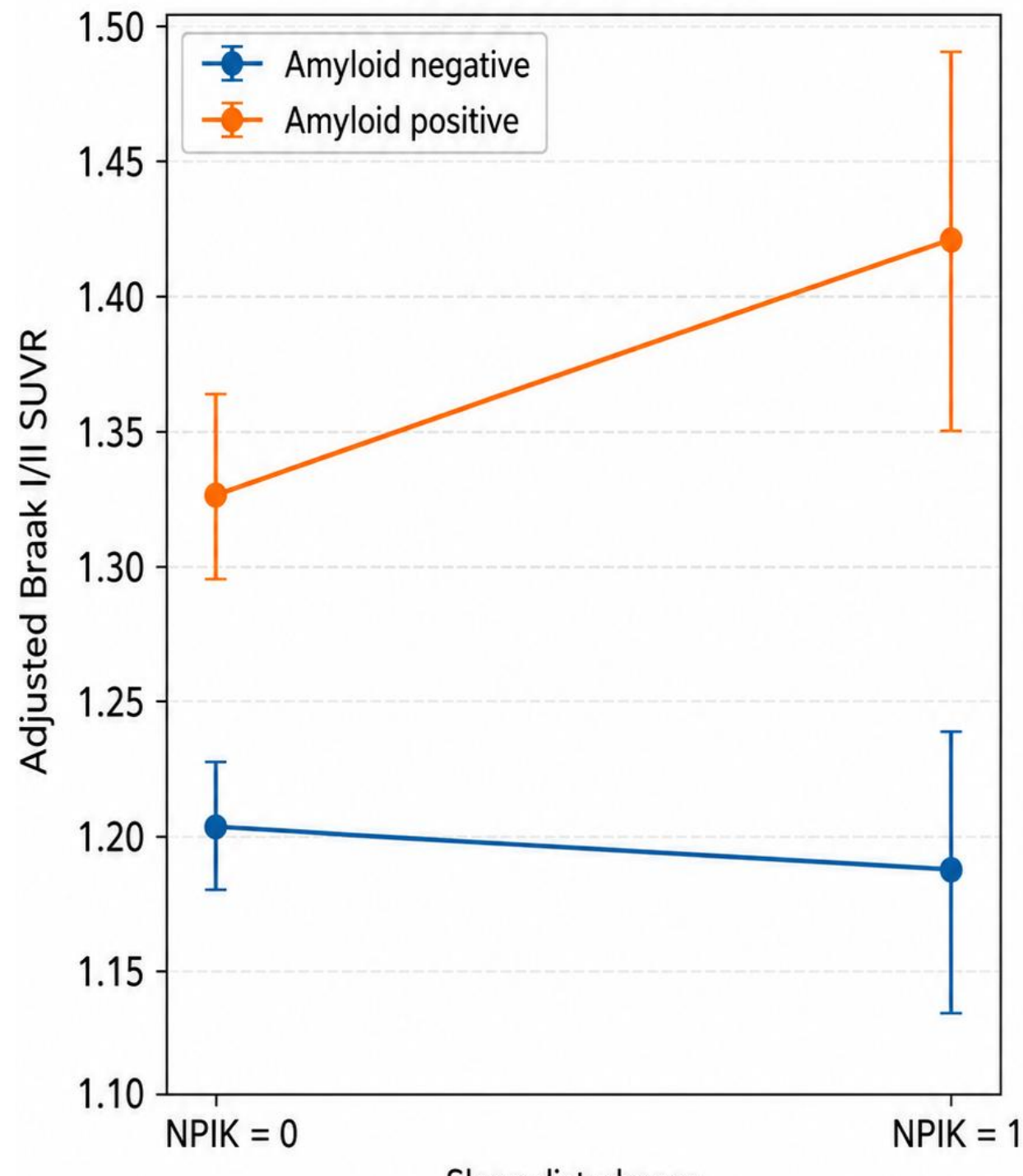


Amyloid-Dependent Links Between Sleep Disturbances and Early Tau Pathology in Aging

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KEY TAKE AWAY: Sleep disturbances alone was not linked to higher early tau, but its relationship with tau appeared to depend on amyloid status. Sleep disturbances may be more relevant among A β -positive older adults, although larger studies are needed to confirm this pattern.

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	REFERENCES
1 Sleep disturbance is common in aging and may reflect early AD. Sleep disturbance in older adults    Trouble sleeping Waking up frequently Non-restorative sleep 2 Sleep disturbance and amyloid-β (Aβ) are linked to tau accumulation.    Sleep disturbance Amyloid-β (Aβ) Tau accumulation 3 It is unclear whether the sleep-tau link differs by Aβ status.    Aβ-negative Aβ-positive Does sleep disturbance relate to early tau burden differently depending on Aβ status?	Sample: Alzheimer’s Disease Neuroimaging Initiative (ADNI) participants with Braak I/II tau PET data (n=606) Baseline: First available tau PET scan Sleep disturbance: NPI-Q binary measure (0=no; 1=yes) Analysis: Linear regression tested the sleep–tau association and the sleep $\times$ Aβ interaction Covariates: Age, sex, education, APOE4, and Aβ status	Adjusted interaction effect of amyloid status and sleep disturbance on Braak I/II SUVR  Pooled model: BRAAK_I_II_SUVR ~ AGE + APOE4 + PTEDUCAT + SEX + AB_STATUS + NPIK + AB_STATUS:NPIK AB_STATUS β = 0.1240, p = 0.0000 NPIK β = -0.0115, p = 0.6687 AB_STATUS $\times$ NPIK β = 0.1045, p = 0.0229 Adjusted predictions shown at AGE=70.8, APOE4=0.42, PTEDUCAT=16.6, SEX=Female	Sleep disturbances were not independently associated with early tau burden -- may be more relevant to tau pathology in Aβ-positive older adults. Sleep–tau relationship differed by Aβ status and may be stronger in Aβ-positive older adults. Larger and longitudinal studies are needed to confirm this pattern and clarify underlying mechanisms.	Kim et al. (2024). Impaired sleep, tau deposition, and cognitive decline. *J Neurol Sci, 458*, 122927. Shokouhi & ADNI. (2019). Informant-reported sleep and AD pathology. *Clin Interv Aging, 14*, 1631–1642. Aguilar-Dominguez et al. (2025). Neuropsychiatric symptoms, amyloid, and later tau burden. *J Prev Alzheimers Dis, 9*, 100294.
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