



## THERE IS A CLINICAL NEED TO MEASURE COGNITION AS PART OF ROUTINE CARE

*David Blum, Wendy Gabel & Jane Rhodes, Ph.D.*

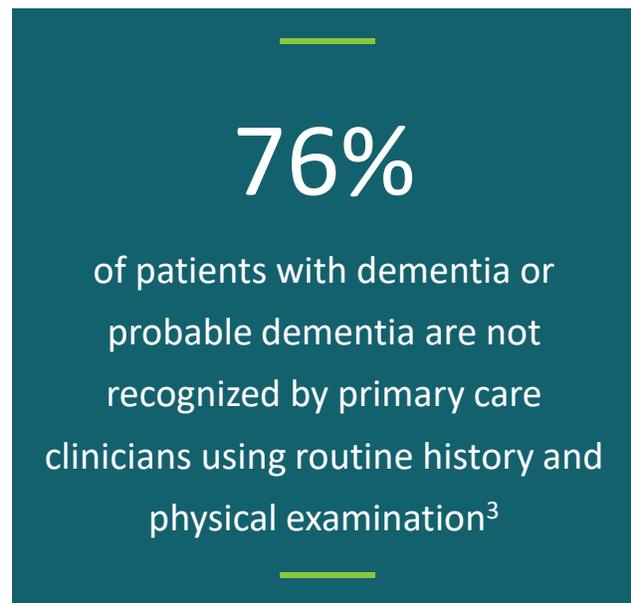
In 2011, the Affordable Care Act added the Annual Wellness Visit (AWV) as a new Medicare benefit. The AWV requires an assessment of cognition alongside such routine measurements as height, weight, and family medical history.<sup>1</sup> This important revision underscores a rising acknowledgement of the importance of cognition as a part of the picture of a patient's overall well-being.

Mild Cognitive Impairment (MCI) is defined as the “symptomatic pre-dementia stage” on the continuum of cognitive decline, characterized by objective impairment in cognition that is not severe enough to require help with usual activities of daily living. The prevalence of MCI in adults aged 65 years and older is 10-20%, with the risk increasing with age, and being higher for men.<sup>2</sup> As many as 76% of patients with dementia or probable dementia are not recognized by primary care clinicians using routine history and physical examination and most patients are not identified until they reach moderate to severe stages of the disease.<sup>3</sup>

While there are no disease modifying drugs or cures for cognitive decline, early detection of MCI is particularly valuable. Studies implementing cognitive training in healthy older adults and those with mild cognitive impairment are largely positive and suggest that cognitive training has the potential to improve cognition.<sup>4</sup>

## THERE IS A CLINICAL NEED TO MEASURE COGNITION IN HEALTHY OLDER PATIENTS

Early detection of MCI can provide medical, emotional, social, and lifestyle advantages. For some patients, identification of a cognitive decline may find a reversible or treatable cause, such as depression, obstructive sleep apnea, or



vitamin B12 deficiency, which can be immediately addressed. For others, simple interventions **such** as physical exercise, smoking cessation, cognitive training, and vitamin D have shown promise as treatment techniques to enhance cognitive function.<sup>5</sup> A large-scale randomized control trial with older adults, independent at entry, indicated that training delayed their cognitive and functional decline over a five-year follow-up.<sup>6</sup> It has also been

suggested that the combination of physical and cognitive training may reduce the elevated risk of a fall that is indicated in older adults with MCI.<sup>7</sup>

## THERE IS A CLINICAL NEED TO MEASURE COGNITION IN CHRONIC DISEASES

Studies have shown a concomitance of cognitive issues with several other prevalent chronic diseases. These patients' cognitive levels are worth evaluation along with standard monitoring of their disease.

Diabetes mellitus has shown mild to moderate reductions in cognitive function for both type 1 and type 2 patients and has been associated with changes in brain structure.<sup>8</sup> Additionally, the odds of progressing from MCI to dementia was 67% higher in people with diabetes or metabolic syndrome than those without one of these concomitant diseases.<sup>9</sup>

Several studies also suggest that a large portion of patients with cardiovascular conditions also suffer from cognitive impairment or dementia. This includes hypertension, coronary artery disease, and atrial fibrillation. This population had a 67% higher risk for cognitive problems than a healthy individual.<sup>10</sup> Specifically, prevalence of cognitive impairment in heart failure patients was 43%. In addition, hypertension has recently been linked to dementia and Alzheimer's disease; it was found that hypertension may promote the neurodegenerative pathway underlying Alzheimer's disease.<sup>11</sup>

Therefore, patients with diabetes or cardiovascular conditions should have their cognitive abilities carefully monitored in order to track any early indication of impairment. Identification will allow for individualized treatment planning and services to help manage their chronic condition while taking into account any cognitive difficulties.

