

Study links delirium and long-term cognitive decline in Alzheimer's patients

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Patients with Alzheimer's disease who suffered episodes of delirium while hospitalized had a sharply increased rate of mental decline for up to five years after being hospitalized compared to those who did not have any such episodes, according to a study by researchers at The Institute for Aging Research at Hebrew SeniorLife, an affiliate of Harvard Medical School.

The paper, published today in the [Archives of Internal Medicine](#), noted that delirium -- an acute decline in [cognitive status](#), particularly attention and executive function, that typically lasts for a day or several days -- is highly prevalent among Alzheimer's [patients](#) who are hospitalized.

"Delirium developed in more than half of the patients we studied," said Alden L. Gross, PhD, MHS, a postdoctoral researcher at the Institute and lead author of the study, the first to examine the significance of the prevalence of delirium over such an extended period of time.

The study showed that patients who had developed delirium during their hospital stays experienced greater [cognitive deterioration](#) in the year following the hospitalization than those who had no episodes of delirium and found that [mental deterioration](#) proceeded at twice the rate of those who had not suffered such episodes in the year after the hospitalization. Those who suffered episodes of delirium maintained a more rapid rate of cognitive deterioration through up to five years of follow-up.

The researchers studied data collected by the Massachusetts Alzheimer's

Disease Research Center on 263 patients. Data on their cognitive status before and after their hospitalizations was evaluated. There was no difference in the rate of cognitive deterioration between the two groups of patients prior to their hospitalizations. The patients were hospitalized for a variety of reasons, including falls, heart issues and other problems.

Alzheimer's is characterized primarily by [memory loss](#). Delirium has typically been considered to be temporary and patients suffering episodes are said to be "out of it" and unable to do tasks requiring sustained concentration such as maintaining or switching attention from one thing to another, according to Gross.

He said the condition is not always recognized by nurses and doctors caring for Alzheimer's patients. "But our research suggests it is an important medical problem," he said.

The sharply increased trajectory of cognitive deterioration on the part of those who had suffered delirium episodes was determined by scores on a number of tests that asked questions having to do with orientation to time, place, current events and other matters.

Gross said the costs of delirium to the health care system are estimated at between \$40 billion to \$150 billion annually, so it is important that clinicians do a better job of recognizing the condition when it occurs. While strategies to treat delirium when it occurs are still being studied, he said it may be more important to implement proven strategies to prevent it from occurring in the first place, such as the [Hospital Elder Life Program](#).

There are already some things known to help in preventing episodes of delirium while hospitalized, according to Sharon K. Inouye, MD, MPH, director of the Aging Brain Center at Hebrew SeniorLife and senior author on the study, such as making sure patients receive orientation,

mobility, nutrition, hydration and sleep. In addition, he said avoiding use of inappropriate medications is important. Finally, environmental factors such as making sure there is light in the room during the day and dark at night and having large clocks in the room can be helpful, she added.

"Strategies to prevent [delirium](#) may represent a promising avenue to explore for ameliorating cognitive deterioration in [Alzheimer's](#)," the paper concluded.

Provided by Hebrew SeniorLife Institute for Aging Research

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