

Tests for COVID-19: Molecular, Antigen, and Antibody

Types of COVID-19 Tests: **Molecular**, **Antigen**, and **Antibody**

The **molecular test** (nucleic acid amplification test [NAAT] or RT-PCR) is used to definitively identify the COVID-19 virus by detecting the presence of the SARS-CoV-2 ribonucleic acid (RNA) within the sample collected.

An **antigen test** detects the presence of specific proteins (nucleocapsid protein antigen from SARS-CoV-2) that are on the surface of the virus. Results should only be considered diagnostic during early stages of an active infection.

Note: Performance of these tests were only evaluated on symptomatic patients within 5-7 days from the onset of symptoms. For more information, please see page 2, under "Limitations."

An **antibody test** measures the expression of antibodies which may indicate prior exposure to SARS-CoV-2. The IgG antibody test option provides insight into an individual's immune response and recent exposure to the SARS-CoV-2 virus, but is not intended to diagnose an active infection. Before receiving IgG testing, it is recommended to wait at least 10 days after potential exposure or onset of symptoms, to allow for the development of IgG antibodies.

SARS-CoV-2 Algorithm for **Molecular** and **Antigen** Test Comparison

		Molecular	Antigen
<p>Sonora Quest Laboratories has been performing COVID-19 diagnostic testing since March 2020. By forming a number of strategic partnerships with local community organizations and Arizona state agencies, we are able to serve our communities and most vulnerable populations in Arizona. Thanks to these partnerships, Sonora Quest has been able to increase the number of diagnostic tests per day for Arizona to help monitor and fight the COVID-19 pandemic.</p>	<i>Asymptomatic</i>	<p>Preferred method SARS-CoV-2 (COVID-19) NAAT</p>	<p>Not Recommended COVID-19 antigen tests are only authorized by the FDA for symptomatic patients. COVID-19 antigen testing should not be used as a standalone test to diagnose or screen, or as a surveillance tool in presymptomatic and asymptomatic populations.</p>
	<i>Symptomatic</i>	<p>Preferred method SARS-CoV-2 (COVID-19) NAAT</p> <p>Note: Due to similar symptoms shared between COVID-19 and Influenza/RSV, the molecular testing of these viruses is recommended if prevalent in the community.</p>	<p>Alternative Method COVID-19 Antigen Test with Reflex to Molecular test*</p> <p>If positive = Result can be released</p> <p>If negative = Reflex to a highly sensitive molecular test*</p> <p>Note: A second swab collection is required for the molecular reflex test.</p>

*A negative result from an antigen test should be considered presumptive until confirmed by a highly sensitive molecular test.

Resources:

- Find a location for sample collection: [SonoraQuest.com/Find-a-Location](https://www.SonoraQuest.com/Find-a-Location)
- Self-order COVID-19 testing through My Lab ReQuest™: [SonoraQuest.com/OrderCovid](https://www.SonoraQuest.com/OrderCovid)
- Check out SQL COVID-19 resources: [SonoraQuest.com/Coronavirus](https://www.SonoraQuest.com/Coronavirus)
- See SQL's up-to-date testing statistics: [SonoraQuest.com/CovidMedia](https://www.SonoraQuest.com/CovidMedia)



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What's the Right Test for You? **Molecular**, **Antigen**, or **Antibody** Testing

	Molecular Test	Antigen Test	Antibody Test
Also known as ...	Diagnostic test, viral test, molecular test, NAAT, RT-PCR test (PCR)	Rapid diagnostic test, enzyme immunoassay (EIA), enzyme-linked immunosorbent assay (ELISA), immunochemiluminometric assay	Antibody test, serological test, serology, blood test, serology test, EIA , ELISA
What it can do ...	Diagnose whether or not you have an active coronavirus infection at the time of the test. Provides high sensitivity and specificity rates with molecular being 10,000 to 100,000 times more sensitive than antigen tests.	Diagnose whether or not you have an active coronavirus infection at the time of the test. Note that antigen tests are more likely to miss an active COVID-19 infection compared to molecular tests. Your healthcare provider may order a molecular test if the antigen test shows a negative result, but symptoms of an active infection are present.	Show if you had COVID-19 or were infected with the coronavirus in the past. This test should not be used to determine an active infection.
How the sample is taken ...	Nasopharyngeal (NP) swab is currently the preferred collection method. Anterior nares (nasal) or oropharyngeal (throat) swabs are also acceptable. Lower respiratory specimen tests, including bronchial lavage/wash, or sputum/tracheal aspirate samples may also be submitted.	Nasal and/or NP collections, depending on the test	Blood samples (should be collected at least 10 days after onset of symptoms or known exposure)
Testing methodology is ...	NAAT/RT-PCR	Immunoassay	ELISA
The limitations are ...	None; molecular testing is the gold standard for the detection of SARS-CoV-2.	Performance of these tests were evaluated on symptomatic patients within 5-7 days from the onset of symptoms. Testing outside the time period stated above may lead to a false negative. For additional details please review the manufacturer's instructions for use.	Detection of SARS-CoV-2 antibodies indicates an individual has been exposed to COVID-19 and mounted an immune response. There are limited data on whether the presence of antibodies confers immunity and if so, for how long. Results of these antibody tests should primarily be used as a surveillance test.
Is another test needed ...	This test is highly accurate and usually does not need to be repeated.	Positive results are accurate, but negative results may need to be confirmed with the submission of a molecular test.	Negative results indicate that a detectable level of SARS-CoV-2 IgG has not been developed. It does not definitely rule out a previous SARS-CoV-2 infection, particularly in those who have recently been in contact with the virus. Follow-up molecular testing should be considered to rule out active infection in these exposed individuals. Equivocal results may occur before an adequate antibody level has developed or may be a cross-reaction. Consider retesting in 1-2 weeks, if clinically indicated.
Is testing available at Sonora Quest in Arizona?	Yes	Not at this time	Yes
Sonora Quest test codes	907080 – SARS-CoV-2 RNA (COVID-19), Qualitative, NAAT	N/A	907097 – COVID-19 SARS-CoV-2 Antibody IgG
SQL published testing turnaround time*	2-4 days; SQL is reporting most results within 24-48 hours*	N/A	1-4 days*
Available in Arizona at Sonora Quest locations for collection?	Appointment options for observed nasal swab collections are available at select locations for patients based on symptom status. Visit SonoraQuest.com/Appointments for details and scheduling.	N/A	Sonora Quest Patient Service Center locations, excluding locations inside of Safeway stores, can provide COVID-19 antibody testing.
Available via Sonora Quest's My Lab ReQuest?	Yes. Visit SonoraQuest.com/OrderCovid for details.	N/A	Yes

*Please note: Testing turnaround times may vary based on testing demand and supplies. Patients who believe they may have an active COVID-19 infection should contact their healthcare provider to obtain an order for molecular testing. For information on collections for large groups, contact Sonora Quest at SQLMarketing@SonoraQuest.com.