

COVID-19: WHAT ARE THE DIFFERENT TYPES OF TESTS?

Relevant for: Developmental Issues | Topic: Health & Sanitation and related issues

Different [methods of testing](#) are being experimented in the country to trace [COVID-19 infection](#).

The Health Ministry has announced that the real-time reverse transcription-polymerase chain reaction or [RT-PCR is the 'gold standard' frontline test](#) for COVID-19. This came into effect after the [rapid anti-body tests](#) showed unreliable results.

[Editorial](#) | [Rapid failures: On antibody testing kits](#)

What is an anti-body test?

[Anti-body tests](#) also known as serological tests, are used to find out the presence of virus in a body. In this method of testing, blood samples are used to find anti-bodies. This process also detects the quantity of antibodies that are produced by the immune system.

It is an indirect method of testing as it cannot find the virus, but can determine if the immune system has encountered it. Anti-bodies can show up between 9-28 days after the infection has set in. By this time, an infected person can spread the disease, if not isolated.

What is an RT-PCR test?

The RT-PCR test is a method of testing by taking a nasal/throat swab from a patient. It involves extracting ribonucleic acid or RNA, which is the genetic material of the virus.

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If it shares the same genetic sequence as SARS-CoV-2 virus, then it is deemed positive. This form of testing can turn negative only if the actual sample does not carry the virus, or if it was not administered properly.

The RT-PCR technology is a fairly expensive method. It requires RNA extracting machines, a laboratory and trained technicians. A minimum of 30 samples are needed to make it economically viable.

Sometimes, it can even take up to 4 hours to test for the presence of virus from one batch. The cost of chemicals and importing elements required for the test is also high. One test can cost a minimum of 4,500.

[COVID-19](#) | [Interactive map of confirmed coronavirus cases in India](#)

On the other hand, anti-body tests are fast and inexpensive. It is portable, administered on-site and provides quick answers. Rapid tests changes colour when particular molecules are detected.

It is the presence of immunoglobulin M and immunoglobulin G in a sample that determines whether the virus is present or not.

These tests can be used to gauge the extent of infection in a certain community. This will help in lockdown relaxations in areas where the virus has not infected large clusters.

[Coronavirus | ICMR unveils rule book on 'large outbreaks'](#)

The [ICMR has also laid out a strategy to use antibody tests](#). However, the plan is to use a combination of both RT-PCR and anti-body tests to establish infection levels.

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