

Research suggests mercury linked to dementia

November 16 2010



New research by Northeastern professor Richard Deth suggests that long-term exposure to mercury may produce Alzheimer's-like symptoms in people. Photo by Mary Knox Merrill.

New research by Northeastern University professor Richard Deth and academic colleagues in Germany suggests that long-term exposure to mercury may produce Alzheimer's-like symptoms in people.

Deth also discovered a probable biological mechanism through which mercury can destroy neurological brain function in humans.

The findings were reported this month in a study published in the *Journal of Alzheimer's Disease*.

The team of researchers conducted a literature review of more than 100 experimental and clinical studies on mercury exposure in cell models,



animals and humans. They found that animals exposed to mercury exhibited many of the pathological changes associated with the Alzheimer's disease, including memory loss, poor cognitive performance and confusion.

The researchers don't have enough evidence to conclude that mercury exposure definitely causes these symptoms in humans, but data indicates a need to restrict exposure as a precautionary measure.

"Mercury is clearly contributing to neurological problems, whose rate is increasing in parallel with rising levels of mercury," said Deth, a professor of pharmacology in the Bouvé College of Health Sciences. "It seems that the two are tied together."

Mercury, one of the most toxic natural substances, is found in some species of food fish, in amalgam dental fillings and in energy-saving fluorescent light bulbs. Mercury emissions from coal-burning power plants enter the food chain.

The heavy metal evaporates at room temperature, turns into a gas, enters the body, crosses the blood-brain barrier and gets trapped inside the brain, where it accumulates over time.

Deth found that mercury exposure impairs cognitive function by reducing the efficacy of selenium, an antioxidant that helps keep the brain healthy by suppressing damaging chemical reactions in humans.

Mercury binds to selenium, said Deth, promoting "oxidative stress" and decreasing the amount of available antioxidants. Nerves stop functioning normally, cognitive impairment sets in and cells die.

Deth's coauthors on the paper, titled "Does Inorganic <u>Mercury</u> Play a Role in Alzheimer's Disease? A Systematic Review and an Integrated



Molecular Mechanism," include colleagues from the Institute of Transcultural Health Studies, at the European University Viadrina, the European Office of the Samueli Institute, and the Department of Environmental and Integrative Medicine, Konstanz, all in Germany.

Provided by Northeastern University

Citation: Research suggests mercury linked to dementia (2010, November 16) retrieved 2 May 2024 from <u>https://medicalxpress.com/news/2010-11-mercury-linked-dementia.html</u>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.