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## FAQs on COVID VACCINE

### 1. What are the contraindications to COVID vaccine?

The contraindication for taking COVID vaccines is in persons with a history of an **anaphylactic or allergic reaction** to a previous dose of COVID-19 vaccine. Those with immediate or delayed onset anaphylaxis or allergic reaction to vaccines or injectable therapies, pharmaceutical products, or food items, can take the vaccine, but with precautions, under medical supervision.<sup>1,2,3</sup>

### 2. Is it safe to take COVID vaccine while being pregnant or lactating?

There is currently limited data on the safety of COVID-19 vaccines in this group as pregnant and lactating women have not been included in the clinical trials. However, based on how these vaccines work in the body, experts believe they are **unlikely to pose a risk** for individuals who are pregnant or lactating.<sup>4,5,6</sup>

### 3. It is understood that one needs to undertake caution in vaccinating persons with a history of bleeding or coagulation disorder. How does a person know if he/she has a coagulation disorder? What tests can be conducted?

There are a **few bleeding disorders** like 'haemophilia' where one should take the vaccine under the supervision of their treating physician. Patients who are admitted in hospital or ICU and have bleeding problems should delay the vaccination till they are discharged. However, several people with heart and brain disorders, on blood thinners like aspirin and antiplatelet drugs, can continue with their medicines and have the vaccines. For them, vaccines are absolutely safe.<sup>1</sup>

### 3. Will COVID vaccines provide long term protection?

Because COVID vaccines have only been developed in the past few months, it is too early to know the duration of protection of COVID-19 vaccines. Research is ongoing to answer this question. However, it is encouraging that available data suggest that most people who recover from COVID-19 develop an immune response that provides at least some period of protection against reinfection – although it is still not certain how strong this protection is, and how long it lasts.<sup>1,3</sup>

### 4. After getting a COVID-19 vaccine, will I test positive for COVID-19 on a viral test?

**No.** The vaccines currently recommended for use either act against the spike protein (COVISHIELD and SPUTNIK) or are prepared from killed virus (COVAXIN) and will NOT test positive on [RTPCR/Rapid Antigen tests](#). If the body develops an immune response to vaccination, which is the goal, one may test positive on [antibody tests](#).

### 5. Can a person who has suffered from COVID-19 (confirmed or suspected) infection be vaccinated?

A person currently suffering from COVID-19 infection should defer vaccination for 14 days after complete resolution symptoms so that they are non-infectious and will not infect others at the vaccination site. After full recovery, such individuals should wait for **04 to 08 weeks** (not corroborated by any evidence but recommended in guidelines) before getting the vaccine.<sup>1,3</sup>

6. **When can a person with past h/o receiving plasma therapy or monoclonal antibodies take the vaccine?**

In case an individual had received plasma therapy or monoclonal antibodies, it is recommended to **defer vaccination for 90 days**.<sup>1</sup>

7. **What is a Break-Through Case?**

A Break-Through Case is a person who has been **tested COVID positive  $\geq 14$  days after completing two doses of COVID-19 vaccine**.<sup>1</sup> As per available data till date, breakthrough cases have occurred only in a small percentage of people. No unexpected patterns (severity or death) have been identified among people with reported vaccine breakthrough infections.

8. **Will COVID vaccines reduce the severity and death due to COVID?**

The COVID-19 vaccines create a broad immune response and have been found to be effective at preventing serious illness and death. It is strongly recommended that all eligible people get a COVID-19 vaccine as soon as one is available to them.<sup>1,2,3</sup>

