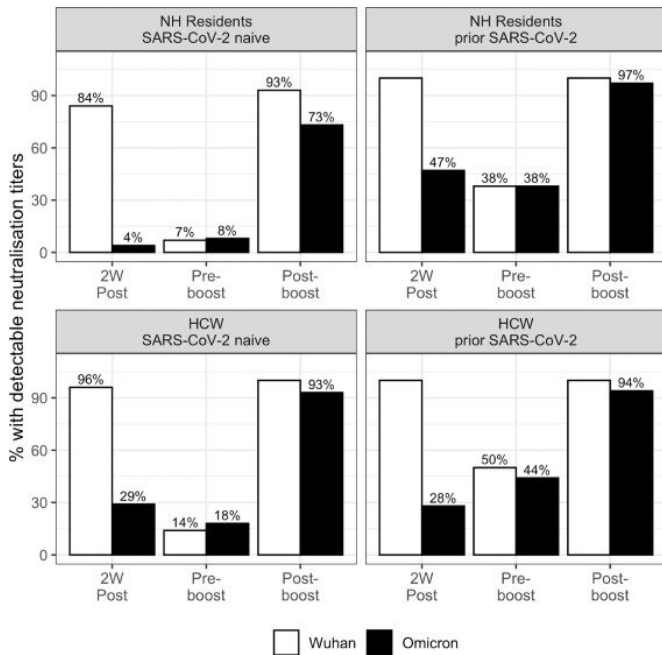


COVID-19 booster increases antibodies by more than 85% in nursing home residents and their caregivers

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Subjects with detectable omicron neutralization titres. Indicates the percentage of subjects in each clinical group with detectable neutralization titres above LLD for Wuhan (vaccine) vs omicron strains. Credit: *eBioMedicine* (2022). DOI: 10.1016/j.ebiom.2022.104066

The pandemic has hit nursing home residents especially hard, with a disproportionately large share of COVID-19 infection and mortality rates in the United States, according to the Centers for Disease Control and Prevention (CDC).

But new research from the Case Western Reserve University School of Medicine in partnership with Brown University shows that high levels of omicron-specific immunity can be achieved in nursing home residents and their caregivers with a third dose of the COVID-19 vaccine, also known as the booster

shot.

The findings were published this month in the journal *eBioMedicine*.

Researchers examined [blood samples](#) from 85 nursing home residents and 48 health care workers in Ohio who received the COVID-19 vaccine booster to determine the level of neutralizing antibodies present. Neutralizing antibodies are protective proteins produced by the [immune system](#) in response to vaccination and can be analyzed to determine the length of time it takes for immunity to diminish.

The study found that omicron-specific antibodies reached detectable levels in 86% of nursing home residents and 93% of health care workers after receiving the booster shot, compared to just 28% of nursing home residents and health care workers after the initial two-dose COVID-19 vaccine series. This high neutralization level occurred two weeks after the booster.

Despite nursing homes acting as an epicenter of infections and deaths throughout the pandemic, one in eight nursing home residents and one in nine staff members have not been fully vaccinated, according to the AARP.

David Canaday, lead study author and professor at the School of Medicine, said the results highlight the importance of booster vaccinations—not only for nursing home residents, but also for the [general population](#).

"There are tens of millions of community-dwelling [older adults](#) similar to the nursing home population but are living at home," he said. "This data shows this group of frail, older adults with similar clinical and functional limitations would benefit immensely

from a booster vaccination. The data also shows that health care workers achieved a significant elevation in antibody levels after receiving a booster. Many of these workers are healthy, middle-aged adults similar to the general population."

The research builds on a previous study that showed nursing home residents and [health care workers](#) lose more than 80% of their COVID-19 immunity six months after the initial vaccine series. Those results were presented to the CDC and published last fall.

The CDC recommends a first booster dose for people age five and older after completing their primary COVID-19 series. A second [booster shot](#) is recommended for people at least 50 years old and for those at least age 12 who are moderately or severely immunocompromised. Canaday's research team has ongoing studies examining the responses to the second booster including nursing home residents.

More information: David H. Canaday et al, COVID-19 vaccine booster dose needed to achieve Omicron-specific neutralisation in nursing home residents, *eBioMedicine* (2022). [DOI: 10.1016/j.ebiom.2022.104066](#)

Provided by Case Western Reserve University

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