Coronavirus (COVID-19): vaccines

Several vaccines are now available to protect people against COVID-19, and more are being developed. Vaccination programmes are under way in many countries.

This leaflet explains what the vaccines do, how they are given, who can have them, and how safe they are.

We are learning more about these vaccines all the time. So some of the advice about them might change as we find out more.

What is a COVID-19 vaccine?

The COVID-19 virus spread around the world in 2020 and is still infecting people. Many millions of people have become ill and millions have died.

Scientists in several countries have now developed vaccines to help protect against the virus. For example, in the UK, there are now five vaccines approved for use.

The approved vaccines are:

- the Pfizer/BioNTech vaccine (usually just called the Pfizer vaccine)
- the Moderna vaccine
- the AstraZeneca vaccine
- the Janssen vaccine, and
- the Novavax vaccine.

These vaccines all offer protection against the virus that causes COVID-19. But this doesn’t mean that they will always work for everyone - there are no perfect vaccines. But the COVID-19 vaccines will work for most people.

This means that people who become infected after having the vaccine are much less likely to become ill than if they don’t have the vaccine.

The various vaccines do the same job, but they are all slightly different in the way they work and in the protection they provide.
The type of vaccine that your healthcare professional offers you might depend on what is available locally and what is most suitable for you.

How is the vaccine given?

You might be invited, for example by letter or text message, to have the vaccine at your doctor’s surgery or at a clinic or vaccination centre.

You get the vaccine as an injection into the muscle of the upper arm. With most of the vaccines, you will need two doses, several weeks apart. Your healthcare professional will let you know when the second one is due.

The Janssen vaccine is given as one single dose. This means that you don't need a second dose of this vaccine.

If you have the Pfizer vaccine, you might need to wait for 15 to 30 minutes before you can go home. This is so the doctor can keep an eye on you, in case you have any side effects that suggest that you might be allergic to the ingredients of the vaccine.

If you have have a severe allergic reaction after the vaccine, you might need treatment. This will usually be an injection of adrenaline.

You might be familiar with this type of treatment if you know someone who has allergies and who has to carry an injector, sometimes called an "EpiPen", which they can use to treat themselves if they have an allergic reaction.

Who can have the vaccine?

Most adults can have the vaccine, although the rules vary a little between the vaccines. And many countries have now approved some vaccines for children. For example, in the UK:

- people aged 12 years and over can have the Pfizer vaccine
- people aged 18 years and over can have the Moderna, AstraZeneca, Novavax, or Janssen vaccines.

It is likely that the situation will change as we learn more. For example, some vaccines might be made available to younger children in some countries.

Pregnant and breastfeeding women

The advice about pregnant women currently varies between countries. For example, the World Health Organization (WHO) recommends the vaccine in pregnant women if the benefits are thought to outweigh the risks.

But in some countries including the UK, pregnant women are strongly encouraged to have the vaccine.

If you are concerned about whether you should have the vaccine, talk to your doctor.

Advice about breastfeeding varies between countries. This doesn't mean that it’s unsafe to have the vaccine if you’re breastfeeding. It just means that some countries are taking a more cautious approach until there is more information available.
If you’re breastfeeding, tell your doctor, or the healthcare professional vaccinating you, before you have the vaccine. They should be able to give you some relevant information. If you’re not happy to have the vaccine, your decision should be respected.

**Teenagers and children**

At first, the vaccines were not recommended for children. This was because:

- children are far less likely than adults to have severe illness, and
- health authorities wanted to be sure that the vaccine was safe enough to give to children.

Now that we know more, many countries are now vaccinating children in various age groups.

For example, The UK and the European Union have approved the Pfizer vaccine for use in children aged 12 to 15 years. In the US, the Pfizer vaccine is now approved for children as young as 5 years old.

**When will I get the vaccine?**

Most people in many countries will now have had their first doses of the vaccine.

The vaccine is offered to people based on who needs it most urgently. This means that the first people to get it will usually be:

- people who have the greatest chance of getting COVID-19, and
- those most likely to become seriously ill if they are infected.

For example, some of the first groups of people to be offered the vaccine are likely to be:

- those who live or work in nursing homes or care homes for older people
- frontline healthcare workers, and
- people aged over 65.

After these people have been vaccinated, others will gradually be offered the vaccine based on who is most in need of it. For example, people with serious health conditions will usually be offered it ahead of people who are in good health.

Vaccination programmes are at different stages in different countries. In the UK, for example, all adults and some older children should now have had a chance to be vaccinated.

