

Lack of sleep may play role in Alzheimer's study



By Julie Steenhuisen Julie Steenhuisen ó
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CHICAGO (Reuters) ó A study in mice suggests lack of sleep may play a role in the development of Alzheimer's disease, U.S. researchers said on Thursday. The findings, reported in the journal *Science*, are some of the first to link sleep with the development of Alzheimer's, the most common form of dementia.

Researchers at Barnes-Jewish Hospital in St. Louis studied levels of amyloid beta -- a protein that accumulates in the brain of people with Alzheimer's -- in mice genetically engineered to have a version of Alzheimer's disease. Amyloid levels rose in the brain when the mice were awake, and fell when they slept. When the researchers prevented the mice from sleeping, it made matters worse, said Dr. David Holtzman of Barnes-Jewish Hospital, who worked on the study. "Sleep deprivation markedly accelerated amyloid-beta plaque formation," he said in an e-mail.

When the team injected orexin -- a compound that regulates sleep -- into the brains of the mice, the mice stayed awake longer, and amyloid beta levels rose. And when they blocked orexin, these levels decreased. In people, orexin plays a role in the sleep disorder narcolepsy, which causes excessive sleepiness. Holtzman said the findings suggest drugs that target orexin may be useful to try as Alzheimer's treatments.

They also reinforce the need to treat sleep disorders, not only because they cause immediate problems, but because they may have a long-term impact on brain health, he said. Despite decades of research, doctors still have few effective weapons against Alzheimer's, a mind-robbing form of dementia for which there are few effective treatments and no cure. Many treatments that have shown promise in mice have had little effect on humans with Alzheimer's disease.

More than 35 million people globally will suffer from Alzheimer's disease or other forms of dementia in 2010, according to the Alzheimer's Association.

(Editing by Maggie Fox and Todd Eastham)

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