**References.**

1. Center for Disease Control. [COVID-19 Vaccine FAQs for Healthcare Professionals | CDC](#)
2. MoHFW. [COVID-19 Vaccine FAQs \(mohfw.gov.in\)](#)
3. [World Health Organisation. Coronavirus disease \(COVID-19\): Vaccines \(who.int\)](#)
4. [Information about COVID-19 Vaccines for People who Are Pregnant or Breastfeeding | CDC](#)
5. Tom T. Shimabukuro et al. Preliminary Findings of mRNA Covid-19 Vaccine Safety in Pregnant Persons. **NEJM** 21 April 2021
6. American College of Obstetricians and Gynecologists. Available from [Vaccinating Pregnant and Lactating Patients Against COVID-19 | ACOG](#)

## **FAQs ON COVID-19 TESTING STRATEGY**

### **1. What tests are available to detect COVID-19?**

- (a) **Molecular Test** like Reverse Transcriptase Polymerase chain reaction (**RTPCR**) and **TrueNat** are the gold standard tests used to detect SARS-CoV-2 infection. Molecular tests detect virus by amplifying the viral genetic material to detectable levels. They require Bio Safety Level 2 to 3 laboratory to perform.
- (b) **Rapid Antigen Detection Test (RADT)** is also used to detect SARS-CoV-2 infection and they detect the viral proteins (known as antigens). These tests are cheaper than RTPCR, quicker, and does not require elaborate laboratory settings to perform. For both tests, the samples are collected from the nose and/or throat with a swab. Improper sample collection can reduce the accuracy of tests.
- (c) **Antibody Test** is used to detect protective antibody produced by body against SARS-CoV-2 and test positivity denotes past COVID infection. The IgM Antibody test detects antibody against recent infection whereas IgG Antibody test indicates old infection. They are primarily used for surveillance (to estimate the prevalence of infection in a community) and not for diagnosis of the disease. Blood sample is used for Antibody Test.

### **2. How accurate are these tests?**

- (a) **RTPCR/ TRUNAT** are the gold standard tests and have a high sensitivity and specificity of above 95%. It means that these test have very low False Negative results - once tested negative, the result indicates absence of virus. However, it can detects any virus remnant/ dead virus in recovered non-infectious person, leading to false positive results.
- (b) **RADTs** are less accurate than Molecular tests and perform best when there is more virus circulating in the community (more number of cases in the community, containment zones). A person tested as positive by RAT is definitely infected with SARS-CoV-2 and infectious to others. However, a symptomatic person tested negative by RAT may still be infected with SARS-CoV-2, meaning they might give false negative result, and in such cases, RTPCR/ TRUNAT is to be conducted.
- (c) **Antibody Tests** are less accurate than Molecular Tests and chances of detection of antibodies are higher 14 days after onset of infection.

### **3. Does high viral transmission in community (when more number of cases are present) have a bearing on the outcome of tests?**

As the case count increases in a community, the sensitivity of low accuracy test like RADT increases and they are able to detect SARS-CoV-2 infected person more accurately. On the other hand, molecular tests like RTPCR/ TRUNAT will also detect more cases, some of which would probably be non-infectious.

#### 4. **Given the above considerations, what test should be used when?**

- (a) **RTPCR/ TRUENAT** are used to detect Symptomatic person and High Risk Contacts of confirmed cases (07 to 10 days if asymptomatic or earlier if becomes symptomatic). They are also used before discharge of a severe case from hospital (on case to case basis). In addition, RTPCR test is conducted before a treatment procedure at hospital or when mandated before travel
- (b) **RADTs** perform best when there is more virus circulating in the community (more number of cases in the community). Hence, they are used for rapid detection of cases in field settings like in outbreaks, containment zones and in community transmission phase. They can also be used to test person after travel related quarantine before entering afloat platform and high-density work place.
- (c) **Antibody Tests** are primarily used for surveillance (to estimate prevalence of infection in a community) and estimate vaccine effectiveness.

