

# Hospitalization linked to likelihood of cognitive decline for older adults

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Older patients hospitalized for acute care or a critical illness are more likely to experience cognitive decline compared to older adults who are not hospitalized, according to a study in the February 24 issue of *JAMA*.

A large proportion of patients who are hospitalized for acute care or care of a critical illness are [older adults](#). Some studies have suggested that many survivors of critical illness experience long-term [cognitive impairment](#), but these studies did not measure cognitive function before a critical illness, according to background information in the article.

William J. Ehlenbach, M.D., M.Sc., of the University of Washington, Seattle, and colleagues analyzed data from a study that was conducting cognitive testing on older adults, and examined administrative data from hospitalizations to determine whether hospitalizations for acute illness or critical illness were associated with [cognitive decline](#) and [dementia](#). The study included data from 1994 through 2007 on 2,929 individuals, 65 years old and older without dementia at the beginning of the study. Cognition was measured with the Cognitive Abilities Screening Instrument (CASI) every 2 years at follow-up visits, and those with scores below a certain point underwent a clinical examination for dementia.

During an average follow-up of 6.1 years, 1,601 participants had no hospitalizations while enrolled in the study; 1,287 study participants were hospitalized for noncritical illness; and 41 participants were hospitalized for a critical illness.

There were 146 cases of dementia among those never hospitalized during the study. Among those experiencing 1 or more noncritical illness hospitalizations but no critical illness hospitalizations during study participation, there were 228 cases of dementia. There were 5 cases of dementia among those experiencing 1 or more critical illness hospitalizations during the study.

The researchers found that patients who had a hospitalization for an acute care or critical illness had lower CASI scores at follow-up compared to those who were not hospitalized. Also, after adjusting for various factors, patients hospitalized for a noncritical illness had a 40 percent higher risk of dementia. Patients hospitalized for a critical illness also had a higher risk of dementia, but the result was not significant, possibly because of the small number of participants in this group.

"The mechanism of this association is uncertain. Hospitalization may be a marker for cognitive decline or dementia that has not been diagnosed," the authors write. "These results also could suggest that factors associated with acute illness, and to a greater degree with critical illness, may be causally related to cognitive decline."

The researchers add that the mechanisms through which critical illness may contribute to neurocognitive impairment are multiple, with evidence suggesting that hypoxemia (decreased partial pressure of oxygen in blood), delirium, hypotension, glucose dysregulation, systemic inflammation, and sedative and analgesic medications all may potentially play a role.

"Further studies are needed to better understand the factors associated with acute and critical illness that may contribute to [cognitive](#) impairment," the authors conclude.

**More information:** JAMA. 2010;303[8]:763-770.

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