

VACCINATION

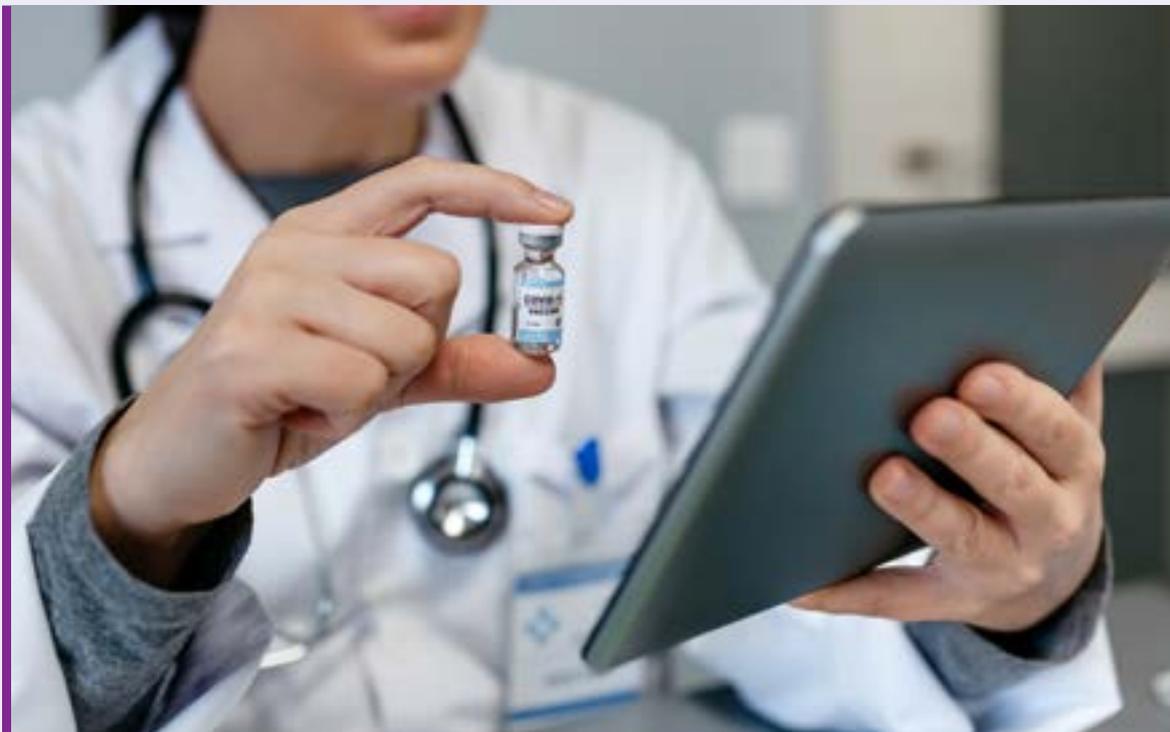
COVID-19

CORONAVIRUS



COVID-19 Vaccine

Amidst the COVID-19 pandemic, several national and international organisations, including the World Health Organization, are working and trying to track the pandemic, advise on critical clinical interventions and distribute the required medical supplies. It has been a long and competitive race to develop and supply safe and effective vaccines, especially since there is no clear medicine to treat COVID. Vaccines work by preparing our body to recognise and fight against microorganisms when they attack.¹ The first few thousand vaccine shots have already been delivered across the USA and India successfully.



As per the Indian Council of Medical Research, a broad range of COVID vaccines have been developed worldwide. The various types of COVID vaccines include protein subunit, viral-vectored, nucleic acid (DNA and RNA), live attenuated and inactivated vaccines.² The Centers for Disease Control and Prevention (CDC), USA, has authorised and recommended the use of Pfizer-BioNTech COVID-19 vaccine and Moderna's COVID-19 vaccine.³ The two vaccines that have received approval from the Drugs Controller General of India for restricted use in emergencies are COVAXIN™ and Covishield.²

Let us understand the vaccines and the differences between them.

