COVID-19 Tests in Canada

Testing for COVID-19 supports public health initiatives that are intended to slow the spread of COVID-19 and aids in ongoing vaccination efforts.

In Canada, there are 3 approved methods for testing for COVID-19:

1. Nucleic acid test
2. Antigen test
3. Serological test

Available tests are authorized for use by Health Canada, and most currently approved tests must be performed by or under the supervision of a health-care professional, typically in a health-care setting (such as a pharmacy or public health testing site). Testing technology and policies are evolving, and requirements may change to facilitate self-testing.

Many COVID-19 tests are described as "rapid," meaning test results are available in a short amount of time (15-60 minutes). Because these tests do not usually require laboratory processing to obtain results, many rapid tests can be administered in point-of-care scenarios where individuals may need to be screened quickly. Several provinces have authorized pharmacists to administer rapid antigen tests at the point of care. Most antigen detection (i.e., for current infection) and antibody detection (i.e., for past infection) tests use rapid technology.

Most nucleic acid tests require processing at a laboratory, and it may take anywhere from 1-4 hours to obtain results. Processing time may be longer where patient volume is higher. Polymerase chain reaction (PCR) testing is considered to be the gold standard for nucleic acid testing, and individuals who screen positive via rapid antigen testing will typically have these results confirmed by a nucleic acid test. Nucleic acid tests are typically used in public health settings such as mass COVID assessment centres. Pharmacists in a small number of provinces are authorized to collect samples for laboratory nucleic acid testing. A growing number of new nucleic acid tests are also being developed using rapid technology.

	Nucleic acid	Antigen	Serological
Known as	**Molecular, RT-PCR**	**Typical "rapid test"**	**Antibody test**
Intended use	Detects current COVID-19 infection	Detects current COVID-19 infection	Detects past COVID-19 infection
Analyte detected (what the test looks for)	Viral genetic material (mRNA)	Viral surface proteins	Antibodies against the virus
Collection method	Nasal swab, throat swab, sputum, saliva	Nasal or throat swab	Blood draw or prick
When detectable	**1–4 days** after symptom onset	**1–5 days** after symptom onset	**1–3 weeks** after symptom onset
Sensitivity	Varies, but generally high	Moderate	Varies, but generally high
Specificity	High	High	High
Turnaround time	Most results in 1–4 hours	Most results in 15–60 minutes	Most results in 15–60 minutes
Strengths	• High sensitivity and specificity • Considered the gold standard for detection of COVID-19	• Rapid results (some immediate) • Relatively low cost • Can be used at point-of-care (e.g., high risk congregate settings to prevent transmission, etc.)	• High sensitivity and specificity • Applications in public health (e.g., herd immunity, etc.), treatment, vaccine effectiveness and return-to-work protocol
Limitations	• Often requires analysis in a laboratory • Result time may be limited by laboratory capacity • Moderate cost	• Moderate sensitivity (negative results less accurate) • Often requires confirmation by a molecular test	• Does not detect current infection • Moderate cost
Where sample is collected and analyzed	Typically in public health settings	Available in multiple point-of-care settings	Typically in public health settings

For more information related to COVID-19 testing by pharmacists in Canada, please refer to CPhA's map and chart entitled Rapid Point-of-Care Antigen Testing and Specimen Collection for PCR Tests by Pharmacists.

Sensitivity is the ability for a test to produce a positive result in a person with a COVID-19 infection (also known as true positive).

Specificity is the ability for a test to produce a negative result in a person without a COVID-19 infection (also known as true negative).

References:
- Government of Canada (https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/medical-devices/testing.html)
- Centers for Disease Control and Prevention (https://www.cdc.gov/coronavirus/2019-ncov/lab/resources/antigen-tests-guidelines.html)
- American Pharmacists Association (https://aphanet.pharmacist.com/sites/default/files/audience/APhACOVID-19TestingBasics1120_web.pdf)

April 2021

Canadian Pharmacists Association / Association des pharmaciens du Canada