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Brain Circuits That Suppress Memory Found

May lead to better understanding of amnesia

THURSDAY, Jan. 10 (HealthDay News) -- Brain circuits that play a key role in memory suppression have been identified by Israeli researchers.

The findings may lead to a better understanding of the mechanisms underlying amnesia, said the researchers from The Weizmann Institute of Science in Rehovot and the Edith Wolfson Medical Center in Holon. The study appears in the Jan. 10 issue of *Neuron*.

In the study, the scientists used MRI to study brain activity in people hypnotized to forget and then remember a documentary they'd watched a week earlier.

The brain scans revealed reduced activity in some areas and increased activity in other areas during memory suppression. When the hypnotized participants were told to remember the documentary, there was a recovery of activity in the inactive regions.

"The paralleled recovery of brain activity and memory performance strongly suggests that suppression was exerted at early stages of the retrieval process, thus preventing the activation of regions that are crucial for productive retrieval," the study authors wrote.

The findings suggest that the amnesia induced by posthypnotic suggestion "affects an executive pre-retrieval monitoring process, which produces an early decision on whether to proceed or not on retrieval, and in case of a [question about the movie], aborts the process," they wrote.

Further research is needed to determine whether these findings apply to actual clinical cases of amnesia, the researchers noted.