

NTU researchers find a way to test for Covid-19 or dengue in just 36 minutes

Singapore innovation.

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Researchers at the Nanyang Technological University (NTU)'s Lee Kong Chian School of Medicine have devised a method to diagnose if someone has Covid-19 or dengue in 36 minutes.

Current testing methods take more than two hours.

This latest testing method was [announced](#) by NTU on Monday, July 27.

Current tests: 2 hours or more

Currently, the most sensitive and accurate way to detect Covid-19 is via a polymerase chain reaction (PCR) technique in a laboratory.

A machine amplifies trace Sars-CoV-2 virus genetic material by copying it over and over again to detect its presence, a process that can take hours.

One step in the process, known as RNA purification, is the main obstacle at the moment for quick results.

This process requires highly trained staff using expensive equipment and chemicals in short supply worldwide now.

The process itself is time-consuming to carry out.

RNA from a swabbed patient needs to be extracted.

Substances in the sample that need to be removed include mucin, a main component of mucus, as they inhibit the PCR test from working.

New test more direct

The new method by the NTU team is known as "direct-PCR".

It uses a series of commercially available enzymes and reagents resistant to inhibitor substances.

These enzymes and reagents are mixed together with patient swab samples in a test tube.

This method allows the RNA purification step to be skipped and to perform the test on the sample directly, cutting short the time taken and costs involved, and still producing accurate results.

The team's method uses a machine known as a portable thermocycler, which can be done outside a lab, and possibly in community healthcare settings by front-line healthcare workers in the future.

The team's method works on the dengue virus as well, with results coming out in just 28 minutes.