Could Smell and Eye Tests Hold the Key to Alzheimer's Disease Prevention?

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Loss of your sense of smell or the development of eyesight problems as you age may be early predictors of cognitive decline, according to findings from a wide array of new studies presented at the Alzheimer's Association International Conference 2016. Researchers say the findings may eventually help doctors create tests to identify the disease and intervene in its progression earlier than ever, CNN reports.

Currently, Alzheimer's is the most common type of dementia in the world, causing problems with memory, thinking and behavior. Doctors believe the disease is driven by toxic amyloid plaque, a sticky buildup of protein found in the body that accumulates in the brain and dulls its functions over time. (Right now, the only effective tests for amyloid plaque are expensive PET scans or invasive spinal taps.)

For the study on smell, two separate teams of researchers at Columbia University enlisted the help of 397 senior citizens who were deemed to have healthy cognitive function at the beginning of the trial. Each participant was tested with the official University of Pennsylvania Smell Identification Test (UPSIT) and also underwent brain scans. Scientists then followed them for four years.

During that time, 49 people in the group developed Alzheimer's disease, while nearly one in five started showing signs of weakening mental function. Interestingly, researchers found that those who scored lower on the odor test at the beginning of the study were far more likely to be among those who experienced cognitive decline later on. Scientists concluded, however, that since odor identification is so subjective, a smell test might not make for an accurate stand-alone test.

In other recent studies, researchers examined the relationship of retinal thickness with Alzheimer's disease progression. When scientists at the UCL Institute of Ophthalmology in London conducted eye tests, physical exams, cognitive tests and surveys of more than 33,000 people, they found a significant link between thinner layers of retinal nerve fibers and poor cognition scores. A subsequent study conducted at the University of Waterloo confirmed that amyloid deposits could actually be found in the eyes long before cognitive impairment begins.

According to Heather Snyder, PhD, director of medical and scientific operations at the Alzheimer's Association, the four studies together represent "a positive step forward to earlier detection and prevention" of the condition. But most scientists agree that much more research needs to be

done.

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