



Covid-19 vaccines

Frequently asked questions answered by Deputy Chief Medical
Officer Professor Jonathan Van-Tam

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Professor Jonathan Van-Tam ('JVT') was appointed Deputy Chief Medical Officer in October 2017. He leads on health protection.

What vaccines are available?

Effective vaccines are the best way to protect people from coronavirus and will save thousands of lives. Over time, they will help us get back to normal.

Following extensive clinical trials and authorisation for use by the independent medicines regulator, the MHRA, safe and effective COVID-19 vaccines are available in the UK for free to eligible people, following the order of priority advised by the Joint Committee on Vaccination and Immunisation (JCVI).

The AstraZeneca (Oxford) vaccine and the BioNTech/Pfizer vaccine are now available across the UK. Other vaccines are expected to follow throughout 2021.

JVT adds: "Covid vaccines are made at different speeds by different manufacturers. It is not possible for vaccination centres to choose the stock they are allocated and not possible for individuals to choose a vaccine. The vaccines we are using are all approved by the MHRA and they are all good choices. The JCVI does not recommend any specific vaccines for specific patient groups. The results from clinical trials are all different and each company measured slightly different outcomes. But what we are now finding in real life practice is that both of the current vaccines are very effective in preventing admission to hospital with Covid. Right now, I couldn't honestly say that one is doing a better job than the other."

How many people have been vaccinated?

Vaccination numbers are published daily: <https://coronavirus.data.gov.uk/details/healthcare>

Who can get the Covid-19 vaccination?

The NHS is currently offering the COVID-19 vaccine to people most at risk from coronavirus, in line with the advice of the Joint Committee on Vaccination and Immunisation (JCVI).

Currently it's been offered to:

- residents in a care home for older adults and their carers
- frontline health and social care workers

- people aged 16-64 who are clinically extremely vulnerable or at high-risk of COVID-19 due to underlying health conditions
- all those 55 years of age and over

The above groups are known as JCVI priority groups 1 to 8. The vaccine will soon be offered to JCVI groups 9 - all those aged 50 -54.

JVT adds: " Our vaccination programme is moving at such speed that if you are in priority phase 1 (groups 1-9), even if you have not yet been called it will only be a short number of weeks before you are."

How will I know it's my turn to get a vaccine?

The NHS will let you know when it's your turn to have the vaccine; that could be phone, text or letter. Do not contact the NHS for a vaccination before then unless asked to do so. Once you have received your letter you can book your vaccination appointment online, or if you cannot access the online booking service, you can call 119.

Sometimes the NHS will contact you at short notice if a vaccination slot becomes available, because one of our major priorities is never to waste doses. You will need your ten-digit NHS number, it will be on the letter sent to you. You can also find it on your prescriptions or through your GP online service. If you cannot go to one of the large vaccination centres, you can choose to have your vaccination at your GP surgery when it's available there, or a pharmacy.

What do I need to bring with me to the vaccination centre?

If you are taking medication, it is really important that you bring a list of these with you to the vaccination centre. Do not bring the medicines themselves. If the doctors and nurses running the clinic can't be sure what medicines you are on, they may not be able to give you your vaccine.

If you are taking a blood thinner called 'warfarin' you will also be going for regular blood tests at the GP or hospital to monitor the thickness of your blood using a test called INR. The INR test result is a number (a common example figure would be 2.5 for someone with thinned blood). Please make sure you know your latest INR reading and when that was last checked; the staff in the vaccine clinics often can't check this with the GP or hospital at the time.

If you don't know this, you can get it from your GP surgery. If you are taking warfarin but we don't know your INR reading it can sometimes mean your vaccination cannot go ahead. The vaccination computers at the centre do not link back to your medical records so we can't look up your result on the day.

Are there any side effects?

Like all medicines, vaccines can cause side effects. Most of these are mild and short-term, lasting no longer than a week (but usually a lot less), and not everyone gets them.

