Covid-19 Vaccine FAQs

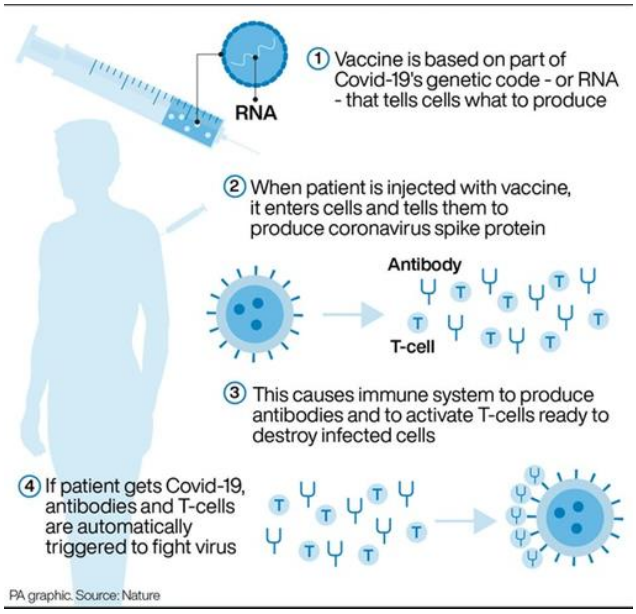
- **How do vaccines work?**

Vaccines greatly reduce the risk of infection by training the immune system to recognise and fight pathogens such as viruses or bacteria.

Vaccines safely deliver an immunogen which is a specific type of antigen. An antigen is a foreign substance which induces an immune response in the body. Vaccination therefore trains the immune system to recognize the pathogen when it is encountered naturally.

- **How do the new RNA Covid-19 vaccines work?**

The Covid-19 virus (also known as SARS-CoV-2) uses RNA for its genetic code in a way that humans use DNA. When a virus infects humans, it enters our cells and tricks the cell into producing new viruses using the viral RNA. The diagram below shows how the new vaccines (such as Pfizer/BioNTech) work.



The Pfizer/BioNTech vaccine is a messenger RNA vaccine (mRNA). 'Messenger' essentially means a copy of a small section of the original viral genetic code (RNA). This code (or mRNA) provides instructions for the human cell on how to make a piece of viral protein that is unique to SARS-CoV-2. Since only part of the viral protein is made, it does not do any harm to the person vaccinated but it is antigenic (i.e. stimulates the body to produce antibodies).

After the piece of the protein is made, the cell breaks down the mRNA strands and disposes of them using enzymes in the cell. The viral protein is then displayed on the cell surface which causes the immune system to begin producing antibodies and activating immune cells to fight off what it thinks is an infection. These antibodies are specific to the SARS-CoV-2 virus, which means the immune system is primed to protect against future infection.

- **Have mRNA vaccines been used before?**

The Pfizer/BioNTech vaccine is the first mRNA vaccine to be licensed but these types of vaccines have been studied for many years in other viral infections such as influenza, Zika, rabies and RSV.

- **Does the mRNA vaccine alter human genetic material?**

No. The mRNA strand never enters the cell's nucleus (where DNA is stored) and does not alter genetic material

