

Review shows COVID-19 vaccines are effective against severe cases in children

August 21 2023



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COVID-19 vaccines are effective against severe cases of the disease in children and adolescents, according to a review. However, with most children now having caught the SARS-CoV-2 virus and building up a

natural immunity, the additional benefit of vaccination in healthy children is minimal.

The international literature review, led by Murdoch Children's Research Institute and published in *BMJ Paediatrics Open*, explored the challenges and considerations of COVID-19 vaccination, especially in low- and [middle-income countries](#) with high levels of community transmission and infection-derived immunity. The paper is titled, "Considerations for vaccinating children against COVID-19."

The review reported any roll-out of COVID-19 vaccines in low- and middle-income countries should also complement routine childhood [vaccine](#) programs that have a greater impact on illness and death, including for measles, pneumonia and diarrheal disease.

Building on [recent Murdoch Children's-led research](#) that found that two-thirds of children with COVID-19 who attended hospital in the first two years of the pandemic did not require [medical intervention](#), this review reported that despite most children having been infected and severe infection could occur, deaths were extremely rare in children. Globally, 16,100 COVID-19 deaths have been reported in those up to 19 years old.

As infection derived COVID-19 immunity has increased over time, the disease has also evolved. [Previous research led by Murdoch Children's](#) has found croup, triggered by COVID-19, declined in 2022 despite new variants arising.

Similarly, [data from the Pediatric Active Enhanced Disease Surveillance \(PAEDS\) network](#) and from the US, has found that rates of pediatric multisystem inflammatory syndrome (PIMS-TS)—a major concern during the early stages of the pandemic—were substantially lower during the omicron COVID-19 variant period.

The review highlighted that although COVID-19 vaccinations in children were effective at the time they were tested, the benefits were lower in the current context of high infection-derived immunity. The extra gain was also much lower compared to other life-saving vaccines in low- and middle-income countries, where childhood deaths from other vaccine preventable diseases were considerably higher.

The review noted many countries have still not introduced proven lifesaving vaccines, including pneumococcal, rotavirus and human papillomavirus, into their immunization schedules. Additionally, the resources required for COVID-19 vaccine roll-out in these countries posed a considerable challenge, it stated.

Murdoch Children's Dr. John Hart said although there was not strong evidence to support routine vaccination of all healthy children, it was a different for high-risk children, especially those with disabilities and certain underlying conditions.

"Given the very high prevalence of risk factors for severe COVID-19 in low- and middle-income countries, vaccination against COVID-19 is an important consideration in all age groups, including children," he said. However, decisions should be made considering the direct benefits to the individual child, not broader benefits to the household or community related to transmission, particularly as the effectiveness of the vaccines against infection is temporary.

"If COVID-19 vaccines are made available to children, the opportunity should be taken to increase coverage of standard childhood vaccines such as for measles, pneumonia, rotavirus, polio and human papillomavirus. Preventative health care and treatment should also be provided at each encounter with the health system. This will help to address the indirect adverse effects of the pandemic on children."

Murdoch Children's Professor Fiona Russell said there was also a lack of public health data in low- and middle- income countries, which underscored the importance of ensuring equitable access to safe and effective vaccines for future epidemics before exposure to infection.

"In low- and middle-income countries, most people were infected by the time vaccines became available, highlighting the profound inequity in global vaccine distribution," she said. More needs to be done to prevent this from happening again."

"By the time vaccines became available for low-risk populations of otherwise healthy children, infection-derived immunity provided similar protection to vaccine-derived immunity and vaccine hesitancy was also increasing.

"Countries that have high rates of unvaccinated children now need to consider whether to vaccinate based on their own context as it would be important to not detract from routine vaccinations that are far more beneficial for [children](#)."

Researchers from the University of Melbourne, Mahidol University, University of the Philippines Manila, Ministry of Health and Medical Services in Suva and The Royal Children's Hospital also contributed to the findings.

More information: John D Hart et al, Considerations for vaccinating children against COVID-19, *BMJ Paediatrics Open* (2023). [DOI: 10.1136/bmjpo-2023-001964](https://doi.org/10.1136/bmjpo-2023-001964)

Provided by Murdoch Children's Research Institute

Citation: Review shows COVID-19 vaccines are effective against severe cases in children (2023, August 21) retrieved 26 June 2024 from <https://medicalxpress.com/news/2023-08-covid-vaccines-effective-severe-cases.html>

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