

COVID-19 vaccination in young children

On Feb 16, 2022, the UK Joint Committee on Vaccination and Immunisation (JCVI) issued a statement recommending that all children aged 5–11 years should be offered the COVID-19 vaccine. “Although this age group is generally at very low risk of serious illness from the virus, a very small number of children who get infected do develop severe disease”, wrote the committee. “Latest evidence suggests that offering the vaccine ahead of another potential wave will protect this very small number of children from serious illness and hospitalisation—and will also provide some short-term protection against mild infection across the age group.”

The JCVI stressed that the offer should not be urgent. It noted that “the potential benefits from vaccination will apply mainly to a future wave of infection”. The committee has already advised giving the COVID-19 vaccine to children aged 5–11 years in clinical risk groups, or who share a household with someone who is immunosuppressed. England, Scotland, Wales, and Northern Ireland have confirmed that they will follow the latest recommendation, which will apply to around 5 million youngsters. The JCVI was unable to determine the likely effect of the vaccine rollout on school absences. Timing the jabs for Fridays or holidays would reduce the number of school days lost as a result of minor reactions to the vaccine. A lower burden of COVID-19 in children would also help keep youngsters in school, but much depends on testing and isolation policies.

Petra Zimmermann is a clinical researcher in paediatric infectious diseases at the University of Fribourg (Fribourg, Switzerland). “We now have enough data to say that the COVID-19 vaccine is safe in children”, she told *The Lancet Respiratory Medicine*. In the USA, almost 9.5 million children aged 5–11 years have received at least one dose of the COVID-19 vaccine. There have been

very few cases of vaccine-related myocarditis. Vaccination drives for 5–11-year-olds are well underway in several European nations. Sweden is a notable exception. “We do not see that we want to vaccinate a whole group of children for the sake of society”, said Britta Björklund, of Sweden’s Public Health Agency, in a press conference in late January, 2022.

According to modelling studies cited by the JCVI, fully vaccinating one million children in the UK aged 5–11 years would prevent 156 hospitalisations due to paediatric multisystem inflammatory syndrome or acute COVID-19 in the event of a severe future wave of infection, and 27 hospitalisations in the event of a less severe wave. But the committee also asserted that an estimated 85% of children in the targeted age range are likely to have been previously infected with SARS-CoV-2.

“Once you have recovered from natural infection, your chances of contracting severe disease is substantially reduced, which somewhat weakens the argument for vaccinating children, given their very high infection rates”, explained Paul Hunter, professor in medicine at the University of East Anglia (Norwich, Norfolk, UK). “The JCVI are saying that we would be vaccinating children against the next wave of disease, but a lot then depends on timing.” Hunter wonders whether it might be worth delaying the roll out until the autumn. “Even without new variants, there is likely be a stronger wave of disease in the winter”, he said.

Concerns that vaccinating low-risk populations in high-income countries would mean that high-risk populations in low-income countries would be left behind have dissipated as the supply of vaccines has picked up. But questions of equity still remain. “It is a real indictment of global society that so many people in low-and-middle-income countries

have not yet had their first dose of vaccine”, said Hunter.

Rachel Gur-Arie, a Hecht-Levi postdoctoral fellow with a focus in ethics and infectious diseases at the Johns Hopkins Berman Institute of Bioethics (Baltimore, MD, USA), noted that vaccine policies have historically targeted children so as to protect adults who are unable to get vaccinated themselves. But this is not the case with COVID-19. “The populations who are most vulnerable to COVID-19, such as the elderly and people who are immunocompromised, are usually safe to receive COVID-19 vaccines. Additionally, current COVID-19 vaccines do not completely prevent viral transmission”, said Gur-Arie. “Particularly in light of the prevalence of post-infection immunity among healthy children, it is not clear that the benefits of vaccinating healthy children against COVID-19, on a population-level, overwhelmingly outweigh potential risks.”

Nonetheless, the situation is not static. “The emergence of new variants of SARS-CoV-2 means that the risk–benefit ratio for vaccination does not stay the same for very long”, said Zimmermann. Moreover, the considerations differ by age. On Feb 11, 2022, the US Food and Drug Administration (FDA) said that it required more information before it could make a decision on whether to recommend vaccination for youngsters aged 6 months to 4 years.

The Pfizer-BioNTech vaccine against COVID-19 is the only product to have been approved for use in populations younger than 12 years by regulators in the EU, UK, and USA. The manufacturers had been studying a two-dose regimen in children aged between 6 months and 4 years, but the preliminary results were disappointing. The FDA will wait for data on a three-dose schedule in the same age bracket.

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Lancet Respir Med 2022

Published Online
March 3, 2022
[https://doi.org/10.1016/S2213-2600\(22\)00085-6](https://doi.org/10.1016/S2213-2600(22)00085-6)

For the JCVI statement see <https://www.gov.uk/government/publications/jcvi-update-on-advice-for-covid-19-vaccination-of-children-aged-5-to-11/jcvi-statement-on-vaccination-of-children-aged-5-to-11-years-old>