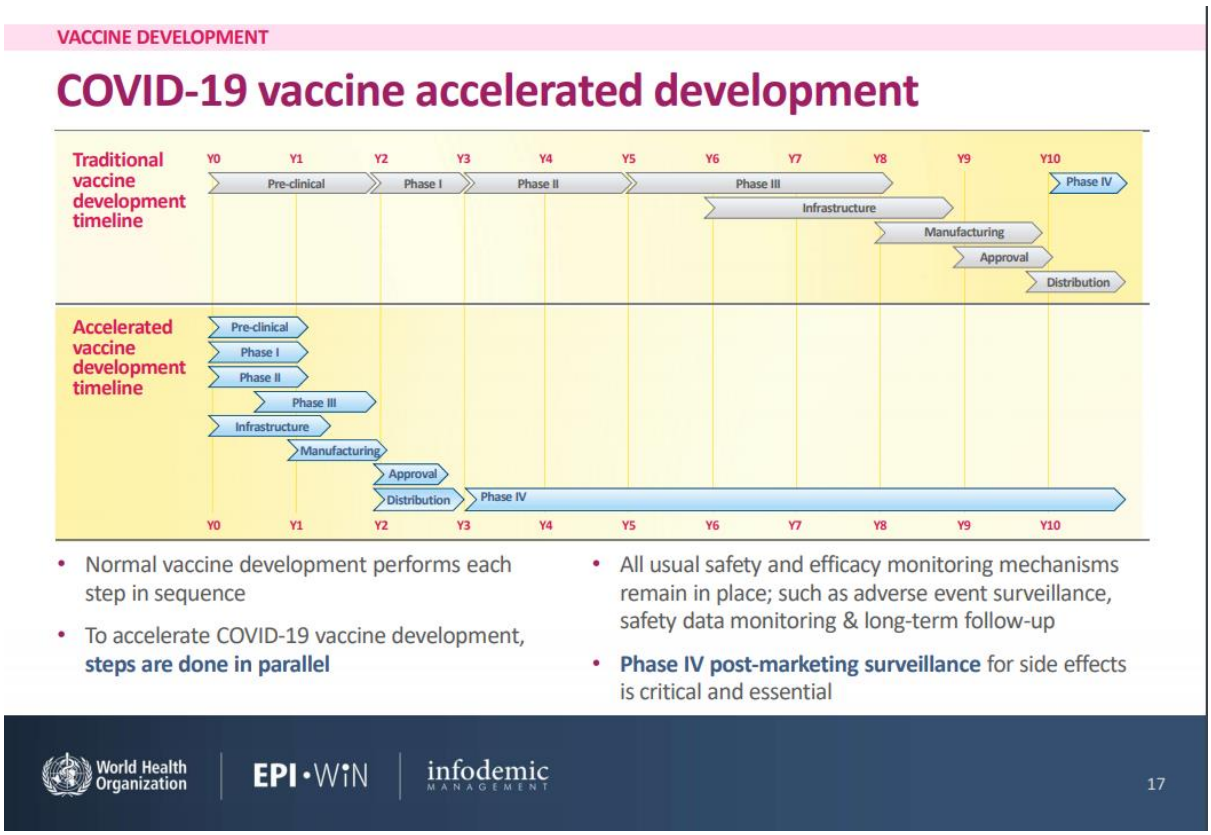
- **Is the Oxford/Astra Zeneca vaccine different?**

Yes. The Oxford/Astra Zeneca vaccine works slightly differently as it uses another virus (adenovirus) to deliver the antigen needed to train the immune system. This virus is not capable to replicating in humans but triggers a similar immune response to the mRNA vaccine.

- **What's the process of testing a vaccine and how have Covid-19 vaccines been developed so quickly?**

Any new medications including vaccines are rigorously tested before being licenced for use. This process often takes many years and has different phases. An advantage of a pandemic, if there is one, is that finding a vaccine was the main focus of governments and the scientific community. This meant that funding and resources were rapidly available. The different phases of the trial were also undertaken in a different way to make it as efficient as possible without compromising safety.

The infographic below illustrates the different way the trails have been conducted



- **Have the vaccines been tested on enough people?**

Yes. The Pfizer/BioNTech vaccine has been tested on over 44000 people. To put this in context, of 13 common vaccines approved between 2000-2011, the average number of participants was 27000 (range 2,700-86,000) highlighting that the number of people it has been tested on is well within the expected number for a vaccine.

- **How is the Pfizer/BioNTech vaccine delivered?**

It is given as an intramuscular injection into the arm (like the flu jab)

- **Is the Pfizer/BioNTech vaccine safe?**

Yes. The UK MHRA (Medicine and Healthcare products Regulatory Agency) approved the vaccine on 2nd December 2020. This agency has assessed all the data from the clinical trials and has deemed the vaccine safe. They would only do this if they were happy with all the data provided by Pfizer/BioNTech.