**While a person is waiting for test results, they should remain isolated from others.**

#### **References.**

1. Fitzpatrick MC et al. Buyer beware: Inflated claims of sensitivity for rapid COVID-19 tests. **Lancet**. 2020 dec 14. S0140-6736(20)32635-0
2. Dinnes J et al. Cochrane COVID-19 Diagnostic Test Accuracy Group. Rapid, point of care antigen and molecular based tests for diagnosis of SARS-CoV-2 infection. **Cochrane Database Systemic Review**. 2021 Mar 24;3:CD013705.
3. Deeks JJ et al. Antibody tests for identification of current and past infection with SARS-CoV-2. **Cochrane Database Systemic Review**. 2020;6:CD013652.
4. Watson J et al. Interpreting a COVID-19 test result. **BMJ** 2020;369:m 1808.

## **FAQs ON HIGH-RISK SETTINGS AND COVID APPROPRIATE BEHAVIOUR**

### **1. Are there certain settings where COVID-19 can spread more easily?**

(a) Yes, any situation in which people are in **close proximity** to one another for **long periods of time** increases the risk of transmission. **Indoor locations**, especially settings where there is poor ventilation, are riskier than outdoor locations. **Activities where more particles are expelled from the mouth**, such as singing or breathing heavily during exercise, also increase the risk of transmission.

(b) The “**Three C’s**” are a useful way to think about this. They describe settings where transmission of the COVID-19 virus spreads more easily:-

- (i) **Crowded** places;
- (ii) **Close-contact** settings, especially where people have conversations very near each other;
- (iii) **Confined** and enclosed spaces with poor ventilation.

(c) The risk of COVID-19 spreading is especially high in places where these “3Cs” overlap.

### **2. What are the most important aspects of COVID Appropriate Behaviour?**

- (a) Wear a mask that covers your nose and mouth to help protect yourself and others.
- (b) Stay 6 feet apart from others who don’t live with you.
- (c) Get a COVID-19 vaccine when it is available to you.
- (d) Avoid crowds and poorly ventilated indoor spaces.
- (e) Wash your hands often with soap and water. Use hand sanitizer if soap and water aren’t available.

### **3. How to Select a Mask?**

#### **(a) Do Choose Masks that**

- (i) Have two or more layers of washable, breathable fabric.
- (ii) Completely cover your nose and mouth.
- (iii) Fit snugly against the sides of your face and don’t have gaps.
- (iv) Have a nose wire to prevent air from leaking out of the top of the mask.

#### **(b) Do not choose Masks that**

- (i) Are made of fabric that makes it hard to breathe, for example, vinyl.
- (ii) Have exhalation valves or vents which allow virus particles to escape.
- (iii) Are prioritized for healthcare workers, including N95 respirators.

#### 4. How to ensure your mask works the best it can?

- (a) **Make sure your mask fits snugly against your face.** Gaps can let air with respiratory droplets leak in and out around the edges of the mask
- (b) **Pick a mask with layers to keep your respiratory droplets in and others' out.** A mask with layers will stop more respiratory droplets getting inside your mask or escaping from your mask if you are sick.
- (c) **Double Masking.**

#### 5. What is Double Masking?

- (a) Double masking is wearing a **disposable mask underneath a cloth mask**. The cloth mask should push the edges of the disposable mask against your face.
- (b) **Do not Combine two disposable masks.** Disposable masks are not designed to fit tightly and wearing more than one will not improve fit.
- (c) **Do not Combine a KN95 (or N95) mask with any other mask.** Only use one KN95 (or N95) mask at a time.

#### **References.**

<https://www.cdc.gov/coronavirus/2019-ncov/your-health/effective-masks.html>

<https://www.who.int/news-room/q-a-detail/coronavirus-disease-covid-19-how-is-it-transmitted>.

