

Simple test offers early warning of Alzheimer's

Oliver Moody Science Correspondent

A simple memory test costing a few pence can give up to two years' warning of the full onset of Alzheimer's disease, a landmark study has found.

Scientists believe that they could use it to catch patients at a "sweet spot", where there is still time to stave off the symptoms of dementia. The disease afflicts 800,000 people in Britain with severe memory loss and cognitive decline. This is projected to rise to a million by 2025.

At present there are no drugs to treat Alzheimer's, although two clinical trials have shown promising early results and are expected to conclude next year. If they succeed, dementia experts predict that the first drugs could be prescribed within a decade. One of the biggest problems is that the disease is usually diagnosed at an advanced stage, making it much harder for doctors to manage the brain damage.

Researchers have found that a cheap spatial memory test invented in Britain a decade ago can not only reliably diagnose Alzheimer's but also give months or even years of warning before dementia becomes evident. Early data suggest that it is 93 per cent accurate.

Experts say that the breakthrough could give doctors a precious window of opportunity to prescribe their patients mental exercises or even next-generation dementia drugs while they could still be effective.

Dennis Chan, a clinical neuroscience lecturer at the University of Cambridge, said that there was an urgent need for a way of screening the millions of middle-aged people who went to their GPs with mild cognitive impairment.

The memory tests for dementia used in doctors' surgeries are no more predictive than a flip of a coin, although some specialist clinics have achieved better results. The only other options in the NHS are a surgical procedure called a lumbar puncture, which costs £700 and involves draining off a sample of the patient's spinal fluid to look for the telltale proteins that mark the disease, or a brain scan that costs £1,500.

Known as the "Four Mountains" test (4MT), the new method involves showing patients a picture of a mountain landscape and asking them to identify

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it among a selection of four landscapes, one of which is the same one seen from a different angle.

Dr Chan's team carried out a pilot study involving 15 British patients with mild cognitive impairment. The 4MT identified the patients in whom Alzheimer's was diagnosed over two years with as much accuracy as the surgical technique, and more than twice as much as conventional memory tests. "The caveat is that we have only proven the principle and the real test is in the work being done now," Dr Chan said.

The test is available as an iPad app

Behind the story

As Alzheimer's disease creeps into the brain one of its first victims is the apparatus for spatial memory that helps you to find your way around (Oliver Moody writes).

This ought to make the mind's satnav a powerful indicator of

early dementia but even young people are apt to get lost in unfamiliar places.

How can we tell the difference between the odd bout of confusion and the harbingers of Alzheimer's? Dennis Chan, who played a leading role in the

new research, says that the distinction is clearer than you might think. Simple absent-mindedness is probably nothing to worry about. More sinister, he says, is failing to recognise and find your way around a place that you know well.

that costs £40. Spread over the hundreds of patients who consult each GP practice about memory problems every year, it would cost a few pence a time. The group will publish their findings in a scientific journal this year, and Dr Chan will speak about the test at next month's Cambridge Science Festival.

Nikolai Axmacher, a neuroscientist at the University of Bonn, said: "It may be possible in the near future to stop further spread of Alzheimer's pathology ... A [way of selecting] patients who are most likely to benefit from these new treatments will thus be very important."

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