# Dementia assessment

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## ABSTRACT

In some countries the introduction of a national dementia strategy has led to greater emphasis on earlier diagnosis, although population based screening is not recommended as dementia does not fulfil the criteria of a condition suitable for screening. Diagnosing dementia can be difficult owing to its insidious onset, symptoms resembling "normal ageing" memory loss, and a diversity of other presenting symptoms—for example, difficulty in finding words or making decisions. An individual's ability to accommodate, compensate, or even deny his or her symptoms in the early stages should also be considered. The individual's family may also have noticed difficulties in communication and personality or mood changes; family concern is of particular importance. Increasing frequency of patients' visits to their general practice, missed appointments, or confusion over drugs may also be warning signs.

General practitioners are often the first point of contact for patients who are worried that they may have dementia. The role of primary care is to exclude a potentially treatable illness or reversible cause of the "dementia"—for example, depression, vitamin B12 deficiency, or thyroid disturbance; refer for specialist assessment, especially those with unusual symptoms neurological, psychiatric, or behavioural changes or those with major risk factors (for example, important medical comorbidities, psychosocial problems, harm to self); and ensure patients who have mild cognitive impairment (objective cognitive loss not affecting function and daily living activities) are followed up in primary care, and, if their symptoms become more severe, re-referred for specialist assessment.

Initial assessment should include a careful history from both the patient and the main carer, with particular emphasis on disturbance of cognitive function and activities of daily living. A physical examination should be undertaken to look for any focal neurological signs and exclude any visual or auditory problems. Baseline investigations and a brief cognitive assessment, using one of the many tools available should also be carried out before referral to secondary care. The mini-mental state examination has traditionally been recommended as the brief cognitive assessment tool of choice, although copyright restrictions are influencing its use in practice. A clock drawing test may be added to the assessment if it is not already incorporated into the tool. Mini-mental state examination scores are used to indicate the severity of Alzheimer's disease: mild, scores 21-26; moderate, scores 10-20; moderately severe, scores 10-14; severe, scores less than 10. Depression masquerading as dementia is probably the most common differential diagnosis and should always be considered; however, they can coexist and depression may precede dementia. If suspected, a trial of antidepressants may be indicated, with reassessment of the individual's capabilities and cognitive function 6-8 weeks later.

Primary care is increasingly taking on a greater role in both the assessment and the long term care of people with dementia; one multicentre randomised controlled trial found no evidence that specialist memory clinics were more effective than general practice services in providing post-diagnostic support. Secondary services have an important role in defining the dementia subtype, dealing with more complex cases, and stratifying which patients with mild cognitive impairment are at greatest risk of developing dementia and most in need of follow-up.

Imaging, in particular structural scanning (computed tomography or magnetic resonance imaging), is recommended as part of the investigations of people with suspected dementia in UK, European, and guidelines. Imaging is now also embedded in several modern diagnostic criteria for different dementias, including Alzheimer's disease and dementia with Lewy bodies. In modern dementia imaging there is now in addition to diagnosing reversible causes of dementia (for example, tumours) increasing focus on determination of subtype. Structural imaging, particularly magnetic resonance imaging, can also help clarify whether a vascular disease is contributing to the cognitive impairment and thus whether strict adherence to treatment guidance for vascular risks is warranted.

The in vivo imaging biomarkers field for Alzheimer's disease and related disorders is rapidly expanding with the most prominent neuroimaging modalities in the dementia field — structural MRI, metabolic FDG PET, and amyloid and tau PET imaging and newly emerging PET/MR imaging strategies which integrate the advantages of PET and MR to diagnose and monitor AD. In addition fMRI, MRI spectroscopy and encephalographic brain mapping are likely to have clinical applications in the near future. Together, these techniques comprehensively probe the molecular-, cellular- and system-level neurodegenerative changes in the brain.

Recently clinical application of cerebrospinal fluid (CSF) amyloid-β1-42, tau, and phosphorylated tau in the diagnostic evaluation of patients with dementia have been developed. Current recommendations are based on available evidence and consensus from focused discussions for (i) identification of Alzheimer's disease (AD) as the cause of dementia, (ii) prediction of rate of decline, (iii) cost-effectiveness, and (iv) interpretation of results. There is sufficient evidence to support a recommendation to use CSF AD biomarkers as a supplement to clinical evaluation, particularly in uncertain and atypical cases, to identify or exclude AD as the cause of dementia. Because of insufficient evidence, it was uncertain whether CSF AD biomarkers outperform imaging biomarkers.