These may include:

- a sore arm where the needle went in
- feeling tired

- a headache
- feeling achy
- feeling or being sick
- a temperature or fever for a few hours

I have heard it can make people infertile – is this true?

There is no evidence that the vaccine affects fertility. The theory that immunity to the spike protein could lead to fertility problems is not supported by any evidence. Most people who contract COVID-19 will develop antibody to the spike and there is no evidence of fertility problems after Covid-19 disease.

JVT adds: “This is a nasty scare story designed to frighten people. It is simply untrue and there is no shred of credible evidence to support the idea. The British Fertility Society (BFS) and Association of Reproductive and Clinical Scientists (ARCS) say there is absolutely no evidence, and no theoretical reason, that any of the vaccines can affect the fertility of women or men. More information on fertility, pregnancy, IVF, and miscarriages can be found here:

https://www.britishfertilitysociety.org.uk/wp-content/uploads/2021/02/Covid19-Vaccines-FAQ-1_3.pdf”

Can pregnant women have the Pfizer/BioNTech or AstraZeneca (Oxford) vaccines?

The latest advice, from the Joint Committee on Vaccination and Immunisation (JCVI) is that the vaccine should be considered for pregnant women when their risk of exposure to the virus infection is high and cannot be avoided, or if the woman has underlying conditions that place her at a very high risk of serious complications of Covid-19.

Pregnant women should discuss the benefits and risks of having the vaccine with their healthcare professional and reach a joint decision based on individual circumstances. Women who are breastfeeding can be given the vaccine.

- The Royal College of Obstetricians and Gynaecologists has prepared an [information sheet](#) to help pregnant women who are eligible for and have been offered vaccination make an informed choice.
- Please also read the Royal College of Obstetricians and Gynaecologists [Q&As on COVID-19 vaccination, pregnancy and breastfeeding](#).
- Public Health England has produced [advice in a range of formats for pregnant women, breastfeeding women and women of childbearing age](#).

JVT adds: “The JCVI feels that pregnant women at very high risk should be considered for a vaccine. The JCVI does not say that a particular type of Covid vaccine is needed. It is true that we don’t yet have lots of data on Covid vaccines in pregnancy because pregnant women were not included in the major clinical trials. However, at least three studies of Covid vaccines in pregnancy will be starting in the UK in the next few months. JCVI will be keeping an eye on this area.”

Why did you change the interval between the first and second dose?

One dose of either vaccine provides a high level of protection from COVID-19. The decision to update the dosing interval is based on advice from the JCVI and the UK's Chief Medical Officers.

Vaccines are in short supply and giving one dose initially means more people who are at risk can be protected more quickly. This saves more lives overall than we could do by giving two quick doses to half as many people.

Having studied evidence on both the Pfizer/BioNTech and AstraZeneca (Oxford) vaccines the JCVI advised that we should prioritise giving as many people in at-risk groups their first dose, rather than providing two doses in a shorter time.

A statement about the dosing interval from the Joint Committee on Vaccination and Immunisation (JCVI) is available here:

<https://www.gov.uk/government/publications/prioritising-the-first-covid-19-vaccine-dose-jcvi-statement>

The available data show a high level of protection from the first dose with slightly greater protection after the second. The second will also increase long term protection.

JVT adds: "Having your second dose is really important when the time comes. But I am already very confident that the UK has done the right thing in prioritising first doses. Most of an individual's short-term protection comes from the first dose. So if we have two doses of vaccine in the fridge, and the first dose gives 70% protection and the second dose tops that up to 90%, then, in the short term while vaccines are in limited supply, it is better to give two vulnerable people 70% protection rather than give one 90% and the other one none at all. Canada has now followed the UK's lead and is prioritising first doses and allowing a dosing interval of 4 months."

[NACI rapid response: Extended dose intervals for COVID-19 vaccines to optimize early vaccine rollout and population protection in Canada - Canada.ca](#)

I am worried that the extended interval between the first and second doses will mean supplies have run out before I am called back, or I will have to have a 'mix and match' alternative vaccine.

