

# Study identifies four distinct pain trajectories in nursing home residents

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Despite awareness that pain is common in nursing home residents, there has been minimal attention focused on how this pain changes over time. A new study from Regenstrief Institute and Indiana University School of

Nursing researchers presents compelling evidence of the existence of four distinct pain trajectories in this population.

This new understanding of pain over time can help nursing home staff and clinicians better understand, recognize and respond to risk factors associated with persistent pain in individuals living in nursing homes. Ultimately, consideration of pain trajectories may alter courses of care and illness, prevent adverse outcomes and improve quality of life.

"Identification of pain trajectories can help us improve pain control for nursing home residents," said Connie Cole, Ph.D., DNP, APRN, corresponding and lead author of the study. "We can identify risk factors, such as obesity or fracture, and use those to recognize individuals who are at increased risk for pain. For patients who are not able to self-report, such as someone with Alzheimer's disease, we can use those factors to identify that they might be at increased risk for pain and therefore monitor them more closely."

Persistent pain is associated with increased likelihood of depression, sleep problems, decreased happiness and diminished life satisfaction resulting in reduced quality of life and poorer health outcomes.

"This work highlights that pain is undertreated among many populations, including older adults in nursing homes. It's critical that we continue to shine a spotlight on the unmet needs of these vulnerable individuals," said study senior author Susan Hickman, Ph.D., director of Indiana University Center for Aging Research at Regenstrief Institute and interim president and CEO of the Institute.

A total of 46,103 pain assessments of 4,864 nursing home residents, nearly two-thirds of whom were female, from 44 facilities were analyzed in the study.

The researchers identified four distinct long-term pain trajectories.

- persistent pain over time (14 percent)
- pain initially increasing, holding steady and then decreasing over time (15 percent)
- pain initially decreasing, holding steady and then increasing over time (22 percent)
- pain consistently absent (49 percent)

Among the study's numerous findings regarding risk factors associated with various pain trajectories:

- Obesity and intact cognition were associated with the persistent pain presence trajectory as was living in a rurally located nursing home.
- Hip fracture was associated with a five-fold increased risk of [persistent pain](#).
- Residents in the increasing-decreasing pain trajectory were at greater risk of death.
- Female gender, living in a rurally located nursing home, intact cognition and contracture (a condition of shortening and hardening of muscles) were common factors associated with all three of the trajectories in which pain was present.
- Nursing home residents with normal body mass index (BMI) or a diagnosis of Alzheimer's disease or related dementia were less likely to be in any of the three trajectories in which pain was present.

"As a clinician, my experience has been that nursing home residents with a diagnosis of Alzheimer's disease or dementia are less likely to be in any of the three trajectories with pain than those with intact cognition, due to inability to communicate and the difficulty in clinically evaluating pain in cognitively impaired individuals," said Dr. Cole, who has worked

as a [nurse practitioner](#). "Identifying residents likely to be underrepresented in the pain trajectories may provide impetus for nursing home staff to improve pain assessment and evaluation."

"The idea that there are trajectories of pain has relevance for a broader patient population beyond the nursing home setting," added Dr. Hickman. "There is pressing need to better understand [pain](#), how it changes over time, and what [risk factors](#) are associated, in particular, among older adults and those with cognitive impairment who are unable to express and report their own experiences."

"Pain trajectories of nursing home residents" is published in the *Journal of the American Geriatrics Society*.

**More information:** Connie S. Cole et al, Pain trajectories of nursing home residents, *Journal of the American Geriatrics Society* (2022). [DOI: 10.1111/jgs.18182](#)

Provided by Regenstrief Institute

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