

# New test could help diagnose early dementia

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A new cognitive test for detecting Alzheimer's disease is quicker and more accurate than many current tests, and could help diagnose early dementia.

An estimated 24 million people throughout the world have [dementia](#) and the number affected will double every 20 years. Early [diagnosis](#) is crucial to effective treatment, but there is no available short cognitive test that is quick to use, examines various skills, and is sensitive to Alzheimer's disease.

So researchers at Addenbrooke's Hospital in Cambridge designed and evaluated a new cognitive test, the TYM ("test your memory"), in the detection of Alzheimer's disease.

The TYM is a series of 10 tasks including ability to copy a sentence, semantic knowledge, calculation, verbal fluency and recall ability. The ability to do the test is also scored. Each task carries a score with a maximum score of 50 points available. The test is designed to use minimal operator time and to be suitable for non-specialist use.

The test was completed by 540 healthy individuals (controls) aged 18 to 95 years of age with no history of neurological disease, memory problems or brain injury. A further 139 patients with diagnosed Alzheimer's or mild cognitive impairment were also tested.

The test was compared with two commonly used bedside cognitive tests - the mini-mental state examination and the Addenbrooke's cognitive

examination.

The mini-mental state examination has been the standard short cognitive test for 30 years and is the main test chosen by the National Institute for Health and Clinical Excellence (NICE) for deciding which patients should receive drugs and for monitoring their response to treatment.

Controls completed the test in an average time of five minutes and gained an average score of 47 out of 50. Patients with Alzheimer's disease performed much poorer than controls with an average score of 33 out of 50. Patients with mild cognitive impairment scored an average of 45 out of 50.

The average TYM score remained constant between the ages of 18 and 70 years, with a small decline in performance after this age. Scores did not differ between men and women or by geographical background, suggesting that education and social class would have only mild effects on the TYM score.

The TYM detected 93% of patients with Alzheimer's disease, while the mini-mental state examination detected only 52% of patients, suggesting that the TYM test is a much more sensitive tool for detecting mild Alzheimer's disease. Compared to the mini-mental state examination, the TYM also takes less time to administer and tests a wider range of cognitive domains.

The Addenbrooke's cognitive examination tests a similar number of cognitive domains to the TYM and is sensitive to mild Alzheimer's disease, but it takes 20 minutes to administer and score.

The TYM is a powerful and valid screening test for the detection of Alzheimer's [disease](#), conclude the authors.

The usefulness of screening tests varies according to the clinical setting, says consultant physician Claire Nicholl in an accompanying editorial.

If the test your memory test is to be adopted more widely it must be validated in a range of settings and different populations, she writes. Until then, the most important message is that clinicians should identify a test that suits their clinical setting, and develop experience in its use to improve the identification of patients with early dementia.

Source: BMJ-British Medical Journal

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