

# A high-fat diet could promote the development of Alzheimer's

October 28 2008

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A team of Université Laval researchers has shown that the main neurological markers for Alzheimer's disease are exacerbated in the brains of mice fed a diet rich in animal fat and poor in omega-3s. Details of the study—which suggests that diets typical of most industrialized countries promote the development of Alzheimer's—are outlined in the latest online edition of *Neurobiology of Aging*.

To demonstrate this, the team led by Frédéric Calon used a type of transgenic mice that produce two proteins found in the brains of Alzheimer patients—tau proteins, which prevent proper neuron functioning, and amyloid-beta, associated with the formation of senile plaques within the brains of afflicted patients.

The researchers fed transgenic and regular mice different diets for nine months, after which they compared the effects on the animals' brains.

The mice whose diet was poor in omega-3s and rich in fat (60% of consumed calories) showed amyloid-beta and tau protein concentrations respectively 8.7 and 1.5 times higher than the control group mice, whose food contained 7 times less fat. The high-fat diet also reduced drebrin protein levels in the brain, another characteristic of Alzheimer's disease.

"Metabolic changes induced by such a diet could affect the inflammatory response in the brain," suggests study co-author Carl Julien to explain the link between fat consumption and Alzheimer's.

In most Western countries, diets rich in saturated fats and poor in omega-3s are the norm. "Our findings lead us to believe that a diet containing more omega-3s and less saturated fat could prevent the development of Alzheimer's, at the very least among people genetically predisposed to the disease," comments Dr. Calon. "We cannot state with any certainty that what we have observed among transgenic mice also occurs in humans, but there is no harm in eating less fat and more omega-3s," concludes the researcher.

Source: Université Laval

Citation: A high-fat diet could promote the development of Alzheimer's (2008, October 28)  
retrieved 4 May 2024 from

<https://medicalxpress.com/news/2008-10-high-fat-diet-alzheimer.html>

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