Pfizer-BioNTech COVID-19 vaccine



This is a USFDA authorised vaccine for emergency use to prevent COVID-19.⁴

- **What are the ingredients in this vaccine?**

The active and inactive ingredients of this vaccine are as follows:

- mRNA: Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2
- Lipids: 2[(polyethylene glycol)-2000]-N, N-ditetradecylacetamide; 1,2-distearoyl-sn-glycero-3-phosphocholine; cholesterol; and (4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate)
- Potassium chloride
- Monobasic potassium phosphate
- Sodium chloride
- Dibasic sodium phosphate dihydrate
- Sucrose^{4,5}

- **Who should get vaccinated?**

Individuals aged 16 years and older can be vaccinated with Pfizer-BioNTech COVID-19 vaccine.⁴



- **Who should not take this vaccine?**

You should not opt for this vaccine if you have had a severe allergic reaction to this vaccine in the past or are allergic to any of the vaccine's ingredients.⁴

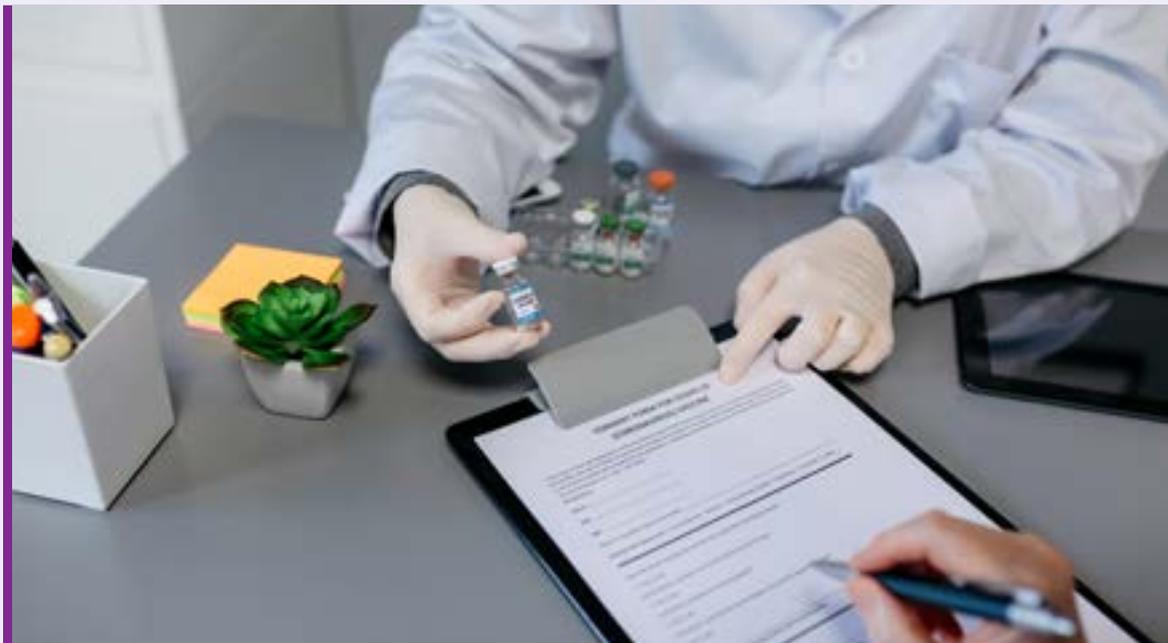
- **How will the vaccine be given to you?**

It is given as an injection in the muscle in two doses given 21 days apart. Doses should be taken as prescribed to complete the vaccination series.⁴

- **What are the benefits of this vaccine?**

This vaccine is shown to be effective in the prevention of COVID-19 after 2 doses given three weeks apart as per an ongoing clinical trial. About 20,000 individuals aged 16 years and older have received a minimum of one dose in the clinical trial.⁴

- **What are the associated risks?**



Pain, swelling or redness at the injection site; headache; muscle or joint pain; fever; chills; fatigue; and swelling of the lymph nodes are some of the side effects reported with this vaccine.

It may also cause a severe allergic reaction within a few minutes to 1 hour after the dose is injected. Therefore, you may be asked to wait at the venue of vaccine administration for post-vaccination monitoring. Severe allergic reactions may cause breathlessness, faster heartbeats, dizziness, weakness, rash all over the body and swelling of the face and throat.⁴

- Is it possible to take the vaccine if one has a history of COVID-19 infection?

Although it is safe to take this vaccine even if you have a history of COVID-19 infection, the CDC suggests that reinfection is uncommon in the 90 days after the first infection. Thus, vaccination should be taken when you are about to complete these 90 days.⁶

Moderna's COVID-19 vaccine

The USFDA issued an emergency use authorisation of this vaccine for the prevention of COVID-19.



- What are the ingredients of this vaccine?

