

# Vaccine effectiveness up after three COVID-19 vaccine doses

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(HealthDay)—COVID-19 vaccine effectiveness (VE) is increased after

three doses but wanes with time since vaccination after receipt of two or three doses, according to research published in the Feb. 11 early-release issue of the U.S. Centers for Disease Control and Prevention *Morbidity and Mortality Weekly Report*.

Jill M. Ferdinands, Ph.D., from the CDC COVID-19 Emergency Response Team, and colleagues conducted a test-negative case-control study design to examine [vaccine effectiveness](#) against COVID-19 emergency department/urgent care (ED/UC) visits and hospitalizations among U.S. adults at various points after receipt of a second or third vaccine dose during periods of delta and omicron variant predominance. A total of 241,204 ED/UC encounters and 93,408 hospitalizations were examined across 10 states during Aug. 26, 2021, to Jan. 22, 2022.

The researchers found that after receipt of both two and three doses, VE was lower during the omicron-predominant versus the delta-predominant period at all time points. VE was higher after receipt of a third dose versus a second dose during both periods; however, with increasing time since vaccination, VE waned. VE against ED/UC visits was 87 percent during the first two months after the third dose during the omicron period and decreased to 66 percent among those vaccinated four to five months earlier; the corresponding VE against hospitalization was 91 and 78 percent, respectively. VE was generally higher for protection against hospitalization than ED/UC visits in both periods.

"The finding that protection conferred by mRNA vaccines waned in the months after [receipt](#) of a third [vaccine](#) dose reinforces the importance of further consideration of additional doses to sustain or improve protection against COVID-19-associated ED/UC encounters and COVID-19 hospitalizations," the authors write.

Several authors disclosed ties to the pharmaceutical industry.

**More information:** [Abstract/Full Text](#)

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