

# ALL ABOUT YOUR COVID-19 VACCINATION

## Vaccines are not new

A vaccine is a biological preparation that provides active acquired immunity to a particular infectious disease.

The vaccine typically contains an agent, which resembles a disease-causing microorganism and is often made from weakened or killed forms of the microbe, its toxins or one of its surface proteins.

The story of vaccines did not begin with the first vaccine; instead, it began with the long history of infectious disease in humans and, in particular, with early uses of smallpox material to provide immunity to that disease.



Evidence exists that the Chinese employed smallpox inoculation as early as 1,000 CE. It was practiced in Africa and Turkey as well, before it spread to Europe and the Americas.

In 1796, Edward Jenner developed and documented the first vaccine for smallpox. This was followed by the first vaccine for cholera by Louis Pasteur in 1880.

Since then, we have seen many vaccines created and used for diseases ranging from rabies to the bubonic plague.

Nowadays, people routinely have vaccinations pre-travel, to protect their unborn/growing children or themselves against such things as HPV or hepatitis and/or for flu. They normally have no side effects other than perhaps feeling a little off colour for a couple of days.

## Is the COVID-19 vaccine safe?

952 million or 13% of the global population have been fully vaccinated, mostly without ill-effect. Vaccine facts:

- MHRA-controlled\* and approved
- Each vaccine goes through three phases of clinical trials
- Information shared more freely between organisations and countries and Oxford AstraZeneca not-for-profit development
- Used technology and science that is tried and tested for vaccine development (rabies, zika, CMV)
- £30 million announced recently to develop a capability to adopt vaccines quickly to keep track of variants.

Therefore, there is no need to be fearful about the COVID-19 vaccine.

## What are the main types of vaccine available at present?

- **mRNA vaccine (Moderna/Pfizer): messenger RNA vaccines:** the vaccine targets the spike protein on the virus. The m(RNA) is the messenger (genetic material) that tells your body how to make proteins.
- There is a coating that protects the material and stops your body destroying it. The messenger RNA in the vaccine teaches your body how to make copies of the spike protein
- If you are exposed to the virus later, your body will recognise the threat and make antibodies to it. After the 'instructions' are delivered – cells in your body break it down and destroy it.

\*Medicines and Healthcare products Regulatory Agency

- **Oxford AstraZeneca (Adenovirus/viral vector vaccine):** viral vector vaccines use a modified version of a different virus (the vector) to deliver important instructions to our cells.
- Our cells will then produce a harmless piece of the virus that causes COVID-19. This piece is known as a spike protein. Our immune system recognises this does not belong there and triggers our immune system to fight off what it thinks is an infection.
- Like the messenger RNA vaccines, these target the spike protein. This time, you are injected with a harmless version of a different virus (vector) to deliver information to the body that will help it to protect you.
- The vaccine teaches your body to make copies of the spike proteins. If you are then exposed to the virus, your immune system will quickly recognise it and make antibodies to protect you.

### Will I have any side effects?

People sometimes off colour following their first vaccination but this normally passes after 48 hours. Most do not have any symptoms following their second dose.

Not everyone gets side effects, but if they do, they often include:

- A sore arm from the injection
- Feeling tired
- A headache
- Feeling achy
- Feeling or being sick.

More serious side effects, such as allergic reactions or blood clotting, are extremely rare. To find out about side effects and when you should call NHS 111, see: <https://www.nhsinform.scot/covid-19-vaccine/the-vaccines/side-effects-of-the-coronavirus-vaccines>

### Will the vaccine make me infertile?

There is no “plausible biological mechanism” by which the vaccine could affect your fertility.

There is currently no evidence that COVID-19 vaccination causes any problems with pregnancy, including the development of the placenta.

In addition, there is no evidence that female or male fertility problems are a side effect of any vaccine, including COVID-19 vaccines.

However, do chat through your decision with a health professional (as some may prefer to wait until the baby arrives where low risk to mum and pregnancy).

### Does the vaccine contain parts of human and animal remains? Can vaccines be given to vegans/vegetarians/people of Catholic/Muslim/Jewish faiths?

The COVID-19 vaccines do not contain any animal or egg products or foetal cells or products. They are therefore suitable for people whose faith or dietary requirements mean they cannot have certain types of meat or who follow a vegetarian diet.

### Will the COVID-19 vaccination affect my DNA?

COVID-19 vaccines do not change or interact with your DNA in any way. Both mRNA and viral vector COVID-19 vaccines deliver instructions (genetic material) to our cells to start building protection against the virus that causes COVID-19.

