



## Spot Report : COVID-19 Vaccine Booster Shot

COVID-19 booster shots are not a new idea. Since the vaccines were first introduced last December, scientists have acknowledged that boosters may someday be needed.

### What is a booster?

“The simplest answer is that it’s just another dose of a vaccine you received,” Dr. Shaw explains. “The concept is to prolong protective immunity, particularly if there is evidence that protection is waning after a period of time.”

Most children receive routine vaccinations, including boosters, for illnesses such as chickenpox, tetanus, diphtheria, mumps, measles, and rubella—to name a few. “These vaccine series, as we call them, are recommended because you need the extra doses to get longer lasting protective immunity,” Dr. Shaw says.

Enter booster vaccination programmes, which are rapidly springing up across the globe.

In Israel, third doses are already old news – they were approved for over-60s in late July, and the government has been gradually making them available to more and more people. The extra shot is currently available to everyone over the age of 12, as long as it’s been at least five months since they were vaccinated with the second dose.

The list of countries following suit is growing daily. The UK recently announced a booster programme for all over-50s and those with severely weakened immune systems, which is due to start next week as did Singapore (but for the immunocompromised and over-60s).

In the US, hundreds of thousands of extra doses have been given to clinically vulnerable people since 13 August, and the Biden administration has plans to provide them for all American adults once eight weeks have elapsed since their second dose. Other nations with booster programmes include Italy, China, and Russia.

However, what is obvious is that the vaccines are still highly effective at shielding people from death, regardless of when you were inoculated – and it helps that the risk of vaccinated people being killed by Covid-19 was extremely small to start with. In the UK, there were just 256 fatalities linked to the virus among fully immunised people between January and July 2021, out of more than 51,000. These “breakthrough deaths” overwhelmingly occurred in the most vulnerable groups, such as elderly people with weakened immune systems.

In the future, Covid-19 booster doses might be updated each year to match the main viral variants in circulation, just like flu vaccines.



## When can we get a COVID-19 vaccine booster?

If you are eligible, you'll be invited to get a booster vaccine when it is your turn, and at least six months after your second dose.

## Who can get a COVID-19 booster vaccine

Booster vaccine doses will be available on the NHS for people most at risk from COVID-19 who have already had 2 doses of a vaccine.

This includes:

- people aged 50 and over
- people who live and work in care homes
- frontline health and social care workers
- people aged 16 and over with a health condition that puts them at high risk of getting seriously ill from COVID-19
- carers aged 16 and over
- people aged 16 and over who live with someone who is more likely to get infections (such as someone who has HIV, has had a transplant or is having certain treatments for cancer, lupus or rheumatoid arthritis)

People who are pregnant and in 1 of the eligible groups can also get a booster dose.

## If we need a booster dose, does that mean that the vaccines aren't working?

No. COVID-19 vaccines are working very well to prevent severe illness, hospitalization, and death, even against the widely circulating Delta variant. However, with the Delta variant, public health experts are starting to see reduced protection against mild and moderate disease. For that reason, the U.S. Department of Health and Human Services (HHS) is planning for a booster shot so vaccinated people maintain protection over the coming months.

## Could you mix and match vaccines in a booster?

So-called "mixing and matching" of vaccines (a first dose of Pfizer, followed by a second dose of Moderna, for example, to complete the mRNA two-dose series) has been used in Europe and other places, particularly when there were supply issues. And there have been recent studies suggesting this approach with one dose of AstraZeneca's vaccine (which is not available in the U.S.) and one dose of Pfizer's vaccine may even offer more vigorous protection. But here in the U.S., the current public health recommendations are that people should stick with one type of mRNA vaccine for both doses.

But what about for boosters if they are recommended, should you stick with your original kind?

"That is being evaluated right now. The NIH [National Institutes of Health] is sponsoring a study that is ongoing and hopefully, we will have answers to that," Dr. Shaw says.



## **Could a booster cause more or worse side effects?**

If you were among the unlucky recipients who felt really ill or had any of the rare but largely harmless reactions to your initial COVID-19 vaccination, you may be leery of the idea of a third dose, in case it causes a similar or worse reaction.

“Hopefully, we will have information from the ongoing studies on whether there is any change in rates of adverse effects with boosters,” Dr. Shaw says. “It’s reassuring that for the vast majority of individuals, the currently used vaccines have been safe, and if I had to guess, I would say rates of any problems would remain very low.”

## **ACMM Recommendation**

The booster vaccines are being recommended in order to give longer-lasting protection. We still don’t know how long protection from the Covid-19 vaccines lasts, but there is some evidence, particularly in the case of the some vaccine, that it declines over time and has started to decline within six months from the second dose. Because the vaccine has not yet been available for long enough, there are no large studies of effectiveness beyond six months from the second dose.

So a booster dose will help to ensure those at higher risk from coronavirus, who were prioritised at the start of the vaccine programme, have enough protection going into winter.

We know that as coronavirus spreads and mutates, it can start to resist vaccines. A booster programme could offer extra protection against variants that have resistance to existing vaccines.

Many coronavirus vaccine manufacturers are in the process of developing and testing new booster vaccines targeted at different coronavirus variants.

## **Reference**

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/booster-shot.html>

<https://www.nejm.org/doi/full/10.1056/NEJMoa2114255>

<https://www.nhs.uk/conditions/coronavirus-covid-19/coronavirus-vaccination/coronavirus-booster-vaccine/>

<https://www.yalemedicine.org/news/covid-19-booster>

<https://www.bhf.org.uk/information-support/heart-matters-magazine/news/coronavirus-and-your-health/covid-booster-vaccine>