Mini-Mental State Examination

The Mini-Mental State Exam (MMSE) is the most widely used cognitive test for dementia in US clinical practice [29,30]. The examination takes approximately seven minutes to complete. It tests a broad range of cognitive functions including orientation, recall, attention, calculation, language manipulation, and constructional praxis.

The MMSE includes the following tasks [29]:

  * What is the date: (year)(season)(date)(day)(month) - 5 points

  * Where are we: (state)(county)(town)(hospital)(floor) - 5 points

  * Name three objects: Ask the patient all three after you have said them. Give one point for each correct answer. Then repeat them until he/she learns all three. Count trials and record. The first repetition determines the score, but if the patient cannot learn the words after six trials then recall cannot be meaningfully tested. Maximum score - 3 points.

  * Serial 7s, beginning with 100 and counting backward: one point for each correct; stop after five answers. Alternatively, spell WORLD backwards: one point for each letter in correct order. Maximum score - 5 points.

  * Ask for the three objects repeated above: one point for each correct. Maximum score - 3 points.

  * Show and ask patient to name a pencil and wrist watch - 2 points.

  * Repeat the following, "No ifs, ands, or buts." Allow only one trial - 1 point.

  * Follow a three stage command, "Take a paper in your right hand, fold it in half, and put it on the floor." Score one point for each task executed. Maximum score - 3 points.

  * On a blank piece of paper write "close your eyes;" ask the patient to read and do what it says - 1 point.

  * Give the patient a blank piece of paper and ask him/her to write a sentence. The sentence must contain a noun and verb and be sensible - 1 point.

  * Ask the patient to copy a design (eg, intersecting pentagons). All 10 angles must be present and two must intersect - 1 point.

A total maximal score on the MMSE is 30 points. A score of less than 24 points is suggestive of dementia or delirium. Using a cutoff of 24 points, the MMSE had a sensitivity of 87 percent and a specificity of 82 percent in a large population based sample (show table 1) [31]. However, the test is not sensitive for mild dementia, and scores may be influenced by age and education, as well as language, motor, and visual impairments [32]. In one study, for example, the median MMSE score was 29 for individuals with at least nine years of schooling, 26 for those with five to eight years of schooling, and 22 for those with four years of schooling or less [31].

Other brief cognitive assessments — Ideal tests for mental status screening should be brief and have good performance in populations with different cultural, linguistic, and educational backgrounds.

Mini-Cog.

The "Mini-Cog" test consists of a clock drawing task (CDT) and an uncued recall of three unrelated words [42]. The CDT is considered normal if all numbers are present in the correct sequence and the hands display the correct time in a readable way. Scoring is based on a simple decision tree with the following three rules:

    * Subjects recalling none of the words are classified as demented
    * Subjects recalling all three words are classified as non-demented
    * Subjects with intermediate (one to two) word recall are classified based on the CDT (abnormal = demented; normal = non-demented)

The advantages of the Mini-Cog include high sensitivity for predicting dementia status, short testing time relative to the MMSE, ease of administration, and diagnostic value not limited by the subject's education or language [42].

In a retrospective analysis of data from a random sample of 1119 older adults, the Mini-Cog was compared with the MMSE (at a cut point of 25); the Mini-Cog had similar sensitivity (76 versus 79 percent) and specificity (89 versus 88 percent) for dementia [43]. Although promising, the Mini-Cog requires further validation with prospective data. These tests are also not appropriate for patients with aphasic or anomic disorders.