## FAQs ON COVID-19 TRANSMISSION

### 6. [How does COVID-19 spread among people?](#)

Three important modes of transmission of Covid-19 are as below:-

- (a) **Droplet Transmission.** The virus spreads mainly amongst people through droplet transmission where droplets from infected person are inhaled by a susceptible person through eyes, nose or mouth, who are in close contact with each other, typically within 1 meter (short-range).
- (b) **Air-Borne Transmission.** The virus can also spread through this mode in poorly ventilated and/or crowded indoor settings, where people tend to spend longer periods of time. This is because aerosols remain suspended in the air or travel farther than 1 metre (long-range).
- (c) **Fomite Transmission.** People may become infected by touching surfaces (fomites) that have been contaminated by the virus when touching their eyes, nose or mouth without cleaning their hands.

### 7. [How the scientific consensus about how SARS-CoV-2 is transmitted has shifted over a period of time?](#)

- (a) Although **droplet transmission** is still considered the **main route** of transmission, growing evidence supports the contribution of smaller “**aerosol**” particles in some cases (air-borne) - particularly where **people are spending long periods in poorly ventilated spaces with an infected person**. These can linger in the air and be breathed into the lungs, triggering an infection.
- (b) Meanwhile, the evidence for **fomite transmission has grown less certain**. Several recent studies have attempted to grow coronavirus from swabs taken from real-world settings - such as hospital furniture or hotel rooms occupied by infected people. Although viral RNA could be recovered, the viruses on these swabs were unable to infect cultured cells, suggesting they were no longer viable.
- (c) The **US CDC** says that while it’s possible that respiratory droplets could land on surfaces and objects, and that someone could become infected by touching them, “this is not thought to be a common way that COVID-19 spreads.”
- (d) The **WHO** says “despite consistent evidence as to SARS-CoV-2 contamination of surfaces and the survival of the virus on certain surfaces, there are no specific reports which have directly demonstrated fomite transmission.”
- (e) **This does not mean surface transmission never occurs.** As the WHO points out, it is difficult to disentangle the relative contributions of inhaled droplets and contaminated



surfaces, because people who have come into contact with potentially infectious surfaces have generally also been in close contact with infected individuals.

(f) **If surfaces do play a role in transmission, it's also likely that some like frequently touched surfaces are riskier than others.** Be particularly wary of objects that have been in contact with someone's mouth or nose, such as used facemasks, crockery and cutlery - if you touch them, be sure to wash your hands afterwards. And if someone in your household has COVID-19, or if you're working in a hospital or other workplace where people could be infected, frequently touched surfaces such as door knobs, hand rails, toilet flushes and hand towels might be more likely to harbour the virus, so be mindful of them and ensure they're frequently disinfected.

### References.

1. Trisha G et al. Ten Scientific Reasons in Support of Airborne Transmission of SARS CoV 2. The **Lancet**. Published 15 April 2021.
2. **World health Organisation.** Available at <https://www.who.int/news-room/q-a-detail/coronavirus-disease-covid-19-how-is-it-transmitted>.
3. **CDC.** Available at <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html>
4. **GAVI.** Available at [https://www.gavi.org/vaccineswork/how-important-are-surfaces-transmission-covid-19?gclid=Cj0KCQjw-LOEBhDCARIsABrC0Tnd-uzP348NjE6Fr5VcBdieF59RyuY2-qlqJz6qFQLNZkp5V1NxAaUaAh\\_aEALw\\_wcB](https://www.gavi.org/vaccineswork/how-important-are-surfaces-transmission-covid-19?gclid=Cj0KCQjw-LOEBhDCARIsABrC0Tnd-uzP348NjE6Fr5VcBdieF59RyuY2-qlqJz6qFQLNZkp5V1NxAaUaAh_aEALw_wcB)

## **FAQs ON SARS-CoV-2 VIRUS VARIANTS**

### **1. What causes virus to change to a new variant?**

Mutations are minor changes in the viral genome which occurs due to DNA copying mistake during replication of the virus. The more a virus replicates, as during community transmission, higher are the chances of mutation and creation of new variant.

