

# Altered pain processing in patients with cognitive impairment

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People with dementia and other forms of cognitive impairment (CI) have altered responses to pain, with many conditions associated with increased pain sensitivity, concludes a research review in *Pain*, the official publication of the International Association for the Study of Pain.

The available evidence questions the previous notion that people with CI have reduced [pain sensitivity](#) to [pain](#). Rather, "It appears that those with widespread brain atrophy or neural degeneration...all show increased pain responses and/or greater pain sensitivity," write Ruth Defrin, PhD, of University of Tel Aviv, Israel, and colleagues.

## Differences in Pain Sensitivity with Cognitive Impairment

Dr. Defrin and colleagues analyzed previous studies on pain responses in cognitively impaired patients. The topic is an important one, as many patients with CI—which can result from a wide range of neurological and neurodegenerative diseases, or even normal aging—have "sustained and complex healthcare needs" involving pain.

"However, individuals with CI can have difficulty communicating the features of their pain to others, which in turn presents a significant challenge for effective diagnosis and treatment of their pain," the researchers write. Because of those communication issues, it has even

been suggested that cognitively impaired people have reduced pain sensitivity. Dr. Defrin and coauthors believe that understanding the experience and responses to pain in people with CI is "an imperative ethical goal."

Evidence suggests that even normal, healthy aging may be associated with increased vulnerability to pain, as well as slightly reduced cognitive performance. These changes may set up a "vicious circle," with pain leading to a decline in cognitive function and vice versa.

Most studies suggest that the experience of pain is elevated in patients with mild to moderate Alzheimer's disease. Pain sensitivity in late Alzheimer's disease is unclear; Dr. Defrin and colleagues emphasize the need for multi-method approaches to assessing pain in this group of patients.

The effects of other types of neurodegenerative impairment on pain processing appear variable. Pain responses seem to be decreased in patients with frontotemporal dementia (Pick's disease) and Huntington's disease, but increased in those with Parkinson's disease. Effects on pain sensitivity may vary even for diseases affecting similar areas of the brain.

Various developmental disabilities—such as autism, cerebral palsy, and intellectual disability—are also associated with increased pain sensitivity. As in other groups of patients with communication difficulties, alternative ways of assessing pain are needed.

Pain processing also appears to be affected in patients with various types of brain damage, such as stroke and [traumatic brain injury](#). Recent studies have demonstrated brain responses to pain stimuli even in severely brain-damaged [patients](#) in a vegetative state.

Within the limitations of the studies performed to date, the analysis suggests that pain processing is frequently altered in cognitively impaired individuals, often with increased sensitivity to painful stimuli. Dr. Defrin and colleagues hope their review will increase awareness of possible changes in pain perception and processing and promote better approaches to pain management in people living with CI.

**More information:** "Experimental pain processing in individuals with cognitive impairment: Current state of the science." [DOI: 10.1097/j.pain.000000000000195](https://doi.org/10.1097/j.pain.000000000000195)

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