

# Pfizer COVID-19 third dose vaccine protection against hospitalization from omicron wanes after 3 months: study

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A study released April 22 in *The Lancet Respiratory Medicine* shows that a booster dose of the Pfizer COVID-19 vaccine provides strong

protection, roughly 80% to 90%, in the first few months against hospital admissions and emergency department visits caused by the delta and omicron variants. However, against omicron, this protection wanes over time—even after a third dose.

"Pfizer BioNTech COVID-19 booster doses significantly improve protection against omicron, although that protection seems to wane after 3 months against [emergency room visits](#), and even for hospitalization," said the study's lead author, Sara Y. Tartof, Ph.D., an epidemiologist with the Kaiser Permanente Southern California Department of Research & Evaluation and a faculty member of the Kaiser Permanente Bernard J. Tyson School of Medicine, both in Pasadena. "Trends in waning against delta-related outcomes were generally similar to omicron, but with higher effectiveness at each time point than those seen for omicron."

For this study, the researchers analyzed 11,123 [hospital admissions](#) and emergency department visits that did not result in hospital admission for acute respiratory infection. The study focused on Kaiser Permanente patient records in Southern California from December 1, 2021, through February 6, 2022, when both the delta and omicron variants were circulating.

- After 2 doses of the Pfizer COVID-19 vaccine effectiveness against omicron was 41% against hospital admission and 31% against emergency department visits at 9 months.
- After 3 doses, effectiveness against omicron-related hospitalization was 85% at less than 3 months but fell to 55% at 3 months or longer.
- Against [emergency department](#) visits that did not result in hospitalization, vaccine effectiveness of 3 doses against omicron was 77% at less than 3 months but fell to 53% at 3 months or longer.

"Although the Pfizer COVID-19 protection levels against omicron after 3 doses are substantially higher than those seen after 2 doses, they are less than those observed for delta or other COVID-19 strains," Tartof said. "Additional doses of current, adapted, or novel COVID-19 vaccines may be needed to maintain high levels of protection against subsequent waves of COVID-19 caused by [omicron](#) or future variants with similar potential to escape protection."

**More information:** Sara Y Tartof et al, Durability of BNT162b2 vaccine against hospital and emergency department admissions due to the omicron and delta variants in a large health system in the USA: a test-negative case–control study, *The Lancet Respiratory Medicine* (2022). [DOI: 10.1016/S2213-2600\(22\)00101-1](https://doi.org/10.1016/S2213-2600(22)00101-1)

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