It is current UK policy that you will get the same type of vaccine for your first and second doses. The NHS keeps a very careful track of the type of vaccine you got the first time in the National Immunisation Management System (NIMS). When people are called back for their second dose the NIMS tells staff what vaccine to give. The NHS and PHE are managing stock levels very carefully so that the right vaccines are available locally for second doses.

JVT adds: "Please don't worry about getting the right vaccine on your second visit. The NHS has very tight control of this and the JCVI does not currently advise mixing and matching. However, it is true that we are currently performing mix and match research studies. You are not in one of these studies unless you have volunteered and given written consent. But these studies are important and may give us greater flexibility in the long run."

Can I do what I want after I have been vaccinated?

It is essential that everyone continues to follow COVID-19 restrictions whether they have had the vaccine or not. It's tough, but really important for now.

This means it is important to:

- continue to follow social distancing guidance
<https://www.nhs.uk/conditions/coronavirus-covid-19/social-distancing/what-you-need-to-do/>
- wear a face covering and remember hands, face, space
- cut down on your interactions with other people. This is how Covid spreads.

JVT adds: "I know this is frustrating and people are desperate to do things like see children and grandchildren. But vaccine never gives 100% protection and we don't yet know if vaccinated people can still pass on the virus. Now is not the time to take risks. It is important to follow the rules as we follow the UK roadmap and restore life to near normal."

Is protection instant after I've been vaccinated?

Definitely not. Protection from any vaccine takes time to build up. In general, the older you are the longer it takes. It will take at least two weeks in younger people and at least three weeks in older people before you can expect to have a good antibody response. Even then, you must return when called for your second dose. Vaccines offer important protection to reduce risk, but they do not make you invincible. No vaccine offers 100% protection against any disease.

JVT adds: "Having that first vaccine gives people real hope, and it is genuinely uplifting to the spirits and a sign that we can beat this virus. But walking out of the vaccination centre feeling 'instantly invincible' is a very serious mistake."

How were the vaccines developed so quickly?

The vaccines that are authorised have been through three stages of clinical trials and have been tested on tens of thousands of people around the world. A Phase 3 Covid vaccine trial typically involves 30,000 to 40,000 patients.

The trial phases were organised to overlap, speeding up the overall time of vaccine production, but without cutting any corners on trialling the vaccine and ensuring it meets strict standards of safety and effectiveness.

Time has also been gained because:

- Vaccine trial volunteers were recruited at the start of the process, so they were ready to go once the vaccine was ready for trial.
- In the UK trials, the National Institute for Health Research (NIHR) made this their top priority.
- Plans were made for the next phase of trials by the companies without having to wait for investor decisions because many governments provided financial backing.
- Companies made decisions to develop processes for large scale production of vaccines which were still in trials. So, if vaccines were found to be safe and effective, they would be ready to be distributed.

The University of Oxford, has created a video about '[How to make a vaccine in record time'](https://www.youtube.com/watch?app=desktop&reload=9&v=ddDiyIKUP0M&feature=emb_logo)
https://www.youtube.com/watch?app=desktop&reload=9&v=ddDiyIKUP0M&feature=emb_logo

Are there animal products in the vaccine?

No. The MHRA has confirmed that the COVID-19 Vaccine AstraZeneca and Pfizer/BioNTech COVID-19 vaccine do not contain any components of animal origin.

How do I know it has been widely tested on people like me?

Each of the vaccines are tested on tens of thousands of people across the world. They are tested on both men and women, on people from different ethnic backgrounds, and of all ages between 18*-84.

(some companies have data down to 16 years of age)*

Pfizer/BioNTech clinical trials took place in the US, Europe, Turkey, South Africa and South America. Approximately 42% of global participants and 30% of U.S. participants had racially and ethnically diverse backgrounds

AstraZeneca trials took place in the UK, Brazil and South Africa. The non-white demographic in the UK trial was 7.1%. In the Brazil trial it was 31.4% and in South Africa it was 87%.

