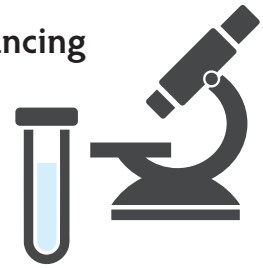
SARS-CoV-2 Testing

The degree to which people need to enact and comply with physical distancing measures is directly related to the ability to detect and contain the virus. This has led to an enthusiastic movement by the government, healthcare providers and the public to approve and utilize SARS-CoV-2 testing as it becomes available, often before it has met the scientific scrutiny it warrants.



Disease spread

The basic reproduction number, R_0, describes the rate of spread of a disease in a population.

$R_0 < 1$	$R_0 > 1$
Spread of disease is slowing	Spread of disease is increasing

Current testing methods

There are multiple technologies to test for SARS-CoV-2

- **Direct viral testing by molecular techniques**
- **Nucleic acid amplification via polymerase chain reaction (PCR)**
- **Isothermal amplification**
- **Serological testing**

As the testing for SARS-CoV-2 is so new to medical testing, it is not yet a perfect diagnostic tool. In addition, different tests have different purposes. The results that are obtained from these tests have varying degrees of accuracy, reliability and relevance.

Testing accuracy

Accuracy is often described by a test's sensitivity and specificity

Highly sensitive tests → Detect a higher number of positive results (true positives)

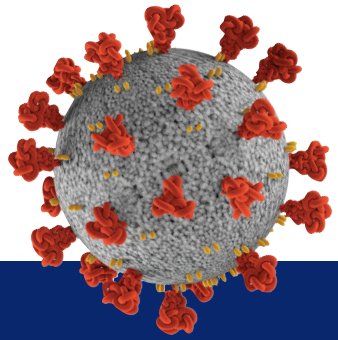
Highly specific tests → Rule out results that are not positive (true negatives)

Factors affecting testing reliability and relevance

Accuracy of test  **Probability of result**  **High prevalence of disease in population** 

Conclusion

The current accuracy and believed prevalence of SARS-CoV-2 in the U.S. population makes individual screening testing of OMS patients to be of low utility and benefit. There is significant benefit to large-scale testing for epidemiologic and contact tracing purposes.



Review the White Paper on SARS-CoV-2 Testing for more information.