

# Blood test identifies women at risk from Alzheimer's

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Middle-aged women with high levels of a specific amino acid in their blood are twice as likely to suffer from Alzheimer's many years later, reveals a thesis from the Sahlgrenska Academy at the University of Gothenburg, Sweden. This discovery this could lead to a new and simple way of determining who is at risk long before there are any signs of the illness.

The thesis is based on the Prospective Population Study of [Women](#) in Gothenburg, which was started at the end of the 1960s when almost 1,500 women between the ages of 38 and 60 were examined, asked questions about their health and had blood samples taken. Nearly all of the samples have now been analysed and compared with information on who went on to suffer from Alzheimer's and [dementia](#) much later.

"[Alzheimer's disease](#) was more than twice as common among the women with the highest levels of homocysteine than among those with the lowest, and the risk for any kind of dementia was 70 per cent higher," says doctor Dimitri Zylberstein, author of the thesis.

Homocysteine is an amino acid that is important for the body's metabolism. It is known that high levels of homocysteine can damage the [blood vessels](#) and increase the risk of blood clots. Previous longitudinal studies linking homocysteine and dementia had 8 years of follow-up at most. The present study is by far the longest one with follow-up time of 35 years. The study is also the first to show association between homocysteine levels in middle aged women and dementia development

several decades later. The researchers do not yet know whether it is the homocysteine itself that damages the brain, or whether there is some other underlying factor that both increases levels of the homocysteine and causes dementia.

Historically elevated homocysteine levels were related to certain vitamin deficiencies (B12 and folate). Today we know that high homocysteine levels might be present even with perfectly normal vitamin status.

"These days we in our clinical practice use homocysteine analyses mainly for assessment of vitamin status. However, our results mean that we could use the very same analysis for assessment of individual's risk profile for dementia development. This opens the possibility for future preventive treatment at a very early stage", says Zylberstein.

The thesis also looks at a gene which, in some variants, appears to offer protection against dementia. This gene variant reduces the risk of dementia by no less than 65 percent when present doubled (homozygous) which occurs in just one in ten Swedes and by 40 percent when present in mixed form (heterozygous) in additional four of ten Swedes.

"We have only been able to carry out a genetic analysis on just over 550 of the blood samples from the Prospective Population Study of Women, and want to undertake bigger studies before we can say for sure that the gene really does protect against dementia," says professor Lauren Lissner who supervised the thesis. "We hope to be able to perform the same analysis on more samples from the study."

Source: University of Gothenburg ([news](#) : [web](#))

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