The following ingredients are present in Moderna's COVID-19 vaccine:

- mRNA: Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2
- Lipids: PEG2000-DMG: 1, 2-dimyristoyl-rac-glycerol, methoxypolyethylene glycol; 1,2-distearoyl-sn-glycero-3-phosphocholine; cholesterol; SM-102: heptadecane-9-yl 8-((2-hydroxyethyl) (6-oxo-6-(undecyloxy) hexyl) amino) octanoate
- Tromethamine and tromethamine hydrochloride
- Acetic acid and sodium acetate
- Sucrose⁵

- **Who should get vaccinated?**

You can get yourself vaccinated with Moderna's COVID-19 vaccine if you are age 18 or above.⁷

- **Who should not take this vaccine?**

If you have observed a severe allergic reaction to this product or any of its ingredients, do not take this vaccine. If you have observed an immediate allergic reaction of any severity after taking the previous dose of this vaccine or an immediate reaction of any severity to polysorbate, do not take this vaccine.

Precautions should be taken if you have a moderate-to-severe acute illness at the time of vaccination or a history of an allergic reaction to any other vaccine or injectable medicine.⁷

- **How will the vaccine be given to you?**

It will be given in two doses, 28 days apart, in the form of an injection in the deltoid muscle in the shoulder. The vaccination course is completed after taking both doses of the vaccine.⁷

- **What are the benefits of this vaccine?**

This vaccine may be able to prevent COVID-19. The vaccine has been evaluated in various clinical trials by the FDA, in which several thousand individuals from different races participated, providing clear evidence on its safety and effectiveness.⁸

- **What are the associated risks?**

The most common side effects of this vaccine include pain at the injection site, nausea, vomiting, fever, joint and muscle pain, headache, tiredness and swelling of the lymph nodes in the arm in which the injection was given.⁹

The vaccine provider will monitor you for 30 minutes if you have had an allergic reaction to this product, any other vaccine or an injectable product in the past. You will be monitored for 15 minutes if no such history is recorded.⁷

- **Is it possible to take the vaccine if one has a history of COVID-19 infection?**

As per USFDA, only 2.2% of the individuals with a history of COVID-19

infection were enrolled in the clinical trials. Limited data suggest that there is a possibility of reinfection with the COVID virus in individuals who have previously had COVID; therefore, the vaccine will be beneficial for preventing the infection even if you have had it in the past. The safety profile of this vaccine is the same in previously infected and uninfected individuals.⁸

However, CDC suggests that reinfection is uncommon in the 90 days post COVID-19 infection. Therefore it can be taken at the near end of this period.⁶

COVAXIN™

COVAXIN™ – India's first indigenous vaccine – developed by Bharat Biotech in collaboration with Indian Council of Medical Research – National Institute of Virology.¹⁰ Phase 3 clinical trials of the vaccine are ongoing, and the vaccine has received approval from the Drugs Controller General of India for restricted use in emergency situation.²



• What are the ingredients in this vaccine?

The components of the vaccine are as follows:

- 6 µg of whole virion inactivated SARS-CoV-2 antigen (strain: NIV-2020-770)
- Aluminium hydroxide gel
- TLR 7/8 agonist
- 2-phenoxyethanol
- Phosphate buffer saline

- **Who should get vaccinated?**

The Central Drug Standard Control Organisation has approved the restricted use of this vaccine under clinical trial mode. Those who are prioritised under the public health program of the Ministry of Health and Family Welfare, Government of India, will be included in this vaccination program. However, the authority to offer vaccination to the individuals lies with the respective government officials. If you are offered vaccination with COVAXIN™, it is up to you to accept or reject it.¹¹

