

COVID-19 vaccine moderately effective against variants in children and adolescents, new report shows

March 14 2022



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Newly released data from an ongoing research study at the University of Arizona Health Sciences in combination with the Center for Disease

Control and Prevention's PROTECT study show that the Pfizer-BioNTech COVID-19 vaccine has been a moderately effective tool for preventing the spread of COVID-19 and reducing the severity of infection among children and adolescents.

A total of 1,364 children ages 5-15 were tested for SARS-CoV-2, the virus that causes COVID-19, weekly from July 25, 2021, to Feb. 12, 2022. Researchers found that vaccination with two doses of the Pfizer-BioNTech COVID-19 vaccine reduced the risk of infection with the [omicron variant](#) by 31% in children ages 5-11 and by 59% in adolescents ages 12-15.

The report showed declining protection in adolescents when comparing the omicron and delta periods, as vaccination was 87% effective at preventing infections among adolescents ages 12-15 years when the delta variant was the dominant strain circulating in the U.S. The Pfizer-BioNTech mRNA COVID-19 vaccine was recommended by CDC's Advisory Committee on Immunization Practices for adolescents ages 12-15 on May 12, 2021, and children ages 5-11 years on Nov. 2, 2021.

Researchers say the findings, published today in the CDC's *Morbidity and Mortality Weekly Report (MMWR)*, provide some evidence that all children and adolescents should remain up to date with recommended COVID-19 vaccinations.

The ongoing PROTECT study is among the largest studies with routine weekly COVID-19 testing, regardless of COVID-19-like symptoms. The study, initiated in July 2021, monitors SARS-CoV-2 infections among participants aged 6 months to 17 years in jurisdictions in four states: Arizona, Florida, Texas and Utah. PROTECT data includes UArizona Health Sciences research from the Arizona Healthcare, Emergency Response, and Other Essential Workers Surveillance (AZ HEROES) study.

"We are so appreciative that parents in our study are taking the time to test their kids weekly and provide us with this vital data," said AZ HEROES co-investigator Karen Lutrick, Ph.D., assistant professor in the UArizona College of Medicine—Tucson's Department of Family and Community Medicine and third author on the MMWR report. "Our findings inform science-based vaccine guidance. This shows the [community support](#) for research and the CDC's effort to provide the best public health recommendations possible."

Researchers also evaluated the severity of COVID-19 illness among unvaccinated children and adolescents who were infected during periods of delta and omicron circulation and found that omicron infections were less severe than delta infections. Among unvaccinated children who were infected, children with omicron infections were less likely to report COVID-19 symptoms (49%) than children with delta infections (66%).

Symptomatic omicron infection among children and adolescents—both vaccinated and unvaccinated—resulted in an average of 5-6 days of symptoms and 1-2 days in bed.

The data also allowed researchers to gain a better understanding the factors that can affect infection risk within this age group, including socio-demographic characteristics, health information, frequency of close social contact, mask use, location and local virus circulation.

Jeff Burgess, MD, MS, MPH, a professor in the Mel and Enid Zuckerman College of Public Health, leads the AZ HEROES study. He and his team of researchers, including faculty, staff and students, continue to gather vital data on COVID-19 immunity and vaccine effectiveness.

More information: Ashley L. Fowlkes et al, Effectiveness of 2-Dose BNT162b2 (Pfizer BioNTech) mRNA Vaccine in Preventing SARS-

CoV-2 Infection Among Children Aged 5–11 Years and Adolescents Aged 12–15 Years—PROTECT Cohort, July 2021–February 2022, *MMWR. Morbidity and Mortality Weekly Report* (2022). [DOI: 10.15585/mmwr.mm7111e1](https://doi.org/10.15585/mmwr.mm7111e1)

Provided by University of Arizona

Citation: COVID-19 vaccine moderately effective against variants in children and adolescents, new report shows (2022, March 14) retrieved 28 March 2023 from <https://medicalxpress.com/news/2022-03-covid-vaccine-moderately-effective-variants.html>

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