

# Isolating the Elderly Is Bad for Their Health

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Society hasn't figured out how to protect the elderly from coronavirus without imposing another very real health threat: isolation. For more than 100 days in some places, residents in nursing homes and retirement communities across the country have been separated from spouses, children, grandchildren and friends of many decades. Residents have been kept apart, eating meals in solitary.

The actions are well-intended. Covid-19 has caused more than 56,000 deaths in about 11,600 long-term care facilities in 44 states, [according to the Kaiser Family Foundation](#).

But there are unintended consequences. As scientists learn more about how the human brain works, they are getting a clearer picture of neurological and physiological changes that occur when people live in isolation. These changes may help explain why living alone with little social interaction is often implicated in higher rates of cardiovascular and other types of disease, worsening dementia and Alzheimer's, and shortened lives.

Plenty of research shows that social support and social "integration," which refers to a person's varied roles and responsibilities, play a big role in determining someone's health and longevity. "The combination of social isolation and loneliness is very unhealthy for anyone, but for older adults, it's particularly bad," said Bert Uchino, University of Utah psychology professor who studies the ways in which social relationships affect health. "Just about every biological system is impacted in one way or another by psychosocial relationships."

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Humans are wired to be social—not for fun, but for survival. We are so sensitive to social relationships that just holding the hand of a partner or friend decreases activity in [regions of the brain that respond to a threat](#). Holding the hand of a stranger won't do that and may have the opposite effect, according to a recent study. "People are a conditioned stimulus for us," says Dr. Uchino.

[Perceived isolation causes stress](#). Studies of fish that try to get to the middle of the school when a predator approaches, and of mice whose sleep is disrupted when separated from others, suggest that isolation "activates neural, neuroendocrine and behavioral responses" to threat, including constricting blood flow and altering gene expression and immunity, researchers wrote in a 2014 article in the Annual Review of Psychology.

Loneliness was believed by some scientists to be adaptive, causing stress that would drive connection to others. But if social stress becomes chronic, it can impair the immune system in as little as one month, according to research by Sheldon Cohen, a Carnegie Mellon psychology professor who has spent more than three decades studying the interplay of psychological and social stress with immunity to viruses.

Lack of companionship can impair cognitive function. Scientists have found more of the memory-protecting protein BDNF in both mice and people who are less isolated. BDNF, or brain-derived neurotrophic factor, helps protect and maintain nerve cells and plays a role in the connections between them. It helps regulate brain plasticity, which is important for memory and learning. Social stress [induces increased production of the damaging protein beta-amyloid](#) and likely contributes to a chain of events that interferes with the production of BDNF, according to animal research at the National Cheng Kung University in Taiwan. Conversely, social interaction [improves memory through a different biochemical chain of events](#).

Isolation and loneliness could be important factors in the [development and progression of dementia and Alzheimer's](#), studies indicate.

Four years ago, researchers postulated that [loneliness might be a symptom of preclinical Alzheimer's](#), based on their brain-imaging study of 79 cognitively normal adults in the Harvard Aging Brain Study.

Social stress also can decrease the sensitivity and responsiveness of immune cells to the hormone cortisol. Normally, cortisol regulates production of pro-inflammatory chemicals called cytokines which, if uncontrolled, can become toxic, as they have in many Covid-19 cases, according to Dr. Cohen's research. In an article this month in the journal Perspectives on Psychological Science, Dr. Cohen warned that quarantining people alone without providing social support [may make them more, not less, susceptible to respiratory viruses](#), including possibly Covid-19.

Isolation might be setting them up in other ways. The link between isolation and cardiovascular disease is well established. Isolation and loneliness can affect blood pressure, [raise stress hormones like cortisol and elevate blood cholesterol](#).

People with weaker social ties are, on average, [30% more likely to die early](#) or [develop cardiovascular disease](#), according to two analyses of the research.

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