Clinical skills

Bedside cognitive assessment

Screening for cognitive impairment may lead to diagnostic and treatment plans that improve patients' safety

Mild memory changes and reduced speed of processing information are normal cognitive changes in older adults, but between 35% and 50% of adults over the age of 85 years have moderate to severe cognitive impairment. Cognitive impairment includes a range of conditions, such as mild cognitive impairment, delirium and the various dementia syndromes. It is an independent predictor of excess mortality[1] and increases the risk of adverse medication effects from benzodiazepines and anticholinergics.

Mild cognitive impairment is present when cognitive loss exceeds what is expected for age and education but there is no impact on function. Annually, 10–15% of patients with mild cognitive impairment will progress to dementia,[2] the diagnosis of which requires cognitive decline and the resultant functional decline.

Cognitive impairment and its related syndromes can be challenging to diagnose in a short patient encounter. Brief evidence-based assessments of cognition are sensitive, and practical screens can determine if further testing and intervention are required. For these reasons, cognitive screening is important, as early cognitive impairment can be easily missed.[3]

The patient's history and physical and mental status examination are the starting points for an evaluation of cognitive impairment. A common mistake made by clinicians is the failure to obtain the history from someone other than the patient, as patients may not complain of memory loss or report symptoms of cognitive impairment unless specifically queried (Box 1).

Before administering a brief bedside cognitive examination, a clinician must assess the following:

- sensorium (level of consciousness) — an abnormal sensorium (either hypo- or hyper-active) suggests the presence of delirium;
- attention — fluctuations in attention over the course of the interview should trigger the use of a standardised tool to screen for delirium;
- language barriers, loss of hearing or vision — which are likely to influence cognitive testing;
- educational and cultural background — some assessment tools are influenced by educational level and cultural background; and
- depression — it is common and can be mistaken for cognitive impairment.

The clinician should take steps to accommodate and mitigate language, sensory, educational and cultural barriers. Competent, non-family translators, for example, are needed if language barriers exist. Efforts to introduce the cognitive screening tests (eg, "I would like to do a short memory quiz"); asking permission to perform the tests may protect the dignity and comfort of the patient.

The Mini-Cog is a short screening test that combines a three-word recall with a clock drawing task to detect cognitive impairment. This test has been shown to be non-inferior to the well known Mini-Mental State Exam for detecting dementia, is easily administered by non-physician staff, and is relatively free from educational, language or cultural bias. The sensitivity is 99% for dementia.[4]

The Mini-Mental State Exam is a well validated multidomain test that has been widely used over decades. The maximum score on the test is 30; a score of less than 24 is suggestive of cognitive impairment.[5] This test was used free of charge for close to 30 years; however, it has been under copyright from Psychological Assessment Resources since 2001. Mini-Mental State Exam users are asked to purchase the form for $1.23 for each individual patient; therefore, many practitioners choose to use the free Mini-Cog test or the Montreal Cognitive Assessment instead.

1 Questions to ask the collateral informant

Domain	Specifics
Memory	• Have memory changes been noticed? • Have things been misplaced more frequently (wallet, keys, papers)? • Have there been any workplace reports?
Navigation	• Have there been any driving mishaps? • Has the patient ever not found the way home?
Instrumental activities of daily living*	• Have others taken over some of the household tasks? • Have others taken over bill paying or medication management?
Vulnerability	• Has the patient been a victim to any theft or financial scams? • Has anyone taken advantage? • Has the patient tried to leave home at odd times?
Outbursts	• Has the patient had episodes of frustration or anger outbursts? • Has the patient had episodes of verbal or physical abusiveness?

* Functional activities questionnaire: www.healthcare.uiowa.edu/familymedicine/fpinfo/Docs/functional-activities-assessment-tool.pdf ◆

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2 Instruments for cognitive screening

Name	Time	Items scoring	Access*	Notes
Mini-Cog	3 min	3-word recall, clock draw	http://geriatrics.uthscsa.edu/tools/MINICog.pdf	Free
MoCA	10 min	19 items 0–30 points	www.mocatest.org	Free with registration
SLUMS	7 min	11 items 0–30 points	http://medschool.slu.edu/agingsuccessfully/pdfsurveys/slumsexam_05.pdf	
MMSE	10 min	19 items 0–30 points	www.minimental.com	For purchase

MMSE = Mini-Mental State Exam. MoCA = Montreal Cognitive Assessment. SLUMS = Saint Louis University Mental Status Examination. * Viewed July 2017. ◆

The Confusion Assessment Method is a widely used and validated tool that physicians use to screen for delirium. It has a sensitivity of 94–100% and a specificity of 90–95%. In addition, the Delirium Rating Scale-Revised-98 is a 16-item scale that can diagnose delirium and assess symptom severity. It has a sensitivity ranging from 91–100% and a specificity of 85–100%.[6] This scale is intended for use by clinicians with psychiatric training.

The Montreal Cognitive Assessment was developed to improve the detection of mild cognitive impairment. Its score range is also 0–30; a score of 26 or greater is considered normal. The sensitivity of the Montreal Cognitive Assessment for mild cognitive impairment varies depending on the population studied.[7]

The Saint Louis University Mental Status Examination is a comparable test that takes about 7 minutes to complete. A score of 27 or greater is considered normal, scores between 21 and 26 suggest mild cognitive impairment, and scores of 20 or less suggest dementia (Box 2).[8]

Giving informants a short questionnaire such as the Informant Questionnaire on Cognitive Decline in the Elderly can enhance the sensitivity of screening.[9] If screening for cognitive impairment is positive, a more comprehensive assessment is needed, including expanded history, with input from other informants, laboratory evaluation and neuroimaging, leading to diagnostic and treatment plans that ensure the patient's safety.

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