

# Anesthesia or hypothermia: Warning for Alzheimer's patients

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Everyone knows that its important to keep a cool head, but a new study published online in *The FASEB Journal* shows that for Alzheimer's patients, a cool head may make the disease worse. In the research report, scientists show that a protein associated with Alzheimer's (called "tau") builds up in brain cells at an increased rate when temperatures fall, such as when a patient is anesthetized or experiences hypothermia. This finding should be of immediate concern to surgeons, dentists, and any other health care professionals who anesthetize patients with Alzheimer's or patients at an elevated risk for the disease.

"We hope that this research will initiate an interest in taking precautions to limit the impact of [anesthesia](#) on the disease," said Emmanuel Planel of Columbia University Medical Center and one of the scientists involved in the work.

To make this discovery, the scientists used two groups of mice that make the abnormal tau protein that accumulates in Alzheimer's [patients](#). One group was anesthetized, and one group was not. A week after anesthesia, the two groups were compared for the amount of tau protein [clumps](#) in their [brain cells](#). The anesthetized group had more of these clumps than the group that was not anesthetized. Furthermore, in mice showing advanced signs of the disease, the build up of tau proteins occurred faster than in those in the early stages.

"Every patient wants a surgeon with a [cool head](#)," said Gerald Weissmann, M.D., Editor-in-Chief of The [FASEB Journal](#), "but

surgeons might not want the same for their patients. People are anesthetized for all kinds of reasons, even dental work, but this study really should make patients and doctors reconsider whether it's really necessary."

More information: Emmanuel Planel, Alexis Bretteville, Li Liu, Laszlo Virag, Angela L. Du, Wai Haung Yu, Dennis W. Dickson, Robert A. Whittington, and Karen E. Duff. Acceleration and persistence of neurofibrillary pathology in a mouse model of tauopathy following anesthesia FASEB J. doi:10.1096/fj.08-122424.  
[www.fasebj.org/cgi/content/abstract/fj.08-122424v1](http://www.fasebj.org/cgi/content/abstract/fj.08-122424v1)

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