

Spotlight on Health

Testing Brain Health

Brain health reflects an individual's cognition (ie, the ability to think, learn, and remember). Cognition usually peaks by the age of 20 to 30. The subsequent rate of decline is influenced by genetic predisposition, lifestyle, and health issues, such as heart disease and diabetes. By age 70, some people may begin to show symptoms of mild cognitive impairment (MCI); some with MCI may progress to dementia (major NCD).

In this month's Spotlight on Health, we discuss how to objectively test for brain health and present arguments for and against universal screening, ie, testing asymptomatic seniors.

Testing for Cognitive Impairment

MCI can be difficult to diagnose. Observation of patient behavior during a wellness visit may miss signs of MCI. Subjective reports of brain health provided by patients or their family members may be unreliable. Consequently, cognitive assessment tools have been developed as objective tests for MCI and dementia. Most of these are paper-based tests; however, electronic versions are available.¹

To Screen or Not to Screen for Cognitive Impairment

There is general agreement that patients showing signs of cognitive impairment should be tested using objective cognitive assessment tools.⁴⁻⁷ However, experts do not agree on whether asymptomatic elderly people should be screened.

The US Preventive Services Task Force (USPSTF) and the Canadian Task Force on Preventive Health Care (CTFPHC) do not recommend universal screening.^{4,5} They argue that:

- There is insufficient data to evaluate the benefits, or harms, of universal screening (USPSTF).
- Established cognitive assessment tools misdiagnose 10% to 25% of normal patients as having MCI (CTFPHC).
- If MCI is detected, little can be done to improve the patient's condition.

The International Association of Gerontology and Geriatrics (IAGG) recommends screening be performed for all patients over 70.⁶ The Affordable Care Act aligns with this position, calling for screening as part of the annual wellness visit for Medicare patients.⁷ The IAGG based its position on these points⁶:

- Cognitive decline may be delayed or reduced by medication and lifestyle interventions.
- If MCI is caused by a treatable condition, something can be done to reduce or resolve it.



Mild Cognitive Impairment

MCI is a small but measurable decline in cognition. About 33% to 38% of people with MCI will develop dementia within 5 years.^{2,3} Thus, identifying MCI can be the first step for assessing the risk of dementia.

Dementia Is Not Just Alzheimer Disease

About 60% to 80% of all dementias are caused by Alzheimer disease.⁵ Other forms include vascular and Lewy body dementia; frontotemporal lobar degeneration; Creutzfeldt-Jakob, Parkinson, and Huntington disease dementia; and AIDS-related dementia.

Some causes of dementia are treatable. These include drug-drug interactions, vitamin B12 deficiency, alcohol or drug abuse, thyroid problems, depression, autoimmune disease, or trauma. Following successful treatment, symptoms of dementia may be completely or partially reversed.

- Fairly accurate tests are available for assessing patients including the Mini-Mental State Examination (MMSE), MiniCog, and the Memory Orientation and Screening Test (MOST).

How Quest Diagnostics Can Help

Quest offers an electronic diagnostic test called CogniSense™, an iPad®-based version of the MOST. CogniSense can be used to objectively assess MCI and dementia. Comparisons suggest that MOST is more accurate than MMSE.⁸ CogniSense and the paper-based version of MOST classify patients with the same accuracy.¹

CogniSense can be downloaded from the Apple App store, and patient results can be integrated into Quest's Care360® electronic health record system. This allows patient results to be easily tracked over time and easily accessed by other healthcare providers. In addition to aiding in assessment of MCI and dementia, CogniSense can also help assess cognitive impairment resulting from alcohol or drug use and concussion, as well as improvement during recovery.

To learn more go to QuestCogniSense.com.

References

- Clionsky M, Clionsky E. Psychometric equivalence of a paper-based and computerized (iPad) version of the Memory Orientation Screening Test (MOST). *Clin Neuropsychol*. 2014;28:747-755.
- Mitchell AJ, Shiri-Feshki M. Rate of progression of mild cognitive impairment to dementia—meta-analysis of 41 robust inception cohort studies. *Acta Psychiatr Scand*. 2009;119:252-265.
- Ward A, Tardiff S, Dye C, et al. Rate of conversion from prodromal Alzheimer's disease to Alzheimer's dementia: a systematic review of the literature. *Dement Geriatr Cogn Dis Extra*. 2013;3:320-332.
- Moyer VA. Screening for cognitive impairment in older adults: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med*. 2014;160:791-797.
- Canadian Task Force on Preventive Health Care, Pottie K, Rahal R, et al. Recommendations on screening for cognitive impairment in older adults. *CMAJ*. 2016;188:37-46.
- Morley JE, Morris JC, Berg-Weger M, et al. Brain health: the importance of recognizing cognitive impairment: an IAGG consensus conference. *J Am Med Dir Assoc*. 2015;16:731-739.
- Annual wellness visit (AWV) including personalized prevention plan services (PPPS). CMS Medicare Learning Network Web site. MLN Matters® number MM7079. 2011 cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM7079.pdf. Updated March 2, 2016. Accessed August 15, 2016.
- Clionsky M, Clionsky E. The Memory Orientation Screening Test (MOST) accurately separates normal from MCI and demented elders in a prevalence-stratified sample. *J Alzheimers Dis Parkinsonism*. 2013;3:e109.