Fact Sheet: Types of COVID-19 testing

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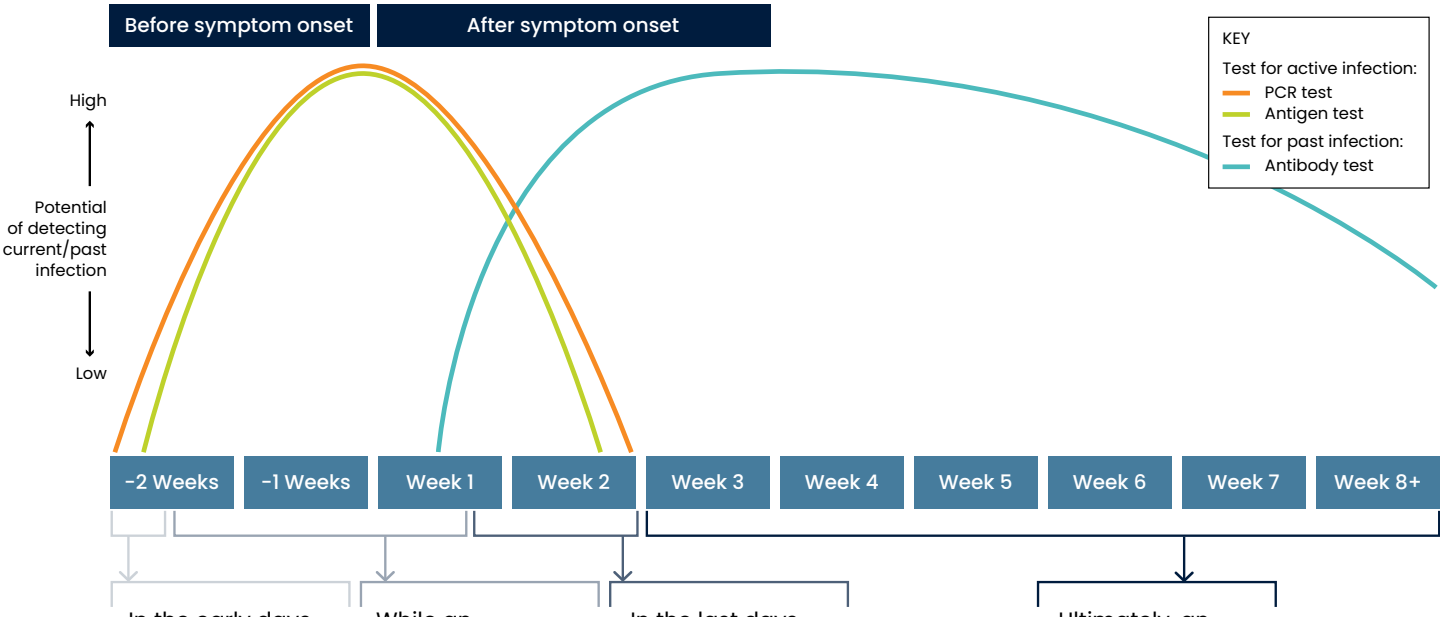
Testing is an essential part of reducing the spread of COVID-19 and minimizing the health and economic impacts of the pandemic. Each of the 3 types of COVID-19 testing—PCR*, antigen, and antibody—play a different role in revealing a person's current or past COVID-19 infection.

The graph below[1] shows each test type and when it is used during the timeline of a COVID-19 infection.



In the early days of an infection, before symptoms appear, an individual may still test negative for COVID-19.

PCR and antigen tests have a low potential to detect the virus.

While an individual may or may not have symptoms at this point, they have an active infection. They have not developed antibodies yet.

PCR and antigen testing are likely to detect the virus for diagnosis of infection.

In the last days of active infection, an individual will start to develop an immune response with antibody production.

PCR and antigen testing may still detect the virus, but an antibody test may also be used to determine an immune response to the infection.

Ultimately, an individual will enter the recovery stages of their infection.

PCR and antigen test will likely produce negative results, but antibody testing may indicate an immune response to the infection.