**Booster vaccinations**

Many countries are now offering booster vaccinations to certain groups of people. This is because the vaccine becomes less effective over time.

A booster does what the name suggests: it tops up or 'boosts' your protection against the virus, so that, if infected, you are much less likely to become severely ill.

For example, in the UK, booster injections were first offered to vulnerable and older people, and to healthcare workers. But boosters are now offered to everyone over 18 years old.
The boosters in the UK will be single doses of either the Pfizer or Moderna vaccine. You will probably not be offered a booster until at least three months after your last dose of your initial vaccine.

If you live in the UK, the NHS might contact you when your booster is due. Or you might be able to book one online without being invited. Depending on where you live, you might also be able to go to a walk-in centre for a booster.

Is there anyone who shouldn’t have the vaccine?

The vaccine is not currently recommended for some groups of people. This doesn’t mean for certain that it’s not safe for them. It just means that we don’t know enough about the new vaccines yet to be absolutely sure.

People with certain allergies

A small number of people have had allergic reactions after having the Pfizer version of the vaccine.

You should:

• not have the vaccine if you are allergic to any of its ingredients
• tell the health professionals giving you the vaccine about any allergies you have, before you have the injection. He or she will check if these are a problem.

Food allergies should not be a problem. If you have a food allergy you should be able to have the vaccine.

If you have an allergic reaction to the first dose of the vaccine, you should not have the second dose.

People with weakened immune systems

Some medical conditions and some medications can cause the body’s immune system to become weaker. This means that infections can be more serious.

The COVID-19 vaccines don’t contain any live organisms, so they are thought to be safe for people with weakened immune systems (doctors call this being immunocompromised).

But you should mention to the health professional giving you the vaccine if you have a weakened immune system for any reason, before you have the injection.

How safe is the vaccine?

The COVID-19 vaccinations are considered safe. But, like any vaccine and any medication, they can cause side effects in some people. These side effects are usually mild. The most common ones are:

• pain, redness, swelling, or bruising in your arm where you have the injection. This can last for a few days
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- tiredness
- headache
- fever
- nausea, and
- pain in a joint or muscles.

These side effects can make you feel pretty miserable, a bit like a mild flu. But they shouldn't last more than a few days.

There are some simple things you can do to help with some of the side effects.

- If you have pain in your arm near where you had the injection, keep using and moving the arm so that it doesn't stiffen up. You could also try an over-the-counter painkiller, such as paracetamol or ibuprofen.
- If you have fever, drink plenty of fluids, rest if you need to, and dress lightly to keep cool.

If you have severe side effects, or if you have any problems that don't go away soon after you are vaccinated, tell your doctor or another healthcare professional right away.

**Blood clots**

You might have heard that the **AstraZeneca** and **Janssen** vaccines have been linked to blood clots in a small number of people. The information changes constantly as we find out more. But studies so far suggest that:

- about 12 people in every one million who have the AstraZeneca vaccine have developed this type of blood clot
- about one person in every one million who have had the AstraZeneca vaccine have died from this type of blood clot
- blood clots seem to be less common with the Janssen vaccine, and they tend to happen in women aged between 18 and 59.

Blood clots happen for many different reasons. So, while it is possible that the vaccine caused the blood clots, we don't know for sure, and more research is being done to try to find out.

In the meantime, the advice might vary depending on where you live. For example, in the UK, people are still advised to have the vaccine, as the risk of blood clots is extremely small compared with the benefits of protecting the population from the virus.

The blood clots seem to be more common in younger people. So it's possible that younger people might be offered vaccines other than the AstraZeneca vaccine. This might depend on where you live.

For example, in the UK, there are plans to offer people aged **39 and younger** a vaccine other than the AstraZeneca vaccine, provided that:

- another vaccine is available, and
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• this does not cause a major delay in people being vaccinated.

The AstraZeneca vaccine is also not recommended for people with a blood disorder called capillary leak syndrome.

After you have the vaccine

Having the vaccine might not stop you from becoming infected with the virus. But it can reduce your chance of becoming seriously ill with COVID-19.

But the vaccines take time to work. So you might not be protected for up to two weeks after your first dose of the vaccine. With vaccines that are given as two doses, the best protection comes after you have had both doses.

Also, vaccinated people who are infected can still pass the the virus onto others. So it’s important to keep doing the things that help keep you and others safe. That means:

• wearing a face covering
• washing your hands carefully and often, and
• practising social distancing.

For more information on COVID-19, including prevention and treatment, see our leaflet COVID-19 (coronavirus).