

IPCRG practice driven answers on COVID-19 and respiratory questions



What is known about immunity beyond 6 months following COVID-19 vaccination (2 doses) and first booster dose, and does the evidence suggest that any specific groups would benefit from an additional booster dose?

What the research says

Protection against symptomatic COVID-19 illness from current SARS-CoV-2 vaccines begins to wane 4–6 months following vaccination (PHE 2022). It is on this basis that booster vaccination programmes at or around 6 months after completing an initial course (2 doses) have been widely adopted. However, similar waning of effectiveness against symptomatic illness has been observed in the weeks and months following booster vaccination (Fabiani et al 2022; PHE 2022).

Less is known about the longer term protection against severe COVID-19 disease following completion of initial and first booster vaccinations, particularly following emergence of the Omicron variant. Waning from 90–95% effectiveness to ~75% effectiveness after 10–14 weeks has been reported in the UK (PHE 2022).

Emerging data from Israel suggests that, in the face of the Omicron variant, a second booster dose restores protection against severe COVID-19 illness in people aged ≥ 60 years and at-risk populations (Bar-On et al 2022). Several countries have now approved a second booster dose, initially for older people and certain immunocompromised individuals.

What this means for your clinical practice

- Continue to encourage patients at increased risk for more severe illness from SARS-CoV-2 infection to consider additional COVID-19 booster vaccinations according to National Guidelines. This might include older individuals (precise age cut offs vary between countries), people with cancer and those with other immune suppressive issues (eg those on immunosuppressive therapy including long-term corticosteroids, those with HIV/AIDS, those with haematological conditions such as sickle cell disease and those with a primary immunodeficiency disorder)
- See also our responses to the questions:
 - [How long will the COVID-19 vaccines provide protection from severe disease?](#)
 - [What are the benefits of doses of the SARS-CoV-2 vaccines beyond the initial vaccination course?](#)

Supporting references

Bar-On Y, et al. Protection by 4th dose of BNT162b2 against Omicron in Israel. Pre-print (not yet peer reviewed). Available at: <https://www.medrxiv.org/content/10.1101/2022.02.01.22270232v1>. Accessed March 2022.

Fabiani M, et al. Effectiveness of mRNA vaccines and waning of protection against SARS-CoV-2 infection and severe COVID-19 during predominant circulation of the Delta variant in Italy: retrospective cohort study. BMJ 2022;376:e069052. Available at: <https://www.bmj.com/content/376/bmj-2021-069052>. Accessed March 2022.

Public Health England. COVID-19 vaccine surveillance report. Week 10. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1060787/Vaccine_surveillance_report_-_week_10.pdf. Accessed March 2022.

Useful links

WHO. Science in 5. Episode #52 – COVID-19: Booster Shots. 11 September 2021. Available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/media-resources/science-in-5/episode-53---covid-19-booster-shots?qclid=CjwKCAjwlcaRBhBYEiwAK341jTPJ-r0dABNA6YMPtVYjvUHokSpazP1q0jqljajVGOUEQJ1qZBUMHxoC58EQAvD_BwE. Accessed March 2022.

Authors

Dr Fiona Mosgrove (GP and Clinical Lead Grampian Respiratory Improvement Programme, Aberdeen, Scotland, UK) for and on behalf of the IPCRG practice driven answers review group.

Last reviewed: 17 May 2022

Disclaimer: The content is drawn from the references listed above. Wording has been adapted for clarity and applicability for the primary care context. The content does not imply direction by the IPCRG nor does it form a position of the IPCRG on this subject. The content may be adapted as new evidence arises. This content is advisory; it is intended for general use and should not be regarded as applicable to a specific case. The IPCRG is a registered charity [SC No 035056] and a company limited by guarantee (Company No 256268). Communication address: 19 Armour Mews, Larbert, FK5 4FF, Scotland, United Kingdom