

Spotlight on Health

Early Assessment of Brain Health

Brain health is a reflection of a person's ability to think, learn, and remember. These factors are collectively referred to as cognition. Mild cognitive impairment (MCI) may become evident with advancing age. It can manifest with intermittent forgetfulness and some difficulty performing activities of daily living. In some individuals, MCI will progress to dementia.

This newsletter will discuss cognition and its decline, screening for cognitive impairment, and the value of early assessment of dementia.

Mild Cognitive Impairment

Cognition generally peaks at age 20 to 30, and then gradually begins to decline. The rate of decline depends on many factors, such as lifestyle, genetic predisposition, and health conditions such as heart disease and diabetes.¹ MCI can indicate the beginning of dementia. It is important to realize that everyone "loses a little bit" with age, and that MCI and dementia need to be distinguished from a "senior moment" (sidebar). In some patients, cognitive impairment may remain mild. In others, it can progress to dementia.

MCI, if present, is generally noted around 70 years of age. It can be difficult to diagnose; signs may be missed during a wellness examination, and family members' subjective descriptions can be unreliable. However, a number of objective methods can help test for the presence of cognitive impairment. One such objective tool is the Memory Orientation and Screening Test (MOST),² which has also been incorporated into a tablet-based app for in-office use (see "How the Laboratory Can Help" below).

Alzheimer Disease and Other Types of Dementia

The term "dementia" is used to describe symptoms associated with a decline in memory or other thinking skills severe enough to reduce a person's ability to perform everyday activities. Alzheimer disease accounts for 60% to 80% of dementia cases.³ It is estimated that Alzheimer disease affects more than 5 million people in the United States. This number is expected to rise to 16 million by 2050, as the population ages.³ Other types of dementia include vascular, Lewy body, and frontotemporal. Dementia may also be associated with Creutzfeldt-Jakob, Parkinson, and Huntington disease, as well as AIDS.¹ The causes of dementia for these conditions are not curable, although the progression of symptoms can be slowed in some cases.¹

On the other hand, dementia can be associated with treatable causes. Treatable causes of dementia include drug-drug interactions, vitamin B12 deficiency, alcohol or drug abuse, thyroid dysfunction, depression, autoimmune disease, and trauma.¹ In these cases, treatment of the cause can partially or completely reverse the symptoms of dementia.¹



Senior Moment or Dementia

Certain signs can help determine whether a patient is having "senior moments" or early signs of dementia.

Signs of senior moments

- Not being able to quickly remember things, such as a name or phone number
- Occasionally forgetting an appointment, but remembering it afterwards
- Sometimes misplacing items
- Forgetting what you were going to get when you go into a room
- Needing memory aids to keep you on track
- Not being worried about memory loss

Signs of dementia

- Often forgetting names, phone numbers, PINs, etc...
- Often forgetting appointments and not remembering them afterwards
- Often misplacing items, or forgetting what an item is used for
- Tending to forget recent things but remembering things from the past
- Inability to learn new things
- Having difficulty managing daily affairs, such as paying bills
- Being worried about memory loss, or having no awareness of it
- Family and friends noticing memory lapses or other symptoms

Importance of Early Assessment of Brain Health

It is generally agreed that individuals with signs of MCI should be tested, using objective measures, to determine the presence and degree of impairment.⁴⁻⁶ Early assessment of dementia provides a number of benefits that can potentially improve disease management. These include:

- Allowing prompt initiation of treatment in patients with reversible causes of dementia
- Facilitating participation in clinical trials for currently untreatable causes of dementia
- Increasing the chances of treatment effectiveness through early intervention
- Allowing early initiation of long-term care planning
- Facilitating improved management of co-morbid conditions

However, there is lack of agreement on whether asymptomatic elderly individuals should be screened. Several arguments have been made against screening when no symptoms are present: 1) data regarding benefits or harms of screening remain insufficient; 2) the misdiagnosis rate of MCI has been relatively high (10% to 25%); and 3) in many cases, little can be done to improve an individual's condition if MCI is identified.^{4,5}

However, some organizations do recommend screening individuals 70 years of age or older. Arguments in favor of screening include 1) MCI can be slowed by medications and lifestyle changes; 2) MCI may be due to a treatable cause; and 3) testing is more accurate than previously reported.⁶ In addition, newer tests may help predict a person's risk of developing Alzheimer disease or aid in diagnosis.⁷⁻⁹

How the Laboratory Can Help

Quest Diagnostics provides a large portfolio of tests to assess cognitive function and dementia, including genetic testing.

CogniSense™, an iPad-based version of the MOST, can be used to objectively assess MCI and dementia (QuestCogniSense.com). CogniSense and the paper-based version of MOST classify patients with the same accuracy.² CogniSense can also help assess MCI resulting from alcohol or drug use and concussion, as well as improvement during recovery. The Dementia, Secondary Causes Panel (Test Code 91410) is designed to evaluate a patient for the presence of potentially reversible causes of dementia such as vitamin B12 deficiency, hypothyroidism, hypoparathyroidism, anemia, hypoxia or hypercapnia, hepatic and renal encephalopathies, diabetes, and dehydration. The Beta-amyloid 42/40 Ratio and Apolipoprotein (ApoE) Isoform Panel, CSF (Test Code 94628), is available to assess the risk of developing Alzheimer disease and aid in diagnosis (QuestDiagnostics.com/AD).

References

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