- **Who should not take this vaccine?**

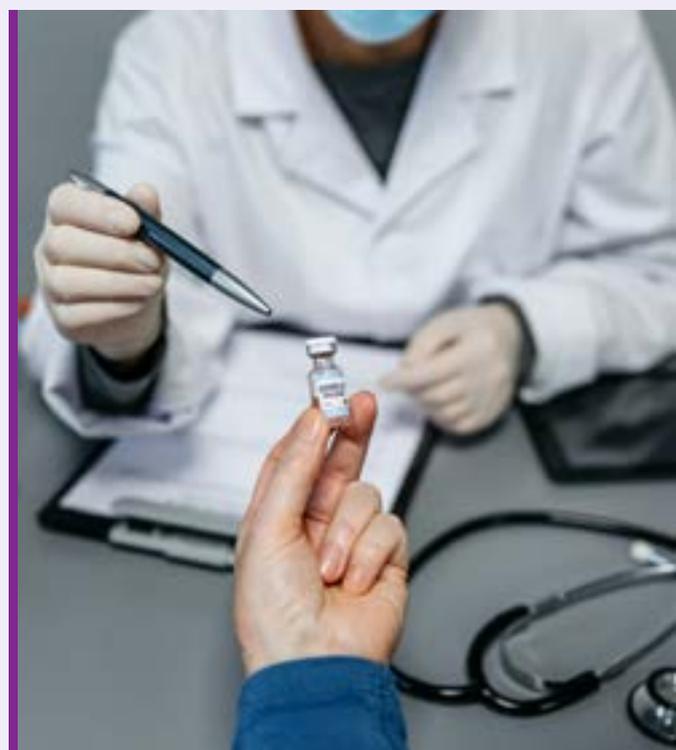
You should not take this vaccine if you have any history of a bleeding disorder, fever, allergies or any other serious condition that affects your immune system. If you are taking blood-thinning medicines, pregnant or lactating, do not take this vaccine. Also, it is not recommended to take this vaccine in combination with any other COVID-19 vaccine.¹¹

- **How will the vaccine be given to you?**

It will be given as an injection into a muscle of the upper arm. Two doses will be delivered, with a gap of 28 days between each dose.¹¹

- **What are the benefits of this vaccine?**

Although the clinical efficacy of COVAXIN™ is not yet established, a strong immune response and protective effects against the COVID virus have been noted in animal studies. As preclinical steps are essential in the evaluation of the immunogenicity and protective effects of various vaccines and phase 3 trials are ongoing, the DCGI approved the use of this vaccine for emergency use in prioritised groups who are informed by the MoHFW to get vaccinated with COVAXIN™.¹¹⁻¹³



- What are the associated risks?

This vaccine's risks include pain, swelling and redness at the injection site; fever; weakness; rashes; nausea; vomiting; body pain; headache; weakness in the injection arm; and stiffness in the upper arm. There is a remote possibility that this vaccine may cause severe allergic reactions with one or more of the following symptoms:

- Breathing difficulty
- Increased heartbeats
- Rash all over the body
- Swollen face and throat
- Weakness and dizziness¹¹

COVISHIELD™



- What are the ingredients in this vaccine?

It comprises the following constituents:

- ChAdOx1 nCoV- 19 CoronaVirus Vaccine (Recombinant) 5 × 10 viral particles
- L-histidine and L-histidine hydrochloride monohydrate
- Polysorbate 80
- Magnesium chloride hexahydrate
- Sucrose
- Ethanol
- Disodium edetate dihydrate
- Sodium chloride
- Water for injection¹⁴

- **Who should get vaccinated?**

You should consider taking this vaccine for the prevention of COVID-19 if you are 18 years and above.¹⁴

- **Who should not take this vaccine?**

You should not take this vaccine if you are:

- Allergic to one or more active or inactive ingredients of this vaccine
- Taking immune-suppressing medications
- Having concurrent severe illness¹⁴

- **How will the vaccine be given to you?**

COVISHIELD™ vaccine is administered intramuscularly, preferably at the deltoid muscle. The vaccine regimen includes two separate doses with the second dose administered between 28 to 42 days after the first dose. However, some studies also suggest administering the second dose up to 12 weeks after the first dose.¹⁴



- **What are the benefits of using this vaccine?**

As per the interim analysis of an ongoing clinical trial, this vaccine has an acceptable safety profile and is useful in the prevention of symptomatic COVID-19.¹⁵

- **What are the associated risks?**

Pain, tenderness, warmth, swelling, induration and bruising at the injection site; flu-like illness; fever; tiredness; chills; muscle or joint pain; rashes; nausea; vomiting; abdominal pain; dizziness; headache; decreased appetite; and swollen lymph nodes are the side effects associated with this vaccine. However, the safety profile of COVISHIELD™ vaccine based on an Indian phase 2 and 3 clinical trials indicates that it is safe and well-tolerated.¹⁴

Although we have found a potential way out to override this pandemic, we must continue to take all the precautionary measures recommended to prevent COVID-19. We are slowly on our way to get back to the hustle-bustle that we have been missing throughout the lockdown. The speed with which we will attain our usual busy life with regular travels, face-to-face meetings and a mask-free environment depend on the precautions we take and the rules we follow.

Amidst the COVID-19 pandemic, staying healthy and following all safety precautions are the two key mantras to staying safe!



RESOURCES!

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