

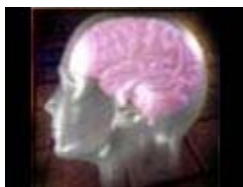
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Researchers Identify Trigger For Alzheimer's Disease

Study Helps Investigate New Therapies To Halt Disease

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Researchers in California have identified a molecule that triggers the onset of memory decline in mice genetically engineered to develop brain lesions associated with Alzheimer's disease.



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The trigger is a protein called beta amyloid, often abbreviated as A-beta. Researchers said it accumulates within neurons in the mice's brains and identified that early A-beta accumulation triggers the onset of memory decline.

"Once the plaques and tangles form, it is too late," said Frank LaFerla, the study's chief researcher and an associate professor of neurobiology and behavior at the University of California's Irvine campus.

Researchers said all brains produce the protein, and healthy brains are able to clear away excess amounts. But brains with Alzheimer's disease are unable to control accumulation of A-beta, they said.

They monitored the mice from birth until six months, finding that the mice did not exhibit Alzheimer's disease symptoms at two months of age.

But at four months, the mice showed a decline in their long-term memory retention. The researchers said they found, at that age, a buildup of A-beta in neurons of the hippocampus, amygdala and cerebral cortex regions of the mice's brains.

The researchers concluded that, because the plaques did not appear at the four-month stage, the findings suggest that Alzheimer's disease contributes to cognitive decline only later in life, and that A-

beta is the molecular trigger for the disease's onset.

Researchers said the mice were making more A-beta than their brains could clear naturally. When the researchers cleared away the protein within the neurons, they were able to correct the memory impairments in the mice.

They found that a re-emergence of A-beta inside the mice's neurons again reinforced their findings of a trigger for the onset of memory problems.

The researchers report their findings in the [March 3 issue](#) of *Neuron*.

 **More Information:** [American Federation for Aging Research - Alzheimer's Information Center](#)

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