

# COVID-19

## What you need to know

First identified in December 2019 in Wuhan, Hubei, China, coronavirus disease, commonly known as COVID-19, is an upper respiratory infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). By January 30<sup>th</sup>, 2020, the World Health Organization (WHO) declared the outbreak a public health emergency of international concern and on March 11<sup>th</sup> it was declared a pandemic.<sup>1</sup>

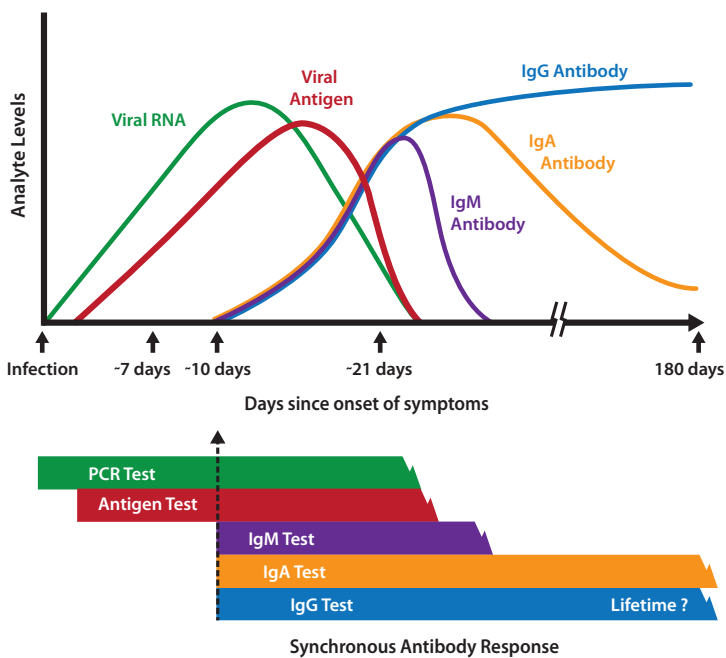
### What is the difference between viral and antibody tests?

#### Viral test<sup>2</sup>

- Indicates if you are currently infected.
- Accomplished through a polymerase chain reaction (PCR) or antigen test.
- To be used if you are currently experiencing symptoms.

#### Antibody test<sup>3</sup>

- Indicates if you have been previously infected.
- Antibodies are developed as a human response to infection and every person develops antibodies at a different rate.
- To be used if you have previously experienced symptoms OR believe you were exposed to COVID-19.



### Biomarkers and testing methods for COVID-19<sup>4</sup>

This graph depicts analytes for the detection of COVID-19 infection or exposure. Viral RNA and antigen appear first showing active virus/current infection. Antibodies appear later showing past exposure or infection.

Type	Test description	Test locations	Result value	Sample types
<b>Viral</b>	<b>PCR / NAAT test</b> Detects nucleic acid or part of the viral genome	Laboratory Point-of-care	Infected vs. not infected Can lead to treatment and care	Nasopharyngeal swab (NP) Nasal swab Oropharyngeal swab (OP) Saliva / oral fluid
<b>Viral</b>	<b>Antigen test</b> Detects an “outer core” protein	Laboratory Point-of-care	Infected vs. not infected Can lead to treatment and care	Nasopharyngeal swab (NP) Nasal swab Oropharyngeal swab (OP) Saliva / oral fluid*
<b>Antibody</b>	<b>Antibody test</b> Detects antibodies, also known as immunoglobulins (e.g., IgM, IgG) 1-3 weeks after infection	Laboratory Point-of-care	Indicates immune response to past infection (by indicating the presence of IgM and / or IgG)	Whole blood Serum Oral fluid*

**For more information on COVID-19 test interpretation:**

CDC Guidance on Interpreting COVID-19 Test Results: <https://www.whitehouse.gov/wp-content/uploads/2020/05/Testing-Guidance.pdf>.

**Why use oral fluid as testing sample?**

- Specimen is easy to collect.
- Does not require close contact with people and minimal use of personal protective equipment (PPE).
- No biohazard waste and no need for Sharps™ containers.
- Proven to be an accurate specimen type for COVID-19 testing.<sup>5,6</sup>
- Used for antibody detection for decades.
- Easy-to train collection techniques, allowing for use in unsupervised settings (pending FDA approval).

**Signs and Symptoms**

Symptoms of COVID-19 appear within 2-14 days after exposure. The most common symptoms are listed as cough and/or shortness of breath, or at least two of the following: fever, chills, repeated shaking with chills, muscle pain, headache, sore throat, new loss of taste or smell.<sup>7</sup> **COVID-19 can mimic other respiratory syndromes.**

**References**

- 1 <https://www.cdc.gov/coronavirus/2019-ncov/faq.html#Coronavirus-Disease-2019-Basics>
- 2 <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/testing.html>
- 3 <https://institute.global/tony-blair/path-mass-testing> (p 24)
- 4 Long, et al., Antibody responses to SARS-CoV-2 in patients with COVID-19, <https://www.nature.com/articles/s41591-020-0897-1>
- 5 Randad, et al., COVID-19 serology at population scale: SARS-CoV-2-specific antibody responses in saliva, <https://doi.org/10.1101/2020.05.24.20112300>
- 6 Wyllie, et al., Saliva is more sensitive for SARS-CoV-2 detection in COVID-19 patients than nasopharyngeal swabs, <https://doi.org/10.1101/2020.04.16.20067835>
- 7 <https://thenativeantigencompany.com/why-we-need-antigen-and-antibody-tests-for-covid-19/>

\*Oral fluid based COVID tests are currently in development.