Odds of progressing from  
MCI to dementia

↑67%

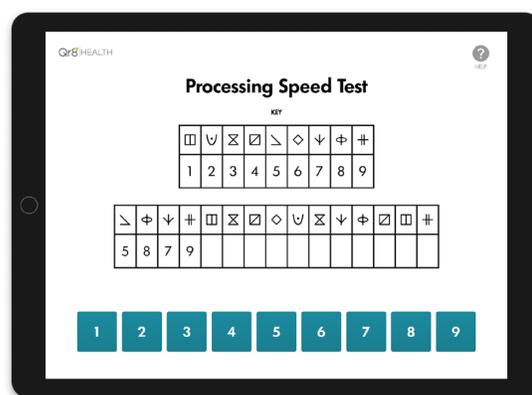
in patients with diabetes or  
metabolic syndrome<sup>9</sup>

## **Qr8 HEALTH'S COGNITION SUITE FACILITATES COGNITION ASSESSMENT IN CLINICAL PRACTICE**

Qr8 Health offers a novel electronic way to support the measurement of important facets of cognition that is quick and convenient, while integrating easily into most primary care settings.

The suite of cognitive assessment tools, Cognition Snapshot™, Cognition Chronicle™, and Cognition At Home™ offer validated cognitive tests that are self-administered by most patients in a few minutes. The Processing Speed Test and the Visual Memory Test were chosen to assess specific domains that are highly correlated with early detection of cognitive decline. In addition, because these assessments are objective, standardized, and repeatable, they allow health care professionals to track changes in their patient’s cognitive health over time.

The suite offers several choices for clinical implementation. Cognition Snapshot™ provides a straightforward assessment with single data point of cognitive performance. Cognition Chronicle™ adds a multi-faceted data infrastructure, enabling longitudinal data collection and analysis. Cognition At Home™ maintains the data tracking over time but allows for remote assessment through a clinician prescribed mobile app that is downloaded on the patient’s own smart phone and can be completed outside of the clinic.



By Rx only

Traditionally, primary care practices have not had the time nor the resources to routinely evaluate cognitive function in clinical practice. Qr8 Health’s Cognition Suite provides a range of options for brief cognitive assessment that can fit seamlessly into the primary care workflow, requiring minimal staff time and resources. The ability to have regular, standardized cognitive assessments in everyday clinical practice will arm health care professionals with important information about their patients and has the potential to lead to better patient outcomes.

- <sup>1</sup>Cordell, Cyndy B et al. "Alzheimer's Association recommendations for operationalizing the detection of cognitive impairment during the Medicare Annual Wellness Visit in a primary care setting." *Alzheimer's & dementia : the journal of the Alzheimer's Association* vol. 9,2 (2013): 141-50. doi:10.1016/j.jalz.2012.09.011
- <sup>2</sup>Langa, Kenneth M, and Deborah A Levine. "The diagnosis and management of mild cognitive impairment: a clinical review." *JAMA* vol. 312,23 (2014): 2551-61. doi:10.1001/jama.2014.13806
- <sup>3</sup>Jennifer S. Lin, MD, MCR , et. Al; "Screening for Cognitive Impairment in Older Adults: A Systematic Review for the U.S. Preventive Services Task Force" ; doi: [10.7326/0003-4819-159-9-201311050-00730](https://doi.org/10.7326/0003-4819-159-9-201311050-00730).
- <sup>4</sup>International Psychogeriatrics; 2010 Jun;22(4):537-48; doi: 10.1017/S1041610209991748. Epub 2010 Feb 22.
- <sup>5</sup>Montero-Odasso, Manuel et al. "SYNERGIC TRIAL (SYNchronizing Exercises, Remedies in Gait and Cognition) a multi-Centre randomized controlled double blind trial to improve gait and cognition in mild cognitive impairment." *BMC geriatrics* vol. 18,1 93. 16 Apr. 2018, doi:10.1186/s12877-018-0782-7
- <sup>6</sup>International Psychogeriatrics; 2008 Feb;20(1):57-66; doi:10.1017/S104161020700631X.Epub 2007 Oct 25.
- <sup>7</sup>Lipardo, Donald S, and William W N Tsang. "Falls prevention through physical and cognitive training (falls PACT) in older adults with mild cognitive impairment: a randomized controlled trial protocol." *BMC geriatrics* vol. 18,1 193. 24 Aug. 2018, doi:10.1186/s12877-018-0868-2
- <sup>8</sup>Moheet, Amir et al. "Impact of diabetes on cognitive function and brain structure." *Annals of the New York Academy of Sciences* vol. 1353 (2015): 60-71. doi:10.1111/nyas.12807
- <sup>9</sup>Pal, Kingshuk et al. "Mild cognitive impairment and progression to dementia in people with diabetes, prediabetes and metabolic syndrome: a systematic review and meta-analysis." *Social psychiatry and psychiatric epidemiology* vol. 53,11 (2018): 1149-1160. doi:10.1007/s00127-018-1581-3
- <sup>10</sup>Cannon, Jane A et al. "Cognitive Impairment and Heart Failure: Systematic Review and Meta-Analysis." *Journal of cardiac failure* vol. 23,6 (2017): 464-475. doi:10.1016/j.cardfail.2017.04.007
- <sup>11</sup>Iadecola, Costantino, and Rebecca F Gottesman. "Neurovascular and Cognitive Dysfunction in Hypertension." *Circulation research* vol. 124,7 (2019): 1025-1044. doi:10.1161/CIRCRESAHA.118.313260