Covid-19: Vaccines

Information on COVID-19 vaccines in the UK

COVID-19 vaccines are being developed worldwide. All must be assessed as effective and meet strict safety standards before being used. In the UK, the Medicines and Healthcare products Regulatory Agency (MHRA), an independent authority, assess the safety, quality, and effectiveness of medicines.

UK Government guidance on the UK groups that must be prioritised for COVID-19 vaccine can be found here: Priority groups for coronavirus (COVID-19) vaccination: advice from the Joint Committee on Vaccination and Immunisation (JCVI).

International travellers have not been identified as a priority group for COVID-19 vaccination, but would be eligible for the vaccine if in priority groups.

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Pfizer BioNTech COVID-19 vaccine

This vaccine is a nucleoside- modified messenger RNA vaccine (mRNA). The genetic code (mRNA) from the SARS-CoV2 virus is used in the vaccine to enter cells of the person vaccinated to make the target S-protein stimulating the antibody response blocking viral entry into cells.

AstraZeneca COVID-19 vaccine

This vaccine uses a virus that does not cause illness, called a chimpanzee adenovirus (ChAD) to carry the genetic sequence of the SARS-COV S-protein into the cell of the person vaccinated to stimulate the antibody against the S-protein of the virus.

COVID-19 Vaccine Moderna

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The vaccines are MHRA authorised and considered inactivated (including the non-replicating adenovirus vaccine) [1].

Vaccine	Schedule	Age and vaccine effectiveness	Duration of protection
Pfizer BioNTech COVID-19 vaccine (mRNA vaccine)	Two intramuscular doses of 0.3mls at a minimum interval of 21 days	Phase 3 trials: 95% vaccine efficacy across age, gender and ethnicity Adults over 65 years observed efficacy 94%	Booster doses are not recommended until further vaccine trial studies have been completed
AstraZeneca COVID-19 vaccine (ChAD)	Two intramuscular doses of 0.5mls at a minimum interval of 28 days	Initial efficacy data suggests a 73% efficacy overall Higher efficacy noted in those given a first dose of 0.25mls followed by a 0.5mls dose	Booster doses are not recommended until further vaccine trial studies have been completed
COVID-19 Vaccine Moderna	Two intramuscular doses of 0.5mls at a minimum interval of 28 days	Adults aged 18 years and older Initial data suggests a 94% efficacy	Duration of protection is unknown at present

Note these vaccines are supplied in multidose vials

The second dose of vaccine (preferably using the same vaccine used for the first dose) should still be administered even if an interval longer than the recommended. If the same vaccine is not available as given on the first occasion, it is considered reasonable to give the vaccine available

particularly if at immediate high risk of COVID-19 infection or considered unlikely to attend for vaccination again [1].

It is recommended that the second dose of both vaccines should be routinely scheduled between four and 12 weeks after the first dose. This will allow more people to benefit from the protection provided from the first dose during the roll out phase. Longer-term protection will then be provided by the second dose [1].

Based on current information about these COVID-19 vaccines, there should ideally be an interval of at least seven days with other vaccines to avoid incorrect attribution of potential adverse events.

More information about the use of COVID-19 vaccines for those with special health needs including during pregnancy, breastfeeding and those who are immunosuppressed or have HIV infection is available here.

Contraindications And Precautions To Covid-19 Vaccination

There are very few individuals who cannot receive the Pfizer-BioNTech, AstraZeneca or Moderna COVID-19 vaccines.

Contraindications:

Confirmed previous systemic allergic reaction (including immediate-onset anaphylaxis) to

- a previous dose of the same COVID-19 vaccine [see also Adverse Reactions]
- any components of the vaccine e.g. polyethylene glycol

Following close national surveillance, the MHRA no longer advises that individuals with a history of anaphylaxis to food, an identified drug or vaccine do not get the vaccine, as long as they are not known to be allergic to any component (excipient) of the vaccine [1]. Polyethylene glycol (PEG) is present in the Pfizer-BioNTech and Moderna vaccines [1]. Known allergy to PEG (present in some medicines, household goods and cosmetics) is rare but if known, the individual should not receive the Pfizer-BioNTech or Moderna vaccines. Some individuals are allergic to polysorbate 80 widely used in medicines, foods and some medicines including some injected influenza vaccines. Individuals with known allergy to polysorbate 80 should not receive the AstraZeneca vaccine.

The British Society for Allergy and Clinical Immunology (BSACI) has advised that individuals who have a reaction to the first dose of a COVID-19 vaccine may be able to receive a 2nd dose. For further details see flow chart for managing patients who have allergic reactions to the first dose.

Precautions:

If acutely unwell, postpone until fully recovered.

Vaccination of those who maybe infected, asymptomatic or incubating COVID-19 infection should be delayed until clinical recovery and at least 4 weeks after symptoms onset or 4 weeks after a first PCR positive specimen in those who do not have symptoms.

No safety concerns have been noted from vaccinating those with past COVID-19 infection or detectable COVID-19 antibodies.

Having prolonged COVID-19 symptoms is not a contraindication to receiving COVID-19 vaccine, but if there is evidence of current deterioration, deferral of vaccination may be considered.

Adverse Reactions

Local reactions at the injection site are common and other symptoms including fever, muscle and joint aches, fatigue and headache are reported with these vaccines. Detailed information about adverse reactions following COVID-19 vaccination is available in in Immunisation against infectious disease Chapter 14a.

Following COVID-19 vaccination, a mild fever, which usually resolves within 48 hours, is a common, expected reaction and isolation is not required unless COVID-19 is suspected.

Detailed information about the use of the vaccine in other groups: pregnancy, breast feeding, children, immunosuppression and HIV is available in Immunisation against infectious disease Chapter 14a.

As these vaccines are labelled with a black triangle, all adverse reactions occurring in individuals of any age after vaccination should be reported to the MHRA using the Yellow Card Scheme.

Resources

- MHRA guidance on coronavirus (COVID-19)
- Immunisation against infectious diseases
- GOV.UK: Coronavirus (COVID-19)
- Public Health England: Coronavirus (COVID-19): guidance
- COVID-19 (coronavirus) in brief

REFERENCES

1. Immunisation against infectious disease Chapter 14 a: COVID-19. [Accessed 15 February 2021]

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