Screening for Cognitive Impairment

Screening for dementia is not recommended for the general population. However, healthcare professionals should be aware of clinical features that may suggest cognitive impairment and should also be aware of the increased risk of dementia in people with conditions such as Down's syndrome and other learning disabilities, after a stroke and in Parkinson's disease. General practitioners need to be able to recognise cognitive impairment and possible dementia using:

- History taking.
- Cognitive and mental state examination.
- Physical examination and other appropriate investigations.
- A review of medication in order to identify and minimise use of drugs, including over-the-counter products, which may adversely affect cognitive functioning.

**NB:** never delay referral for memory assessment on the basis that the results are only borderline-positive or where the patient appears to be coping well unaided - this is the group of patients likely to benefit most from intervention.

The rest of this article deals with the screening tests that can be used to detect cognitive impairment. The limitation of such tests should be recognised and one UK study found that increased use of the tests was not reflected in an increase in the hospital diagnosis of dementia.

Screening tests for cognitive impairment can adequately detect dementia but there is no strong evidence whether interventions for patients or their carers has a clinically significant effect for people with earlier detected cognitive impairment. However, early diagnosis allows the person to plan ahead while they still have the capacity to make decisions about their future care, enables the person and their family to receive timely practical information, advice and support, and allows access to available drug and non-drug treatments which may improve cognition, improve quality of life and delay institutionalisation.

**Clinical assessment**

- Clinical cognitive assessment in those with suspected dementia should include examination of attention and concentration, orientation, short-term and long-term memory, praxis, language and executive function.
- As part of this assessment, formal cognitive testing should be undertaken using a standardised instrument. For the purposes of screening in primary care, a test should be short, simple, easy to learn and perform with high sensitivities and specificities.
- Those interpreting the scores of such tests should take full account of other factors known to affect performance, including educational level, skills, previous level of functioning and attainment, language and any sensory impairments, psychiatric illness or physical/neurological problems.
- Formal neuropsychological testing should form part of the assessment in cases of mild or questionable dementia. Many of the standard cognitive tests are designed for measuring impairment in older adults of average ability, whose cognitive abilities are generally slightly different in range and strength from those under 65 years. In the case of younger (or highly able older) people, a review by a specialist Cognitive Neurology team or Clinical Neuropsychologist is recommended, as they have the tools to make diagnoses that are very frequently missed by the standard test protocols.
- At the time of diagnosis of dementia and at regular intervals subsequently, assessment should be made for medical comorbidities and key psychiatric features associated with dementia, including depression and psychosis, to ensure optimal management of co-existing conditions.
The General Practitioner Assessment of Cognition (GPCOG)
The GPCOG consists of cognitive test items in addition to historical questions asked of an informant. It has been found to be reliable and superior to the Abbreviated Mental Test (AMT) and to the Mini Mental State Examination (MMSE), in detecting dementia. [4, 5]

The Mini Mental State Examination
The MMSE was developed by psychiatrists and is highly regarded [6, 7]. It has some methodological issues and may discriminate positively for those with a higher level of educational attainment. There is no strong evidence to support the use of MMSE as a stand-alone test for the identification of patients with mild cognitive impairment who may develop dementia. [8]

The Six-item Cognitive Impairment Test (6CIT)
Developed in 1983, the 6CIT is relatively unknown, although because of recognition by The Royal College of General Practitioners together with new computerised versions, its usage is increasing. The 6CIT is a much newer test than the AMT (see 'Abbreviated Mental Test (AMT)', below) and it would appear to be culturally and linguistically translatable with good probability statistics; however, it is held back by its more complex scoring system. One study reported that it performed well as a screening instrument in older hospital patients. [9] More research is needed into its use in the wider community.

Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE)
When combined with cognitive tests, such as the MMSE, the IQCODE provides a useful overview and hence sensitivity and specificity as a screening test can be improved. [10] The questionnaire asks how the patient compares today with ten years ago in various activities - eg, remembering birthdays and recalling conversations.

Abbreviated Mental Test (AMT)
The AMT is a quick-to-use screening test that was first introduced in 1972 but is less widely used today. Developed by geriatricians, this is probably the best-known test in general hospital usage; however, it lacks validation in primary care and screening populations. Its disadvantages are the ability to be confounded by intelligence, age, social class, sensitivity of hearing and history of stroke. A four-point AMT has been developed which should be easier to administer than the original ten-point version and may obviate some of these problems. [11]

Test Your Memory (TYM) Test [12]
This is a useful screening test, particularly where clinician time is limited. The test involves:

- Orientation.
- Ability to copy a sentence.
- Semantic knowledge.
- Calculation.
- Verbal fluency.
- Similarities.
- Naming.
- Visuospatial abilities.
- Recall of a copied sentence.

The ability to do the test is also scored.

Further reading & references

- Dementia: Supporting people with dementia and their carers in health and social care; NICE Clinical Guideline (November 2006, last updated September 2016)
- Guidelines for the diagnosis and management of Alzheimer's disease; European Federation of Neurological Societies (2010)

1. Dementia; NICE CKS, April 2015 (UK access only)
10. The Demograph: Biostatistics Unit, University of Melbourne

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