

# New antigen test for detecting COVID-19 could help triage patients during the pandemic

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One of the most important tools in stopping the spread of the novel coronavirus, SARS-CoV-2, is rapid, reliable and relatively cheap diagnostic testing at the point of care. Scientists in Europe recently evaluated the frontline capabilities of a commercially available, 15-minute disposable antigen test to detect COVID-19 infections.

Their findings, reported in *Frontiers in Medicine*, suggest the test could be useful as part of a broader triage strategy for slowing down the virus, which has infected more than seven million people and caused about 250,000 deaths as of May 4.

"The detection of viral infections in patients attending primary care centres would allow [healthcare workers](#) to rapidly identify new outbreak foci and define quarantine measures for high viral shedders and/or suspect patients to limit the spread of the epidemic," the authors wrote.

The two-phase study examined the sensitivity and

specificity of the new test during its development stage in the lab and later on using real-world biological samples from more than 300 previously infected patients.

Overall accuracy was 82 percent in the latter setting, with an overall sensitivity (how often a test correctly generates a positive result) of 57.6 percent and an overall specificity (how often a test correctly generates a negative result) of 99.5 percent.

In other words, the test was able to detect COVID-19 infections in about six out of 10 people, and it was nearly perfect in determining when an infection was not present. The test was more sensitive in patients with higher viral loads, positively identifying an infection in about seven out of 10 people.

The authors say the test—quicker, cheaper and less complicated but not as sensitive as reverse transcription-polymerase chain reaction (RT-PCR) assays, which ID the virus based on its [genetic material](#)—could be used to help screen patients during peak periods of the pandemic. Eventually, it could also be especially useful in screening higher-risk populations such as healthcare workers, they said.

The COVID-19 Ag Respi-Strip test was developed by Belgian company Coris BioConcept, which specializes in rapid diagnostic kits for detecting respiratory and gastrointestinal pathogens like viruses and bacteria.

The test from Coris BioConcept is a type of immunochromatographic assay, or lateral flow test, which detects the presence or absence of a particular substance. Most people may be familiar with another type of lateral flow assay—a

[pregnancy test.](#)

In the case of the COVID-19 Ag Respi-Strip, the antigen test uses a sample from a nasopharyngeal swab, which looks like a long, flexible Q-tip that enters through one nostril and extends down the nasal passage close to a person's outer ear.

An antigen test works by looking for proteins on the surface of the virus. Coris BioConcept partly based the test on previous virology research on SARS-CoV-1, which caused the 2002-03 SARS epidemic. In fact, the two are so similar that the COVID-19 Ag Respi-Strip cannot differentiate between SARS-CoV-1 and -2.

The authors estimate the 15-minute antigen test, which can be conducted at point-of-care facilities following a few user-friendly protocols, could reduce the number of laboratory tests using RT-PCR by more than 13 percent.

They also note that the special material, reagents and trained personnel needed to perform molecular tests limits the number of assays that can be done quickly and at scale, especially in [poorer countries](#).

"A major usefulness of the COVID-19 Ag Respi-Strip test would be in the low- and [middle income countries](#), where molecular assays are available in very few laboratories, mainly only in capital cities," according to the authors.

They warn, however, that COVID-19 Ag Respi-Strip is not intended to be a stand-alone [test](#) but used as part of a broader testing strategy.

**More information:** *Frontiers in Medicine*, [DOI: 10.3389/fmed.2020.00225](#) , [www.frontiersin.org/articles/1...fmed.2020.00225/full](#)

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