



## Detecting cognitive changes in preclinical Alzheimer's disease: A review of its feasibility

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Significant progress has been made in characterizing the biological changes occurring in preclinical Alzheimer's disease (AD). Cognitive dysfunction has been viewed, however, as a late-stage phenomenon, despite increasing evidence that changes may be detected in the decades preceding dementia. In the absence of comprehensive evidence-based guidelines for preclinical cognitive assessment, longitudinal cohort and neuroimaging studies have been reviewed to determine the temporal order and brain biomarker correlates of specific cognitive functions. Episodic memory decline was observed to be the most salient cognitive function, correlating with high levels of amyloid deposition and hypoconnectivity across large-scale brain networks. Prospective studies point to early decline in both episodic and semantic memory processing as well as executive functions in the predementia period. The cognitive tests have, however, been principally those used to diagnose dementia. New procedures are required which target more finely the medial temporal lobe subregions first affected by clinically silent AD pathology.

**Alzheimer's & Dementia 2016**

Published **Online**

October 1, 2016

<http://dx.doi.org/10.1016/j.jalz.2016.06.2365>