However, the material never enters the nucleus of the cell, which is where our DNA is kept.

## Will I get blood clots?

The risk of getting blood clots is low:

- AstraZeneca vaccine 0.0004%
- Birth control pill 0.05-0.12%
- Smoking 0.18%
- COVID-19 16.5%.

Therefore you are far more likely to suffer blood clots if you get COVID-19 than if you have the vaccine. People under 40 may be offered an alternative to the AstraZeneca vaccine.

## Can the vaccine give me COVID-19?

No, You cannot catch COVID-19 from the vaccine but it is possible to have caught COVID-19 and not realise you have the symptoms until after your vaccination appointment.

The COVID-19 vaccine that you have has been shown to reduce the chance of you suffering from COVID-19 disease.

Each vaccine has been tested on thousands of people and many have also been used in many different countries.

It may take a few weeks for your body to build up some protection from the vaccine. Like all medicines, no vaccine is completely effective, so you should continue to take recommended precautions to avoid infection.

Some people may still get COVID-19 despite having a vaccination, but this should be less severe.



## I'm at low risk – why should I bother getting vaccinated?

Getting the vaccination is important for several reasons:

- It can help you stop getting a serious version of COVID-19
- Even if you get a mild version of the virus, you are at risk of developing Long COVID, a condition appearing in many people following COVID-19, which can include some serious physical and psychological symptoms
- This, in turn, reduces the burden on the NHS so they can treat people with other conditions
- If you socially distance and follow mask and hygiene protocols, you are less likely to pass it on, especially to those who may be at risk
- To protect your family/particularly vulnerable/elderly relatives
- To protect your colleagues and create a healthier workplace
- To help society move towards a safer place
- To enjoy the freedoms that vaccine is now beginning to offer (travel/ admittance to events, etc).

## Couldn't we just lock our borders?

Unfortunately, COVID-19 is in our community already and is mutating to at least 15 versions, e.g. the Delta variant we hear about. Life has to go on but government is doing everything it can to ensure those entering the country are tested and isolated if positive.

## The good news:

- Variants are completely normal and are how a virus behaves to survive and transmit
- Vaccine development allows for modification to the ingredients over time to factor in mutations

- Surge testing is set up rapidly in areas where new variants are detected to identify close contacts and prevent widespread transmission
- Current vaccines will provide some protection against new variants and will slow transmission down in communities.

### **Was the vaccine developed too quickly to be safe?**

There are strict protections in place to help ensure the safety of all COVID-19 vaccines. Before receiving validation from WHO and national regulatory agencies, COVID-19 vaccines must undergo rigorous testing in clinical trials to prove that they meet internationally agreed benchmarks for safety and effectiveness.

Unprecedented scientific collaborations have allowed COVID-19 vaccine research, development - and authorisations to be completed in record time - to meet the urgent need for COVID-19 vaccines, while maintaining high safety standards. As with all vaccines, WHO and regulatory authorities will continuously monitor the use of COVID-19 vaccines to confirm that they remain safe for all who receive them.

### **If I've already had COVID-19, do I need a vaccination?**

People who have been ill with COVID-19 may still benefit from getting vaccinated. Due to the severe health risks associated with COVID-19 and the fact that re-infection with COVID-19 is possible, people may be advised to get a COVID-19 vaccine even if they have been sick with COVID-19 before.

Early evidence suggests natural immunity from COVID-19 may not last very long; more studies are needed to better understand this.

Several subjects in the Pfizer trial who were previously infected got vaccinated without ill effects. Some scientists believe the vaccine offers better protection for coronavirus than natural infection.

### **Once I've had the vaccination, can I go back to life before COVID-19 appeared?**

Vaccination can protect you from getting seriously ill and dying from COVID-19.

For the first fourteen days after getting a vaccination, you do not have significant levels of protection.

For a single dose vaccine, immunity will generally occur two weeks after vaccination. For two-dose vaccines, both doses are needed to provide the highest level of best immunity possible.

While a COVID-19 vaccine will protect you from serious illness and death, the extent to which it keeps you from being infected and passing the virus on to others is unknown, although preliminary data suggests there are protective effects.

To help keep others safe, continue to:

- Maintain at least a one to two-metre distance from others
- Cover a cough or sneeze in your elbow
- Clean your hands frequently
- Wear a mask, particularly in enclosed, crowded or poorly ventilated spaces.

Always follow guidance from local authorities based on the situation and risk where you live.