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White matter changes may predict dementia risk

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Elderly people with no memory or thinking problems are more likely to later develop thinking problems if they have a growing amount of "brain rust," or small areas of brain damage, according to a study published in the July 14, 2009, print issue of *Neurology*, the medical journal of the American Academy of Neurology.

For the study, researchers followed 49 people age 65 and older who had no memory or thinking problems for an average of 9.5 years. The participants had at least three brain scans and annual tests of thinking skills. During the study, 24 of the participants developed persistent cognitive impairment, or memory problems that are a potential precursor to Alzheimer's disease or another type of dementia.

The study found that those who had the fastest rate of growth in the amount of small areas of brain damage, or white matter hyperintensities, were more likely to later develop permanent thinking problems that in many cases led to dementia than those with a slow rate of growth in these types of brain lesions. Every cubic centimeter (less than a quarter of a teaspoon) increase in the amount of brain lesions was associated with a 94 percent increased risk of developing cognitive impairment.

The total amount of brain lesions at the beginning of the study was not a predictor of risk of developing cognitive impairment after taking into consideration the rate of change of these brain lesions over time.

"We need to determine factors that can decrease the accumulation of

white matter hyperintensities over time," said study author Lisa Silbert, MD, MCR, of Oregon Health & Science University in Portland and a member of the American Academy of Neurology. "We also need to determine how to identify those who are vulnerable to this accumulation so they can be targeted for potential early prevention or treatment methods."

Source: American Academy of Neurology (news : web)

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