

Effectiveness of COVID vaccines against death remains high in children regardless of variant

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The effectiveness of COVID-19 vaccines in preventing death remains high in children and adolescents regardless of the predominant

circulating variant, suggests a large study from Argentina published by *The BMJ* today.

Although [vaccine effectiveness](#) for infection decreased sharply over time, especially during the omicron period, the researchers say that vaccinating children is an important public health measure that will continue to prevent deaths.

It is already well known that mRNA and inactivated COVID-19 vaccines are effective in preventing severe disease and infection in children and adolescents, but data on deaths are lacking.

Waning protection against infection has also been described, especially for mRNA vaccines, but evidence for inactivated vaccines in children is limited.

To fill this knowledge gap, researchers evaluated the effectiveness of two mRNA vaccines (Moderna and Pfizer-BioNTech) and the inactivated Sinopharm [vaccine](#) against COVID-19-related infection and death, and short-term waning of immunity, in children and adolescents.

Their findings are based on data for 844,460 children and adolescents (aged 3-17 years) from the National Surveillance System and the Nominalized Federal Vaccination Registry of Argentina.

Argentina started vaccinating adolescents (aged 12-17 years) in August 2021 and [young children](#) (aged 3-11 years) in October 2021.

Participants were grouped by [vaccination status](#) before being tested for COVID-19 (using a PCR or rapid antigen test) at a medical center from September 2021 to April 2022 when delta and omicron BA.1 variants were dominant in Argentina.

Fully vaccinated 12-17 year-olds had received two doses of either Pfizer-BioNTech and / or Moderna vaccines, and fully vaccinated 3-11 year-olds had received two doses of Sinopharm vaccine. Average time from second dose to test was 66 days for 12-17 year-olds and 54 days for 3-11 year-olds.

Those who tested positive (cases) were matched to those who tested negative (controls) by age, sex, area of residence, week of testing, type of test, and existing health conditions. After matching, 139,321 cases with their corresponding controls were included for analysis.

The results show that estimated vaccine effectiveness against COVID-19 infection was 61% in children and 67% in adolescents during the delta period, and 16% and 26%, respectively, during the omicron period.

Vaccine effectiveness declined over time, especially during the omicron period, from 38% at 15-30 days after vaccination to 2% after 60 days or more in children and from 56% to 12% in adolescents.

Vaccine effectiveness against death related to COVID-19 infection during the omicron period was 67% in children and 98% in adolescents.

This is an observational study, and as such, can't establish cause. The researchers also acknowledge that some information, such as symptoms and hospital admissions, was incomplete. They cannot rule out the possibility that other unmeasured (confounding) factors may have affected their results.

However, their results were consistent after further analyses to assess the impact of different tests and vaccine combinations, and are in line with those of other similar studies, suggesting that they are likely to be robust.

As such, the researchers say that vaccination is effective in preventing death in children and adolescents with COVID-19 regardless of the circulating variant.

Vaccines are also effective in preventing COVID-19 infection in children and adolescents in the short term, although a significant decrease was seen over time, especially during [omicron](#) predominance, they add.

"In summary, vaccinating children is an important public health measure that will prevent mortality in this population, especially in periods of high viral circulation," they conclude.

More information: Effectiveness of mRNA-1273, BNT162b2, and BBIBP-CorV vaccines against infection and mortality in children in Argentina, during predominance of delta and omicron covid-19 variants: test negative, case-control study, *The BMJ* (2022). [DOI: 10.1136/bmj-2022-073070](#)

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