

## How to detect Alzheimer's at its earliest stage: Find out

New study suggests you can detect Alzheimer's disease at its earliest stage

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New research suggests you can catch Alzheimer's before it shows its symptoms.

Scientists from Nanyang Technological University (NTU) in Singapore have discovered that a blocked waste removal system in the brain could be one of the earliest warning signs of Alzheimer's disease.

This blockage, which can be seen on regular MRI brain scans, may show up even before memory loss and other symptoms begin.

These blockages occur in small channels around blood vessels, called perivascular spaces which help clear harmful waste from the brain, including proteins like beta amyloid and tau.

These two substances are commonly found in high amounts in the brains of people with Alzheimer's. When the drainage system gets blocked, these toxic substances can build up and cause damage to brain cells.

The study was led by Associate Professor Nagaendran Kandiah from NTU's Lee Kong Chian School of Medicine.

He explained that these clogged spaces, known as "enlarged perivascular spaces," could help doctors detect Alzheimer's disease earlier, just by looking at brain scans that are already performed to check cognitive decline.

This research is especially important because it focused on Asian populations, which have been underrepresented in past Alzheimer's studies.

The team looked at nearly 1,000 people in Singapore, including those with normal memory and thinking and others with early signs of decline.

To better understand the link between clogged brain drains and Alzheimer's, the NTU scientists compared brain scans with blood tests and other signs of brain damage. They looked at people who had mild cognitive impairment, which often comes before dementia, and compared them with those who had no memory or thinking problems.

They found that people with mild cognitive problems were more likely to have enlarged perivascular spaces than those with healthy brain function.

These clogged spaces were also linked to higher levels of beta amyloid and tau in the blood—key warning signs of Alzheimer's.

This study can play an important role for how Alzheimer's is diagnosed and treated. If doctors can spot these changes earlier, they may be able to start treatment sooner and possibly slow the disease's progress.