

The Mental Note

FROM THE HARVARD AGING BRAIN STUDY STAFF

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Why Create Novel Cognitive Tests?

Alzheimer's disease (AD) dementia is a challenging disease to diagnose. There is evidence suggesting that AD-related changes begin several years before someone shows noticeable signs of mild cognitive impairment or dementia. We refer to the period when these subtle brain changes begin to happen as preclinical AD. Cognitive testing, also known as neuropsychological testing, plays an important role in identifying early changes in a person's thinking skills and memory. Precise tests can help doctors identify specific cognitive deficits in an individual and more accurately determine whether these changes are the result of normal aging or a dementia process. Traditional cognitive tests are useful for identifying changes in the presence of clinical impairment, but they are not that useful when only subtle changes in cognition are evident.

Researchers are now studying how cognitive test scores relate to biological markers of AD, even before the onset of dementia symptoms. Cognitive test and biomarker data from the Harvard Aging Brain Study (HABS) is helping researchers develop novel cognitive tests to detect some of the earliest subtle changes during preclinical AD. Novel cognitive tests are not only less invasive and more cost-effective than other diagnostic methods, but they may also enable physicians to diagnose AD sooner and more accurately.

Traditionally, cognitive tests have been administered by trained neuropsychologists in a hospital setting. As the world's population ages, an increasingly large subset of the population will need access to cognitive testing, yet not everyone has convenient access to a local hospital for in-person testing. Over the last decade, researchers have developed online cognitive tests that can be self-administered, allowing individuals to take these tests at home and avoid unnecessary clinic visits. A recent study found that when standard paper-based cognitive tests were translated to mobile devices, test completion rates increased, costs decreased, and tracking of patient outcomes improved (Koo et al, 2019). Digital, internet-based testing also allows for more convenient, precise and efficient tracking of memory performance. By making diagnostic tests more accessible, less time-consuming, and better able to detect AD-related cognitive decline, the United States could save millions of dollars in medical costs.

To learn more about some of the digital cognitive tests currently used in HABS, we invite you to join us for a lecture given by Dr. Kathryn Papp (see the back of this newsletter for more details). This research would not be possible without your participation, and for that we are incredibly grateful.

Featured Staff: Kathryn V. Papp

Kathryn V. Papp is a clinical neuropsychologist at Brigham and Women's Hospital and Massachusetts General Hospital. She is an Assistant Professor in Neurology at Harvard Medical School. She completed her Masters in Clinical and Translational Research and PhD in Clinical Psychology at the University of Connecticut.

After completing her Clinical Internship at MGH/Harvard Medical School and her Clinical Fellowship at MGH/BWH she joined the Harvard Aging Brain Study team where she has been investigating the earliest changes in cognition that distinguish aging from Alzheimer's disease. Her work is currently funded through the Alzheimer's Association and the National Institute on Aging.



iPad Testing

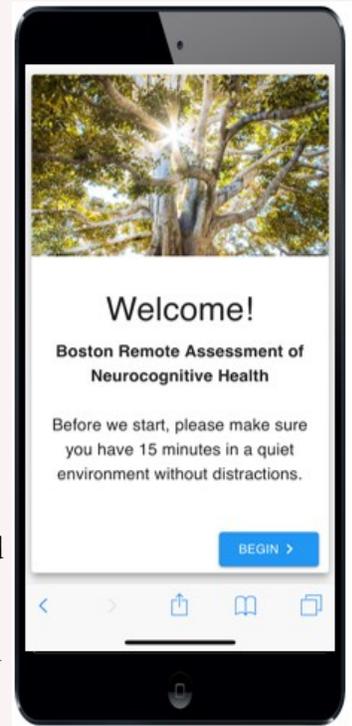
iPad testing is an optional part of the Harvard Aging Brain Study during which a participant is trained how to use an iPad at a study visit, then takes the tablet home to complete a memory test once per month for a year. Through this test, researchers are able to see small changes over less time than it takes to see changes with typical paper and pen testing.

Digital Pen

Digital pen technologies allow for more sensitive and accurate measurement of thinking and memory than traditional testing methods. The digital pen tracks pertinent information that the human eye cannot detect, including timing, judgement, and problem solving skills.

BRANCH

The Boston Remote Assessment of NeuroCognitive Health (BRANCH) is a web-based application designed to assess early changes in memory and thinking. BRANCH will be taken at-home on any device with internet access. The test lasts 20-30 minutes and should be taken daily for two weeks. Frequent administration will help researchers study subtle cognitive changes over a short time period .



Come learn about Novel Cognitive Tests during our next Food for Thought lecture



presented by:
Kathryn V. Papp, PhD

Friday, September 13th
10:00am - 11:00am

During this session we will discuss many of the cognitive measures administered in the Harvard Aging Brain Study and what we have learned from using these tools. We will also discuss the latest advances in measuring cognitive functioning including the use of computerized and remote assessments and the digital pen.

Open to our wonderful participants and their study partners!

Reserve your seat at (617) 643-5200

Refreshments will be provided.

Parking will not be provided.



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