Technologists at the Sree Chitra Triunal Institute for Medical Sciences and Technology (SCTIMST), an autonomous institute under the Department of Science and Technology, Govt of India, have developed two types of nasal and oral swabs and viral transport medium for COVID-19 testing.

2 types of nasal and oral swabs

1. Chitra EmBed flocked nylon swabs
2. Chitra EnMesh, polymeric foam-tipped, lint-free swabs with flexible plastic handles

They have good recovery of viral RNA collected using these swabs and medium. The swabs will be available as sterile, ready-to-use devices.

The swabs are designed for efficiency and comfort in the working environment and help in improved specimen collection with minimum discomfort to patients. Their safe and convenient breakpoint ensures minimal contact of the health worker with the sample during packing.

Viral transport medium

The second innovation, Chitra Viral Transport Medium, is specifically designed to retain the virus in its active form during its transportation from the collection point to the laboratory. Currently, kits containing 50 (3ml/vial) viral transport medium with 50 swabs cost is upwards of Rs 12000/.

Currently, Nasal and throat specimens collected with specially designed swabs are used for the detection of SARS-COV2 by viral gene amplification method, which is necessary for the confirmation of COVID 19.

Proper and adequate specimen collection and its transport in a suitable liquid medium are critical for ensuring good quality and quantity of viral RNA from the sample for testing, as these influence the accuracy of the test.

Centre for disease control and prevention (CDC), the USA, recommends the use of synthetic fibre swabs with plastic shafts, preferably flocked swabs when available.

These two swabs developed with locally available material can reduce import dependency of the materials currently used and can meet the huge demand for them at much lower costs.

What is a nasal swab test?

A nasal (or nasopharyngeal) swab is used to diagnose upper respiratory tract infections, such as whooping cough and COVID-19. It is a quick test that may feel a little uncomfortable but is not painful.

In this test, secretions from the back of your nose and upper throat are collected using a swab. Sometimes, a suction device may be used to gently remove the secretions. This is known as a nasal (or nasopharyngeal) aspirate.
The secretions are sent to a laboratory where they are grown. This makes it easier to identify which viruses, bacteria or fungi are present. The results are sent back to your doctor who will use them to help diagnose what germs could be causing your symptoms.

**How is a nasal swab done?**

To do a nasal swab, a small, soft-tipped swab will be inserted into one or both of your nostrils and twirled a few times until it is covered in secretions. Only a single swab is taken for COVID-19 testing.

The swab will be inserted quite a way in to get to the area that will give the best result. This may be a little uncomfortable but should not be painful.

Note that although a nasal swab is the preferred option for COVID-19 diagnosis, sometimes a throat swab is used.

**What is gene amplification?**

An increase in the number of copies of a gene. There may also be an increase in the RNA and protein made from that gene. Gene amplification is common in cancer cells, and some amplified genes may cause cancer cells to grow or become resistant to anticancer drugs. Genes may also be amplified in the laboratory for research purposes.