# Childhood abuse, adversity may shorten life, weaken immune response among the elderly

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The emotional pains we suffer in childhood can lead to weakened immune systems later in life, according to a new study.

Based on this new research, the amount of this immune impairment even enhances that caused by the stress of caregiving later in life.

"What happens in childhood really matters when it comes to your immune response in the latter part of your life," explained Janice Kiecolt-Glaser, professor of psychology and psychiatry at Ohio State University. She explained her work at the annual meeting of the American Psychological Association in San Diego.

The study showed that for some children who experienced serious abuse or adverse experiences as kids, the long-term effect might be a lifespan shortened by seven to 15 years.

Along with research partner Ronald Glaser, director of the Institute of Behavioral Medicine Research, she looked at 132 healthy older adults who averaged 70 years old. Forty-four percent of them served as primary caregivers for family members suffering from dementia, while 56 percent were non-caregivers.

The researchers took blood samples from each person measuring the levels of two cytokines known to be stress markers - interleukin-6 (IL-6) and tumor necrosis factor (TNF).

They also used a series of surveys to determine the participants' level of depression, health status, health behaviors and whether they had experienced childhood abuse or neglect. The surveys also looked for adverse events as kids such as the loss of a parent, serious marital problems between parents, or mental illness or alcoholism within their family.

Lastly, from the blood samples they were able to measure the lengths of telomeres, bits of DNA on the ends of chromosomes.

"Every time a cell divides, it loses a little bit of its DNA at the ends," explained Glaser, also a professor of molecular virology, immunology and medical genetics. "So the faster that process takes place, the more DNA is lost, and that's significant." Shortened telomeres have been associated with aging, age-related diseases and death among the elderly.

Nearly one-third of the people in the study said they'd experience some form of physical, emotional or sexual abuse during childhood. Participants who said they'd either been abused or suffered adverse experiences as kids showed higher levels of IL-6 than did those who didn't. Caregivers in that group also had higher IL-6 levels than did those who were not caregivers.

Caregivers who had been abused as children showed higher levels of TNF than non-abused caregivers or controls, whether they were abused or not. Individuals who faced adverse experiences as children showed no significant increase in TNF levels this late stage of life, the study showed.

As might be expected, participants who reported being abused showed greater levels of depression than those who weren't. But those who faced childhood adversity showed no significant increase in depression.

Lastly, the study showed that those participants who had experienced two or more kinds of childhood adversity had telomeres significantly shorter than those who had not.

Moreover, caregivers showed "significantly shorter telomere length than did non-caregiving controls," according to the report.

Earlier research by the research team has shown that caregivers already suffer ill effects from their activities. They have higher rates of depression and poorer health, their wounds heal more slowly, they respond poorly to influenza and pneumonia vaccines, they suffer more inflammation and have higher mortality rates compared to people who are not caregivers.

Kiecolt-Glaser said that the study's findings showed that "differences may be measurable in older adults, and of sufficient magnitude to be discernible even beyond the effects of a notably chronic stressor - dementia caregiving."

That these incidents weakened the immune response even more than the stress of caregiving is very significant, given that the inflammation caused by high levels of IL-6 and TNF have been linked to health problems such as cardiovascular disease, arthritis, type 2 diabetes, osteoporosis, cancers and Alzheimer's disease, they said.

"Childhood adversity casts a very long shadow," she said.

Provided by The Ohio State University