COVID-19 vaccine protects kids and teens from severe illness

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Results of a new multicenter study published in the *New England Journal of Medicine* found that vaccination with a primary series of the Pfizer-BioNTech mRNA COVID-19 vaccine reduced the risk of

COVID-19-associated hospitalizations in children ages 5-11 years by two-thirds during the Omicron period. Among adolescents ages 12-18 years who were vaccinated with a primary series of Pfizer-BioNTech vaccine, protection against COVID-19-associated hospitalization during the Omicron period was lower than during the Delta period, similar to what has been previously shown among adults. Levels of protection against critical COVID-19 requiring life-supporting interventions remained high in vaccinated adolescents during both the Delta and the Omicron periods.

"Our study results are reassuring that COVID-19 vaccination in eligible children and adolescents continues to protect against the most severe outcomes associated with COVID-19, regardless of variant type," said study co-author Bria Coates, MD, critical care physician at Ann & Robert H. Lurie Children's Hospital of Chicago and Assistant Professor of Pediatrics at Northwestern University Feinberg School of Medicine. "It is difficult to predict whether the vaccine will be as effective against the current subvariant of Omicron, but most likely the level of protection would be similar. Our results reinforce the importance of COVID-19 vaccination, including receiving a booster dose for those ages 12 years and older, to protect against critical illness."

During the Omicron period (December 19, 2021-February 17, 2022), vaccination reduced the risk of COVID-19-associated hospitalization by 68 percent in children ages 5-11 years. Vaccine effectiveness against any type of COVID-19-associated hospitalization in adolescents ages 12-18 years who received a primary series declined from 92 percent during the Delta (July 1, 2021-December 18, 2021) period to 40 percent during the Omicron period. Protection against COVID-19 requiring life-supporting interventions remained high for adolescents during Delta (96 percent) and Omicron (79 percent).

Due to the low numbers of hospitalized children ages 5-11 years in the

study, researchers could not analyze vaccine effectiveness by disease severity for this age group but will continue to monitor as these data are collected. Data in this age group was not available for the Delta period, since younger children were not eligible for the vaccine at that time.

Protection against hospitalization in adolescents during the Delta period remained consistent for more than 6 months after receipt of a primary series. Levels of protection during Omicron, although lower, also stayed consistent over time after completing the primary series.

"This consistency in vaccine effectiveness during each variant suggests that the decline in protection among adolescents between the Delta and Omicron periods might be because the Omicron variant is more likely to escape control by the immune system, rather than waning immunity since vaccination," said Dr. Coates, who also is the Crown Family Research Scholar in Developmental Biology. "However, more data are needed to answer this question."

More information: Ashley M. Price et al, BNT162b2 Protection against the Omicron Variant in Children and Adolescents, *New England Journal of Medicine* (2022). DOI: 10.1056/NEJMoa2202826

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