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Will we need a COVID-19 booster vaccine every year?

COVID-19 booster vaccines are essential, giving you longer-term protection against getting seriously ill from the disease. And with cases of infection and hospital admissions on the rise in the UK, those who are eligible for the vaccine are being urged to have their top-up jab. But will we always need periodic boosting against COVID-19, like we do against the flu?

Why we need COVID-19 booster vaccines

William Schaffner, a professor of preventative medicine at Vanderbilt University, explains that booster vaccines stimulate the [immune system](#) to raise antibody levels. "Higher antibody levels generally are associated with a longer length of protection against serious disease as well as some enhanced protection against variants," he says.

Researchers are always trying to develop new and improved vaccines in the fight against COVID-19, with new competitors joining the mix. As well as the Pfizer and Moderna vaccines, a jab by Sanofi was approved for use in the UK in 2022¹. In the US, a vaccine by the company Novovax was authorised by the Government's Food and Drug Association².

However, only time will tell if we need a jab every year to protect against [COVID-19](#).

Rodney E. Rohde, a professor of clinical laboratory science and an infectious disease specialist at Texas State University. "At present, with the evolving timeline with SARS-CoV-2, we don't know for sure if we will need annual [vaccination](#) for [COVID-19](#) infections as we do for flu ([influenza](#)). There are so many unknown variables at the moment."

COVID-19 mutations

There are several reasons why we may need to get a [COVID-19 booster vaccine](#) every year.

"The [SARS-CoV-2](#) virus is probably a zoonotic virus – that can be transmitted from animals to humans – and we have evidence of it in a variety of animals," explains Rohde.

"That means it will have an ongoing reservoir to maintain itself alongside ongoing mutation. The CoV family has ribonucleic acid RNA as its genetic material – and many RNA viruses have the unfortunate ability to mutate quickly."

Several vaccines, being commonly used, need boosters. "For example, to maintain protection against [tetanus](#), a booster vaccination is recommended every ten years," says Rohde. "[Influenza](#) vaccination is required annually because the virus changes frequently."

With COVID-19, Schaffner explains, two things need to be known. "First, the length of protection given by our current boosters. And secondly, whether the [COVID-19 virus](#) will mutate enough to stop protection from the available vaccines."

Researchers do not yet know whether the strains of the virus will be able to outsmart our current vaccines, so that even vaccinated people become seriously ill with COVID-19. "Testing is ongoing, but there are early signs that the Omicron variant and subsequent strains may be able to lessen the protection of our current [vaccines](#)," Schaffner says.

Ultimately, we will know more as experts monitor people who have been vaccinated and received boosters.

Will the current vaccines work against new strains of COVID-19?

So far, we know that the [COVID-19](#) virus is able to mutate pretty quickly. For example, the latest strain in the UK – [Pirola](#) – is a heavily mutated version of the virus and early evidence suggests it has a higher reinfection risk. However, scientists say the vaccines we currently have are capable of protecting us from the serious illness caused by Pirola. Although you might become infected, if you're vaccinated, you're far less likely to end up in hospital with serious complications caused by the virus.

Another key issue is that we need to make sure people have their boosters when offered them - and to ensure that everyone around the world is able to get a jab.

"We must follow the science in real time to answer these questions in the best way" says Rohde. "We also need not only higher acceptance of vaccines and boosters, but also vaccine equity for global protection. Without vaccine equity, we will have major pockets of unprotected populations which allows ongoing virus mutations."

Who can get a COVID-19 booster vaccine?

Those most at risk can have a COVID-19 booster vaccination for free on the NHS. All adults aged 65 years and over are being offered the vaccine automatically.

As of September 2023 you can only get the COVID-19 vaccine from the NHS if you meet certain criteria.

The following groups can have a booster vaccination this autumn:

Residents in care homes for older adults.

Adults aged 65 years and over.

People aged 6 months to 64 years in a clinical risk group.

Frontline health and social care workers.

People aged 12 to 64 who are household contacts of people with weakened immune systems.

People aged 16 to 64 who are carers and staff working in care homes for older adults.

Pregnant women.

Further reading

1. [GOV UK: Sanofi Pasteur COVID-19 vaccine authorised by MHRA.](#)
2. [US Food and Drug Administration: FDA authorises updated Novavax COVID-19 vaccine formulated to better protect against currently circulating variants.](#)

COVID-19

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