Visit **ACTagainstCovid.com** for more information.

*PCR is one of several types of molecular tests to detect SARS-CoV2 RNA that have received FDA Emergency Use Authorization (EUA).

1. Adapted from Abbott SARS-CoV-2 Slide Rule: https://www.corelaboratory.abbott/us/en/offerings/segments/infectious-disease/sars-cov-2-clinician-tools#slide-rule. Accessed February 5, 2021.

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Learn about the different methods of testing that help combat COVID-19.

	Diagnostic (viral) tests show current infection		Antibody (serology)tests show past infection
Use	PCR TEST PCR (polymerase chain reaction) or molecular nucleic acid amplification tests (NAAT) are primarily used as diagnostic tests for symptomatic patients or those with known or suspected exposure.	ANTIGEN TEST Antigen tests are primarily used to rapidly screen large numbers of people and can be a reliable first test for patients exhibiting symptoms. They can identify presymptomatic and asymptomatic carriers of SARS-CoV-2 who may be contagious.[2]	ANTIBODY TEST Antibody tests are often used for surveillance to detect the prevalence of COVID-19 in a given population. They can also provide important information about a patient's medical history and inform ongoing care.
How they work	PCR tests work by detecting fragments of viral RNA in swabbed cells, usually from the nose or throat, or saliva.	Antigen tests work by detecting viral proteins in swabbed cells from the nose or throat.	Antibody tests use a blood sample to look for antibodies against SARS-CoV-2 and determine if there was a previous infection.
Reliability	PCR tests are considered the "gold standard" and are even more reliable than antigen tests, particularly in ruling out infection.	Positive antigen tests on average have a 98.5% accuracy rate, while negative tests average a 97% accuracy rate.[†] Choosing high-sensitivity antigen tests from reputable suppliers is critical for achieving low false-negative rates.	Accuracy of antibody tests depends on the type of test used. Choosing high-specificity antibody tests from reputable suppliers is critical for achieving low false-positive rates.
Turnaround time	Same day to one week. PCR tests are usually processed in a lab rather than on-site.	Often rapid (15-30 mins). Many antigen test results are processed at the point-of-care.	Same day to 3 days. Antibody test turnaround time varies depending on test location.
Costs	$ $ PCR tests are more expensive than antigen tests.	$ Antigen tests are more affordable than PCR tests.	$ Antibody tests are typically priced similarly to Antigen tests.
What they can tell you	+ A positive PCR test means the person is currently infected with COVID-19. – A negative PCR test means the person was most likely not infected at the time of the test.	+ A positive test means the person is currently infected with COVID-19. – A negative antigen test means viral proteins were not detected. However, if there are symptoms or suspected exposure, a negative result should be followed by a PCR test.	+ A positive antibody test means the person was previously infected with SARS-CoV-2, and their immune system has developed antibodies in response to the infection. – A negative antibody test means the person probably did not have a recent COVID-19 infection.
What they can't tell you	A PCR test does not inform about previous infection or immunity.	An antigen test does not inform about previous infection or immunity.	+ A positive antibody test does not confirm immunity. – A negative antibody test does NOT: • rule out past infection, as there is evidence that antibodies become less detectable over time • rule out an active infection, as their immune system may have not had time to create antibodies yet
Benefits to overall testing strategy	As the gold standard, a PCR test can help a person rule out or confirm an active infection.	Antigen tests can be easily scaled to alleviate the strain on overburdened laboratories by reducing the number of time-consuming PCR tests needed.	Antibody tests can free up congestion in lab processing by prioritizing screening and diagnostic testing for patients who do not have antibodies.

[†] Information as of October 2020 and subject to change. For more information on COVID-19 testing, please visit https://www.cdc.gov/coronavirus/2019-ncov/testing/index.html.

2. US Food and Drug Administration. COVID-19 test uses: FAQs on testing for SARS-CoV-2. https://www.fda.gov/medical-devices/coronavirus-covid-19-and-medical-devices/covid-19-test-uses-faqs-testing-sars-cov-2. Updated December 10, 2020. Accessed February 12, 2021.