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Cognitive Functions as Predictors of Alzheimer's Disease Biomarker Status in the European Prevention of Alzheimer's Dementia Cohort

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Alterations in Alzheimer's disease (AD) biomarkers have been observed decades before the onset of dementia. Cognitive dysfunction, while central to the clinical diagnosis of AD, has long been considered as a late-stage phenomenon. This assumption is currently challenged and signals on some cognitive tests are now being observed within the preclinical stage. As part of the European Prevention of Alzheimer's Dementia (EPAD) project, a battery of cognitive tests has been proposed (the EPAD Neuropsychological Examination, ENE) which is designed to detect cognitive changes in persons without clinical signs of AD but who are at high risk. Analysis of results from the 361 participants with complete measures and without dementia recruited into the EPAD Longitudinal Cohort Study that the majority have elevated biomarker levels, with significant associations between an episodic verbal memory task and tau, while amyloid- (A) was associated with a central executive task. These preliminary findings suggest that profiles of cognitive performance may be specific to a given biomarker, with a primarily hippocampal task being associated with higher levels of tau and a frontal executive task being associated with higher levels of A . While previous research has focused on the relationship between cognition and levels of A , our findings suggest that p-tau may potentially be a more significant correlate.

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