

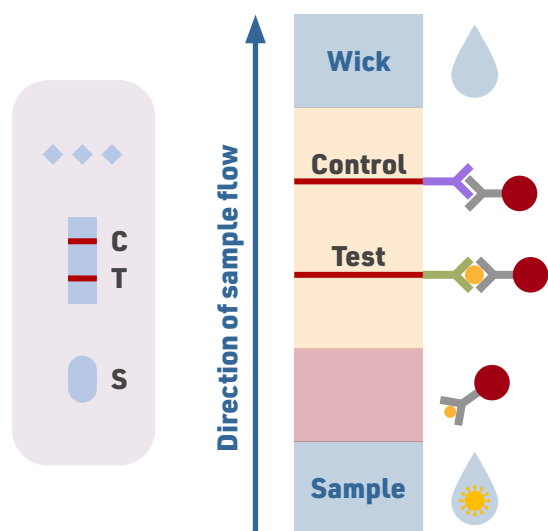
6 NOV
2020

CHEM VS. COVID TIMELINE

UK pilots mass testing using lateral flow tests

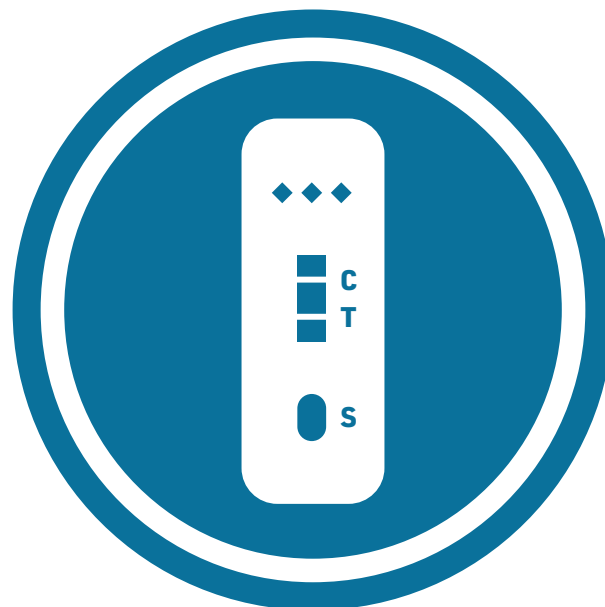
How lateral flow tests work

Lateral flow tests use a sample collected with a swab. The sample is mixed with a solution then added to the test device. If the virus is present, antibodies attached to gold nanoparticles in the conjugate pad of the test device bind to it.

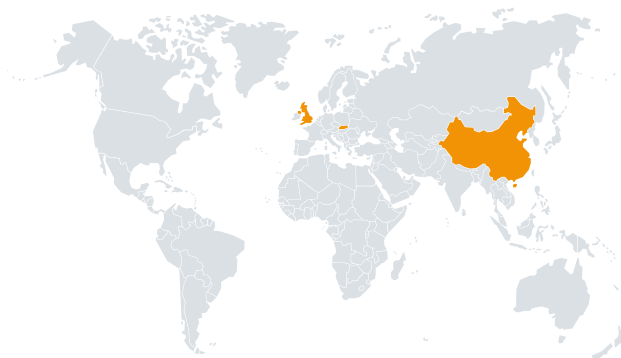


Virus Antibody Gold nanoparticle

At the test line, immobilised antibodies also bind to the virus, and the gold nanoparticles cause a red line to appear. Unbound antibodies bind at the control line to confirm the test has worked correctly.



As the pandemic progressed, quicker ways of testing for the SARS-CoV-2 virus were developed. Lateral flow tests were used for mass testing in late October in Slovakia, and subsequently in the UK.



How did it help?



Preventing transmission
Lateral flow tests helped to identify asymptomatic infections, allowing more infected people to self-isolate and reducing the spread of COVID.



Faster and cheaper
Lateral flow tests are cheaper than the gold standard PCR tests. They don't need to be processed in a lab and give results in around 30 minutes.



Easier mass testing
Some countries have a limited capacity for carrying out PCR testing, so the availability of rapid antigen tests can support their testing efforts.

How accurate are the tests?

Lateral flow tests give positive results for infected people with high viral loads, but may miss infections with lower viral levels. Repeated and frequent testing can partly overcome this limitation.

Lateral flow tests*

76.8%
SENSITIVITY

Sensitivity measures the correct production of positive results.

99.7%
SPECIFICITY

Specificity measures the correct production of negative results.

* PHE figures for Innova SARS-CoV-2 antigen rapid qualitative test.
† ONS estimated figures for PCR tests (based on a range of studies).

PCR tests†

85-98%
SENSITIVITY

~100%
SPECIFICITY

Other mass testing methods

In addition to lateral flow tests, rapid antigen tests have been developed which work in a similar way to PCR tests. Another method used for mass testing in China involved swabs from multiple patients being grouped together and tested, reducing the total number of tests required.