

# COVID vaccination of children age 5-11 cut omicron hospitalizations by 68%

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Since the BioNTech COVID-19 vaccine became available in October for children age 5-11, many parents have been hesitant to have them vaccinated. As of March 16, only 27% had received two vaccine doses,

according to CDC data. A national study published March 30 by *The New England Journal of Medicine* now reports that vaccination of 5- to 11-year-olds reduced hospitalizations with COVID-19 by more than two thirds during the omicron surge and protected against severe illness.

The study, co-led by Adrienne Randolph, MD, MSc, at Boston Children's Hospital and the Centers for Disease Control and Prevention, also confirms that vaccination reduced COVID-19 hospitalization in adolescents age 12–18 and protected strongly against [severe illness](#), in line with [a study earlier this year](#).

"The reason for a child to get a COVID-19 vaccine is to prevent severe complications of SARS-CoV-2 infection, including hospitalization," says Randolph. "This evidence shows that vaccination reduces this risk substantially in 5- to 11-year-olds. And while vaccination provided adolescents with lower protection against hospitalization with omicron versus delta, it prevented critical illness from both variants."

The study tapped data from the national [Overcoming COVID-19 Network](#), which Randolph launched in 2020. It included 1,185 children with COVID-19 at 31 [pediatric hospitals](#) across the U.S.: 918 adolescents aged 12 to 18 and 267 children aged 5 to 11. The team also enrolled patients of similar age who were hospitalized for other reasons and served as controls.

The study spanned July 2021 through February 17, 2022, during the delta and omicron surges. In children 5 to 11, vaccine benefits could only be assessed during omicron, as the vaccine was not approved for them until October 2021.

## Study findings and conclusions

- Overall, 88% of patients hospitalized with COVID-19 were

unvaccinated, and 25% had critical illness requiring life-supporting interventions.

- Of children ages 5-11 hospitalized with COVID-19, 92% were unvaccinated. Sixteen percent were critically ill, needing life support measures such as intubation. Of these, 90% were unvaccinated.
- Of adolescents ages 12-18 hospitalized with COVID-19, 87% were unvaccinated. Twenty-seven percent had critical illness, and of these, 93% were unvaccinated. Two children died.

Based on their observations, the researchers calculate that:

- Among children age 5-11, two doses of the Pfizer–BioNTech vaccine were 68% effective in preventing hospitalization during omicron. Because this age group only recently became eligible for vaccine, numbers were not sufficient to evaluate critical illness separately.
- Among adolescents age 12-18, vaccination was 92% effective against hospitalization with the delta variant, falling to 40% with the omicron variant. In terms of preventing critical illness, vaccination was 96% effective in preventing critical illness during the delta period and 79% during the omicron wave.

## **Vaccination rates remain low in children and teens**

The Pfizer/BioNTech [vaccine](#) became available for children age 16-18 in December 2020, for children age 12-15 in May 2021, and for children age 5-11 in October 2021. Yet, as of March 16, 2022, just 57% of 12- to 17-year-olds and only 27% of 5- to 11-year-olds had received two [vaccine doses](#), according to [CDC data gathered by the American Academy of Pediatrics](#).

"We hope our findings will help parents make the decision to vaccinate

their children and teens against COVID-19," says Randolph. "The benefits clearly outweigh the risks, as severe infections in childhood can have long-term consequences."

Randolph and Manish Patel, MD, of the CDC were co-senior investigators on the study. Ashley Price, MPH, and Samantha Olson, MPH were co-first authors on the paper.

**More information:** Samantha M. Olson et al, Effectiveness of BNT162b2 Vaccine against Critical Covid-19 in Adolescents, *New England Journal of Medicine* (2022). [DOI: 10.1056/NEJMoa2117995](https://doi.org/10.1056/NEJMoa2117995)

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