Participants and Methods: Black (n=57) and White (n=127) participant data were collected during clinical neuropsychological evaluations, which included the VNT alongside other cognitive measures. A multiple regression was utilized controlling for age, educational level, cognitive diagnosis, educational quality via reading level, and race to investigate if race would remain a significant predictor of test performance.
Results: Results suggested that race was still a significant predictor (p = .003) of VNT scores despite efforts to control other sources of variance. Additionally, other cognitive measures such as WAIS-IV Block Design (p = .004) and D-KEFS Tower Test (p = .004) also showed statistically significant relationships with race in the same model, whereas verbal memory (CVLT) and verbal fluency (D-KEFS) did not. The NAB Naming analysis violated the assumption of homoscedasticity; therefore, results with the NAB Naming test were not further interpreted.
Conclusions: These results suggest that race is a significant predictor of performance on some cognitive measures, including the VNT. However, it did not predict performance on verbal memory or verbal fluency. Future investigations of racial differences on neuropsychological test performance would benefit from consideration of variables that may account for discrepancies between White and Black examinees. Several proxy variables could include educational quality, acculturation, and economic status.

Categories: Inclusion and Diversity/Multiculturalism
Keyword 1: naming
Keyword 2: ethnicity
Keyword 3: minority issues
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32 Elevated Plasma pTau-181 is Associated with Lower Global Cognition and Executive Function in Older Adults

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Objective: Aggregation of phosphorylated tau (pTau) is a hallmark feature of Alzheimer's disease (AD). Novel assays now allow pTau to be measured in plasma. Elevated plasma pTau predicts subsequent development of AD, cortical atrophy and AD-related pathologies in the brain. We aimed to determine whether elevated pTau is associated with cognitive functioning in older adults prior to the development of dementia.
Participants and Methods: Independently living older adults (N = 48, mean age = 70.0 years; SD = 7.7; age range 55-88 years; 35.4% male) free of dementia or clinical stroke were recruited from the community and underwent blood draw and neuropsychological assessment. Plasma was assayed using the Quanterix Simoa® pTau-181 V2 Advantage Kit to quantify pTau-181 levels and APOE genotyping was conducted on the blood cell pellet fraction obtained from plasma separation. Global cognition was assessed using the Dementia Rating Scale-2 (DRS-2) and executive function was assessed using the Stroop, D-KEFS-2 Fluency, and Trails Making Test. Diagnosis of mild cognitive impairment (MCI) was determined based on overall neuropsychological performance. Participants were diagnosed as MCI if they scored >1 SD below norm-referenced values on 2 or more tests within a domain (language, executive, memory) or on 3 tests across domains.
Results: Multiple linear regression analysis revealed a significant negative association between plasma pTau-181 levels and DRS-2 (B = -2.57, 95% CI (-3.68, -1.47), p <.001), Stroop Color-Word score (B = -2.64, 95% CI (-4.56, -0.71), p = .009) and Fruits and Vegetables Fluency (B = -1.67, 95% CI (-2.84, -0.49), p = .007), adjusting for age, sex, education and APOE4 status. MCI diagnosis was determined for 43 participants, of which 8 (18.6%) met criteria. Logistic regression analysis revealed that pTau-181 levels are associated with increased odds of MCI diagnosis (OR = 2.18, 95% CI (1.01, 4.68), p = .046), after accounting for age, sex, education and APOE4 status.
Conclusions: Elevated plasma pTau-181 is associated with worse cognition, particularly executive function, and predicts MCI diagnosis

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in older adults. Higher plasma pTau-181 was associated with increased odds of MCI diagnosis. Detection of pTau-181 in plasma allows a novel, non-invasive method to detect burden of one form of AD pathology. These findings lend support to the use of plasma pTau-181 as a valuable marker in detecting even early cognitive changes prior to the development of AD. Additional longitudinal studies are warranted to explore the prognostic value of plasma pTau-181 over time.

Categories: Dementia (Alzheimer's Disease)
Keyword 1: cognitive functioning
Keyword 2: dementia - Alzheimer's disease
Keyword 3: mild cognitive impairment
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33 Associations Between Long-Term Forgetting and Slow Wave Activity in Autosomal-Dominant Alzheimer's Disease: Findings from the Colombia-Boston (COLBOS) Biomarker Study

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Objective: Sleep contributes to memory retention and recall. Alzheimer's disease (AD) patients experience decreased slow wave activity (SWA) during sleep. This decrease in SWA is associated with impaired memory consolidation (Lee et al., 2020). Long-term forgetting (LTF) over days or weeks has been linked to memory consolidation deficits and has been suggested as an early marker of AD that could be useful for identifying at-risk individuals for preclinical AD trials (Weston et al., 2018). Here, we examined associations between LTF and SWA in a sample of Presenilin-1 (PSEN1) E280A mutation carriers with autosomal dominant Alzheimer's disease and non-carrier family members. Carriers of this mutation usually develop dementia in their forties (Fuller et al., 2019).
Participants and Methods: Fourteen cognitively unimpaired PSEN1-E280A mutation carriers and sixteen age-matched non-carriers (mean age: 34.2 years) from the Colombia-Boston (COLBOS) biomarker study were included. Participants completed an overnight polysomnogram (PSG) and memory testing (NEUROPSI Word List) at 3-time points: 1) the night before PSG: immediate recall (Day1-ImmRecall) and a 20-minute delayed recall (Day1-DelayedRecall), 2) recall the following day (Day2-recall), and 3) recall one week later (Day7-recall). SWA was measured as the ratio 0.6-1Hz/0.6-4Hz in frontopolar and frontotemporal regions and was calculated for sleep stages N2+N3 (slow wave sleep) based on an automated staging algorithm. Each participant's LTF was calculated as the percent retention between Day 1 immediate recall and Day 7 recall (Butler, 2009). Mann-Whitney U tests were used to compare differences in recall, SWA, and LTF between groups. Spearman's correlation was used to examine the associations between memory recall at different time points and SWA, as well as between LTF and SWA.
Results: On Day 1, carriers had lower performance in immediate recall ($p=0.02$), compared to non-carriers, but there were no group differences in the 20-minute delayed recall. Carriers also recalled fewer words on Day 2 ($p=0.03$) and Day 7 ($p=0.009$) and had greater LTF ($p=0.03$). There were no group differences in SWA. In our overall sample, worse performance on word list delayed recall on Day 1, Day 2, and Day 7 was associated with less SWA across both frontotemporal (Day1: $p=0.04$, Day2: $p=0.02$, Day7: $p=0.02$) and frontopolar (all $Ps<0.01$) regions. In carriers, only worse performance on Day 1 delayed recall was associated with lower SWA in the frontopolar region ($r= 0.535$; $p=0.049$). Memory recall on other days was not associated with SWA in any brain regions. Additionally, greater LTF was associated with less SWA across both frontopolar ($r= 0.507$; $p=0.005$) and frontotemporal regions ($r= 0.463$ $p= 0.01$).
Conclusions: Preliminary findings suggest that long-term forgetting is associated with less slow-wave activity in preclinical autosomal dominant Alzheimer's disease. These results also suggest

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