- **What are the side effects of the Pfizer/BioNTech vaccine?**

The side effects you may experience with the vaccine are similar to those seen with other vaccines and includes a mild fever for the first 48hrs after vaccination (please note isolation not required unless Covid-19 suspected). Local reactions at the injection site are common and include pain, redness and swelling. Other potential side effects include fatigue (4%) and headache (2%). They will usually resolve after a few days and medication such as paracetamol can be used if needed. There were no serious reactions to the vaccine reported.

- **Might there be long term side effects of the Pfizer/BioNTech vaccine we don't know about yet?**

This is extremely unlikely. The way vaccines work mean that any side effects are usually experienced in the first few days and the data we have shows that this is the same for this vaccine. The MHRA will be monitoring the situation closely.

- **Will the Pfizer/BioNTech vaccine affect my fertility?**

There is no evidence that the vaccine has any impact on fertility

- **How effective was the Pfizer/BioNTech vaccine?**

Pfizer/BioNTech evaluated 170 cases of Covid-19 in trial participants. Of these cases, 162 occurred in the placebo group and 8 in the vaccine group. This gives an efficacy of 95%.

- **Will the Pfizer/BioNTech vaccine stop me passing Covid-19 onto unvaccinated people?**

We don't know this information yet

- **Why do I need to have had the flu vaccine first?**

Vaccinating yourself against flu is the best way to protect yourselves, your family and your patients from flu which is why we recommended you get the flu vaccine before the Covid-19 vaccine.

- **Is there anyone who can't have the Pfizer/BioNTech vaccine?**

There are very few people who can't have the vaccine. However, current guidance states that the following group should not have the vaccine at present:

- Individuals participating in a clinical trial of COVID-19 vaccines (refer back to investigators).
- Where individual has a bleeding disorder AND their doctor recommends against IM or small dose injections on the balance of risk, which may include consideration of anticoagulation therapy status.
- Pregnant women, unless an underlying condition makes the individual at very high risk from COVID-19 and exposure cannot be avoided (further details in following slides).
- It should not be used during breast-feeding.

- **How long should I wait after the vaccine before planning a pregnancy?**

It is advised that you should avoid pregnancy for two months after the second dose.

- **What if I want to try for pregnancy before I'm vaccinated?**

The advice for women is that you should not get vaccinated if you are pregnant or are planning a pregnancy within three months of the first dose.

- **Why are two doses needed?**

The first dose primes the immune system to the virus and the second dose makes the immune response stronger. There are a number of other vaccines that require a second dose or boosters (such as Hepatitis B vaccine).

- **How quickly after the second dose can I be considered protected?**

You can be considered protected seven days after the second dose.

- **Will I need another booster every year like flu vaccine?**

We don't know this yet and more work is being done to look into this and how long immunity lasts for.

- **Will the Pfizer/BioNTech vaccine provide lifelong protection against Covid-19?**

We don't know this yet but it is likely to give protection for many months if not years.

- **If I am part of the asymptomatic testing regimen, will having the Pfizer/BioNTech vaccine cause me to have a positive test (on either the PCR or lateral flow testing kits)?**

No. Vaccination itself will not cause a positive Covid-19 test result.

- **Will I get a certificate to prove I've been vaccinated?**

We are awaiting guidance from the government about certification.

- **I've already had confirmed Covid-19 infection. Do I still need to be vaccinated?**

Yes. It is still unclear how long immunity lasts so vaccination is still recommended. It should be deferred until clinical recovery and at least four weeks after onset of symptoms or four weeks from the first PCR positive specimen in those who are asymptomatic.

- **What if I have asymptomatic Covid-19 infection at the time of vaccination?**

Vaccination of individuals who may be infected or asymptomatic or incubating COVID-19 infection is unlikely to have a detrimental effect on the illness.

- **Will I still need to wear PPE after being vaccinated?**

Yes – you will still need to adhere to infection, prevention and control practices until informed otherwise.

- **What's the bottom line?**

The pandemic has cost the lives of 1.5 million people so far and has infected 65 million. While vaccination is not compulsory, vaccination is the best way of beating this virus and getting back to normality. The vaccines that are being developed and approved by MHRA are safe and are to be fully recommended