

Mayo study seeks to pretreat Alzheimer's in effort to prevent brain damage

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The day is coming when doctors will be able to diagnose and treat Alzheimer's disease before people have symptoms, and Ronald Petersen is among the doctors laying the groundwork for that future.

Petersen is director of the Mayo Clinic Alzheimer's Disease Research Center, which is using detailed tests to monitor [cognitive changes](#) in [older adults](#) from Olmsted County, Minn., as they age.

He discussed the early results of the study recently at a talk sponsored by several programs at the University of Pennsylvania, including the Penn Memory Center.

Among some puzzling findings, the Mayo doctors have learned that a fair number of patients look cognitively impaired one year and fine the next. They're still at higher risk for dementia than people who have never shown mild cognitive impairment, a stage that often precedes Alzheimer's.

More surprising, a high percentage of people with mild cognitive impairment had evidence of structural degeneration in their brains but not of abnormal deposits of amyloid, a hallmark [protein](#) found in Alzheimer's disease.

This is important, Petersen said, because drug firms are trying to develop drugs that target amyloid. So far, they haven't proven effective. It's important, he said, that such drugs be tested in the right people.

The Mayo study, which includes 4,000 people, began in 2004 with participants above age 70 who did not have dementia. In 2011, the minimum enrollment age was dropped to 50.

Scientists believe that the "preclinical" phase of Alzheimer's - the period when errant proteins are accumulating and the brain is changing but there are no symptoms - may last 15 years. The goal is to diagnose and treat people before their brains are irreparably damaged.

Doctors can't do that yet, but researchers are studying how [brain images](#) and tests of spinal fluid correlate with changes in thinking and memory.

An earlier study of the Mayo group found that about 16 percent of those ages 70 to 89 had [mild cognitive impairment](#).

Petersen said that about half of patients without physical evidence of disease tested normal a year later while 8 percent progressed to dementia. Seventeen percent of patients who had signs of amyloid deposition and structural [brain](#) changes progressed to a dementia diagnosis in a year while only 5 percent returned to normal. Meanwhile, the patients who had apparent neurodegeneration progressed at the highest rate - 22 percent - and also returned to normal at the highest rate - 36 percent. "There's a lot of bounce here," Petersen said.

Petersen foresees a time when a [dementia](#) diagnosis will be more complicated than it is now. It will include information on which proteins have gone awry, genetics, and other medical problems. All of that will allow for more targeted treatments and it may mean that people who are now said to have Alzheimer's disease will get a different diagnosis.

Meanwhile Mayo doesn't tell study participants what all of its tests are finding, although it will share tests with their [doctors](#) if patients want it. "It's research information," he said. "We don't know what it means."

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