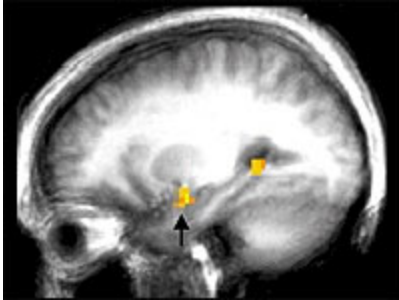




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Brain Study Indicates Why Some Memories Persist

by Jon Hamilton



The older a memory is when it's recalled, the less activity researchers see in areas of the brain marked in yellow. This suggests that the brain's interior structures, known to play a role in forming new memories, aren't that involved in retrieving older ones. Christine Smith, Larry Squire

[Morning Edition](#), January 29, 2009 · A new study appears to explain why people with Alzheimer's disease often remember events from the distant past — but not things that happened recently.

The research, published in *The Journal of Neuroscience*, looked at a structure deep in the brain called the hippocampus. Scientists know that when disease or injury damages the hippocampus, people have trouble forming new memories or retrieving recent memories.

Scientists also know that areas of the brain near the hippocampus are usually the first to be affected by Alzheimer's disease. "That's why Alzheimer's typically begins with memory problems," says Larry Squire, a brain researcher at the University of California, San Diego and the Veterans Affairs Medical Center in San Diego.

But it's been something of a mystery how the brain protects older memories. So Squire studied 15 healthy people in their 50s and 60s. A scanner monitored their brains while they tried to answer questions about news events from the past 30 years.

"What we found was that the hippocampus was most active when subjects were recalling memories about new events that occurred just a year or two earlier," Squire says. "The hippocampus became less active as subjects recalled memories that were five years or 10 years old."

As people tried to remember older events, the scientists saw more and more activity in the cerebral cortex on the surface of the brain.

The results suggest that the hippocampus is necessary to form new memories and to retrieve recent memories, says Russell Poldrack, a brain scientist at UCLA. But it plays little or no role once memories are a few years old.

"This is the clearest demonstration yet of what happens as memories get older," Poldrack says. "It's pretty compelling evidence."

Poldrack says the study explains why people in the early stages of Alzheimer's are "more likely to forget where they put their keys yesterday than to forget something that happened back when they were in high school."