

# Phone menu test detects who may be at risk of Alzheimer's disease

June 14 2023

---



Credit: Pixabay/CC0 Public Domain

A new study by investigators from Mass General Brigham has found that a brief, simulated task of navigating a phone menu can detect the earliest changes in daily functioning in people at risk of developing Alzheimer's disease. Investigators found that an older adult's performance on the test, which can be completed in a matter of minutes, was associated with the hallmarks of Alzheimer's disease pathology, including amyloid and tau depositions in the brain. The findings, which were published in the *Journal of Alzheimer's Disease*, could help inform prevention trials testing treatments for Alzheimer's disease before pronounced symptoms of cognitive decline begin.

"This test is a more objective assessment of an aspect of daily functioning as opposed to our typical way of using a questionnaire filled out by somebody who knows the individual well," said Gad Marshall, M.D., the senior author on the paper and a neurologist and the Director of Clinical Trials at the Center for Alzheimer Research and Treatment at Brigham and Women's Hospital (a founding member of the Mass General Brigham healthcare system). "The implication is we may in fact detect a clinically meaningful change much earlier than we anticipate."

To conduct their study, Marshall and co-authors, including Mass General Brigham investigators in the Departments of Neurology at Massachusetts General Hospital (MGH) and Brigham and Division of Geriatric Psychiatry at McLean Hospital, used the Harvard Automated Phone Task (APT). This test includes three tasks an [older person](#) may encounter on a phone menu, including refilling a prescription, calling a health insurance company to select a new primary care physician, and

handling a banking transaction. The test, which was developed and validated at the Center for Alzheimer Research and Treatment at the Brigham and MGH, asks participants to navigate an interactive voice response system to complete these tasks. The participants and their study partner, who is someone who knows them well, also completed other assessments about a variety of daily activities, followed by standard cognitive testing and brain scans that show amyloid and tau pathology in different regions of the brain.

Just under a third of the participants who were clinically normal (without cognitive impairment) showed evidence of elevated amyloid and tau in their brain and had trouble with the more challenging tasks of the daily functioning assessment. This is notable because most people with Alzheimer's [disease](#) will start with short-term memory difficulties, word-finding difficulties, and issues with sense of direction. They may also have decreased motivation, depression, irritability, and anxiety.

The authors note the assessment only represents a small part of daily functioning that not everyone utilizes. The study was also limited by a lack of diversity among the participants: 86% of the participants were white, and 97% were non-Hispanic. Future studies will be needed to determine if these findings may be replicated in more representative study populations, and if over a longer period, associations with difficulty completing the simpler tasks emerge.

One of the strengths of the study is that most participants can complete the tasks on their own, outside of a clinical setting. The authors conclude that assessing daily functioning in a more sensitive way, such as the APT, may identify Alzheimer's disease before a patient develops more pronounced cognitive changes.

"Although these findings are preliminary, they signal that there is an association between an objective measurement of instrumental activities

of daily living (i.e., the Harvard APT task) and the interaction of tau and amyloid in a sample of cognitively normal older adults," said Chris Gonzalez, M.S., a first author on the study, former research assistant in the Department of Neurology at Brigham, and a fourth-year Ph.D. student in clinical neuropsychology at Rosalind Franklin University of Medicine and Science. "Having a [task](#) like the Harvard APT could better capture an individual's overall ability to complete complex everyday tasks rather than the questionnaires that are given to patients and their informants to better understand the preclinical stages of Alzheimer's disease."

**More information:** Christopher Gonzalez et al, Associations of the Harvard Automated Phone Task and Alzheimer's Disease Pathology in Cognitively Normal Older Adults: Preliminary Findings, *Journal of Alzheimer's Disease* (2023). [DOI: 10.3233/JAD-220885](https://doi.org/10.3233/JAD-220885)

Provided by Mass General Brigham

Citation: Phone menu test detects who may be at risk of Alzheimer's disease (2023, June 14) retrieved 28 April 2024 from <https://medicalxpress.com/news/2023-06-menu-alzheimer-disease.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--