

Gene tests and brain imaging reveal early dementia

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Dementia diseases develop insidiously and are generally discovered when the memory has already started to deteriorate. New research from Karolinska Institutet shows, however, that approaching Alzheimer's can be detected several years before the symptoms manifest themselves.

Dementia involves a serious deterioration of mental function caused by some kind of dementia disease of the brain, of which Alzheimer's is the most common. Although there is currently no cure for Alzheimer's, it is possible to inhibit its development if the treatment is given early enough. However, with today's diagnostics, it is very difficult to identify people with early Alzheimer's.

A new doctoral thesis by Johanna Lind, Karolinska Institutet in Sweden, now shows that genetic mapping and brain imagery can be used to identify people who will develop dementia even before any clinical symptoms appear.

"This is a crucial step towards the better diagnosis of Alzheimer's," she says. "If the method is developed it can help us find the people who'd benefit most from treatment in good time."

The method is based on the well-established fact that the APOE protein affects the risk of developing Alzheimer's. APOE is a lipid-transporting protein important in, amongst other things, the repair of cerebral neurons. Roughly one person in five carries a genetically determined variant of APOE that is associated with an increased risk of Alzheimer's.

In her study, Johanna Lind was able to show that some of the people in this risk group had reduced parietal lobe activity, detectable using an MR camera, and that these same people were the ones who went on to suffer memory deterioration two to three years later.

"It's surprisingly difficult to diagnose Alzheimer's with any certainty, but things are made easier if you know who runs the greatest risk," she says. "If genetic mapping, MRI and cognitive tests all suggest approaching Alzheimer's, it might be an idea to start a course of treatment."

Source: Karolinska Institutet

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