



Alzheimer's In The News:

Brain Cells Give New Clues to Alzheimer's Protein plaques disperse a free radical that can damage neurons, scientists say

THURSDAY, April 2 (HealthDay News) -- By uncovering a mechanism that causes damage to brain synapses during Alzheimer's disease, researchers might have found a key to reducing or preventing nerve degeneration for these patients.



According to a report in the April 3 issue of *Science*, researchers at the U.S.-based Burnham Institute for Medical Research have shown that beta-amyloid protein "multimers" create excessive nitric oxide. This free radical then reacts with the protein Drp1, causing the fragmentation of mitochondria -- the cell's energy storehouses -- in the brain, a violent process that causes the neurodegeneration linked to Alzheimer's disease.

When mitochondria break apart, the reaction damages synapses leading to nerve cell death. As brain synapses are vital for learning and memory, any damage or malfunction of these message-carrying connections can lead to Alzheimer's and dementia. Multimers had also been previously linked to Alzheimer's disease.

"By identifying Drp1 as the protein responsible for synaptic injury, we now have a new target for developing drugs that may slow or stop the progression of Alzheimer's," study leader Dr. Stuart A. Lipton, director of the Del E. Webb Center for Neuroscience, Aging and Stem Cell Research, said in a news release issued by the Burnham Institute.

SOURCE: Burnham Institute, news release, April 2, 2009

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