JVT adds: "This virus does not care how old you are, what ethnicity you are or where you live. It is a danger to the whole of society. The trials included many people from non-white ethnic backgrounds and there is no evidence at all that the vaccines work differently or are more or less safe in different ethnicities."

How do we know the vaccines protect people from COVID-19?

The Pfizer / BioNTech and Astra Zeneca (Oxford) vaccines have been shown to provide a high level of protection from symptomatic COVID-19. We do not yet know the impact of the vaccine on transmission and so we are vaccinating those who are at highest risk of serious illness and death.

As vaccination programmes roll out globally, our understanding of the effectiveness of each vaccine on disease, serious disease, death and transmission will increase, and these data will be used to develop advice on the next phase of the programme.

As of early March data shows:

- There is evidence from the SIREN study in healthcare workers that the Pfizer vaccine is approximately 70% effective at protecting against both symptomatic and asymptomatic infections combined, out to 35 days after the first dose and that two doses increase effectiveness to 85%.
- PHE data shows that in older adults (70+ years) the Pfizer vaccine reaches a vaccine effectiveness against symptomatic disease of 60-70% out to 35 days after the first dose and 85-90% after two doses
- PHE data also shows the AstraZeneca vaccine reaches a vaccine effectiveness against symptomatic disease of 60-75% after one dose, though the estimate of protection may improve further as more data accumulate
- There is evidence from England (PHE) and Scotland (Edinburgh University and Health Protection Scotland) that for both vaccines, the first dose provides over 80% effectiveness against hospitalization
- There is evidence that the first dose of the Pfizer vaccine provides over 85% effectiveness against mortality in the over 70s. Follow-up is currently too limited with the AstraZeneca vaccine to assesses the effectiveness against mortality

Every single vaccine authorised for use in the UK has been authorised by the MHRA and the three parts of any authorisation are a safety assessment, an effectiveness assessment and a manufacturing quality assessment.

JVT adds: "It is still early days and whilst we do need more data, especially on transmission, what we can see so far is that given time for a full vaccine rollout in the UK (another few months) the effects of vaccination are quite startling and could lead us to a much more normal way of life again. That is only going to work if vaccine uptake is high so it's vital that when you are called you come forward. Please keep to the appointment time you are given because often these vaccines cannot go back into the fridge for the next session. They are so precious; every single one matters, so we cannot afford to waste them."

What is the government doing to stop vaccine fraud?

The vaccine is only available free from the NHS. At no point will a patient be asked to pay. Do not accept offers for 'private, chargeable' vaccines from private providers as UK, MHRA authorised vaccines are only obtainable via the NHS.

Advice from Action Fraud:

- The NHS will never ask you for your bank account or card details.
- The NHS will never ask you for your PIN or banking password.
- The NHS will never arrive unannounced at your home to administer the vaccine.
- The NHS will never ask you to prove your identity by sending copies of personal documents such as your passport, driving license, bills or pay slips.

Useful links and additional information

NHS COVID-19 vaccine advice

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

Daily data summary

https://coronavirus.data.gov.uk/?_ga=2.218839707.329771229.1610380715-938063789.1606390656

Government vaccination programme information

<https://www.gov.uk/government/collections/covid-19-vaccination-programme>

Vaccination deployment plan

<https://www.gov.uk/government/publications/uk-covid-19-vaccines-delivery-plan>

Joint letter from four CMOs

<https://www.gov.uk/government/publications/letter-to-the-profession-from-the-uk-chief-medical-officers-on-the-uk-covid-19-vaccination-programmes/letter-to-the-profession-from-the-uk-chief-medical-officers-regarding-the-uk-covid-19-vaccination-programmes>

Green book - Coronavirus (COVID-19) vaccination information for public health professionals

<https://www.gov.uk/government/publications/covid-19-the-green-book-chapter-14a>