### **2. How does the variants change the properties of the virus?**

Depending on where the changes are located in the virus's genetic material, the properties of the virus may be affected, such as transmission (for example, it may spread more or less easily) or severity (for example, it may cause more or less severe disease), immune escape (evading immunity), re-infection or effect on vaccine efficacy.

### **3. What impact do the new variants of the COVID-19 virus have on vaccines?**

The COVID-19 vaccines that are currently approved elicit a broad immune response involving a range of antibodies and cells and are expected to provide [some protection against new virus variants](#).

### **4. How can the vaccine variants be detected?**

The variants are usually detected by genomic sequencing available at specialised molecular laboratories e.g NIV and CCMB.

### **5. Do vaccines protect against the virus variants?**

The COVID-19 vaccines are expected to provide at least some protection against new virus variants and any virus change or mutation should not make vaccines completely ineffective. If any of these vaccines become less effective against one or more variants, it will be possible to change the composition of the vaccines to protect against these variants.

### **6. What are the common COVID variants of concern detected and what are their potential concerns?**

(a) As per CDC, SARS-CoV-2 variants are classified as follows:-

(i) **Variant of Interest (VOI)** - **associated** with reduced neutralization by antibodies generated against previous infection or vaccination, reduced efficacy of treatments, potential diagnostic impact, or predicted increase in transmissibility or disease severity.

(ii) **Variant of Concern (VOC)** - there is **evidence of** increase in transmissibility or disease and severity, reduced efficacy of treatments and reduced neutralization by antibodies.

(iii) **Variant of High Consequence (VOHC)** - **clear evidence of reduced effectiveness** relative to previously circulating variants.

(b) Following table is a reference guide to SARS-CoV-2 variants and their potential concerns<sup>2</sup>:-

Variant Name(s) VOI/ VOC/ VOHC	Potential Concerns			VOI/ VOC/ VOHC
	Transmissibility	Virulence (Disease Severity)	Vaccine Efficacy or Immune Evasion	
B.1.1.7, 501Y.V1, VOC-202012/01 (UK variant)	Increased transmissibility	Some evidence of potential increased disease severity	Little to <b>no concern of vaccine efficacy</b>	VOC
B.1.351, 501Y.V2 (South African variant)	Increased transmissibility	No evidence of increased disease severity	Potential for immune escape and possible effect on vaccine efficacy	VOC
P.1, P.2 (Brazilian / Amazonas variants)	Potentially more transmissible	No evidence of increased disease severity	<b>Increased propensity for reinfection</b> , but potential for immune escape unknown	VOC
B.1.525, B.1.526 (New York variants)	Potentially more transmissible	Potentially more virulent	Concerns about vaccine efficacy and immune escape	VOI
P.3 (variant originating in the Philippines)	Potentially more transmissible	No evidence of increased disease severity	Effect on vaccine efficacy or immune escape requires investigation	VOI
B.1.617 (Indian variant – Double mutant)	Potentially more transmissible	Effect on disease severity unknown	Effect on vaccine efficacy or immune escape requires investigation	VOI
B.1.618 (Indian variant – Triple mutant)	Potentially more transmissible	Effect on disease severity unknown	Effect on vaccine efficacy or immune escape requires investigation	VOI

## References

1. World health organisation. Available at [The effects of virus variants on COVID-19 vaccines \(who.int\)](https://www.who.int/news-room/fact-sheets/detail/coronavirus-2019-ncov-variants)
2. CDC Atlanta. Available at [Surveillance for SARS-CoV-2 Variants | CDC](https://www.cdc.gov/media/releases/2020/s111920-covid-variant.html)
3. [Emerging Mutations & Variants | Thermo Fisher Scientific - IN](https://www.thermofisher.com/emerging-mutations)

4. [The S Gene Advantage: TaqPath COVID-19 Tests May Help Early Identification of B.1.1.7 - Ask a Scientist \(thermofisher.com\)](#)
5. [World Health Organisation. Coronavirus disease \(COVID-19\): Vaccines \(who.int\)](#)