
News Release

News Bureau
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MULTIMEDIA ALERT: For audio and video of Dr. Mielke talking about her research, visit the [Mayo Clinic News Network](#).

EMBARGOED: Hold for release until Thursday, Dec. 26, 2013, 4 p.m. EST
American Academy of Neurology

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For Immediate Release

Mayo Clinic: Concussion History Associated with Risk of Alzheimer's Disease

ROCHESTER, Minn. — A new study suggests that a history of concussion involving at least a momentary loss of consciousness may be related to the buildup of Alzheimer's-associated plaques in the brain. The research is published in the Dec. 26, 2013, online issue of Neurology[®], the medical journal of the American Academy of Neurology.

“Interestingly, in people with a history of concussion, a difference in the amount of brain plaques was found only in those with memory and thinking problems, not in those who were cognitively normal,” says study author Michelle Mielke, Ph.D., a Mayo Clinic researcher.

For the study, people from Olmsted County in Minnesota were given brain scans; these included 448 people without any signs of memory problems and 141 people with memory and thinking problems called mild cognitive impairment. Participants, who were all age 70 or older, were also asked about whether they had ever experienced a brain injury that involved any loss of consciousness or memory.

Of the 448 people without any thinking or memory problems, 17 percent reported a brain injury and 18 percent of the 141 with memory and thinking difficulties reported a concussion or head trauma. The study found no difference in any brain scan measures among the people without memory and thinking impairments, whether or not they had head trauma. However, people with memory and thinking impairments and a history of head trauma had levels of amyloid plaques an average of 18 percent higher than those with no head trauma history.

“Our results add merit to the idea that concussion and Alzheimer's disease brain pathology may be related,” Dr. Mielke says. “However, the fact that we did not find a relationship in those without memory and thinking problems suggests that any association between head trauma and amyloid is complex.”

The study was supported by the National Institutes of Health, the Robert Wood Johnson Foundation, the Alexander Family Alzheimer's Disease Research Professorship, GE Healthcare, the Elsie and Marvin Dekelboun Family Foundation, the MN Partnership for Biotechnology and Medical Genomics and the Robert H. and Clarice Smith and Abigail van Buren Alzheimer's Disease Research Program.

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