Rapid antigen tests for SARS-CoV-2

Michael Liu AB, Rahul K. Arora BHSc, Mel Krajden MD

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1 Rapid antigen tests (RATs) for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are point-of-care immunoassays that are moderately sensitive and highly specific

RATs detect SARS-CoV-2 antigens in samples from the upper respiratory tract and provide results in 15–30 minutes. Test sensitivities range from 30% to 80%, and specificities range from 98% to 100%, relative to reverse transcription polymerase chain reaction (RT-PCR).[1]

2 RATs adequately identify people who are infectious

RATs can detect infection in people with viral loads that are associated with SARS-CoV-2 transmission, regardless of whether they are symptomatic or not.[2] For example, the Panbio RAT is about 97% sensitive in people with high viral loads (RT-PCR amplification cycle threshold needed to detect RNA < 25) and 42% sensitive in those with low viral loads (cycle threshold > 25).[3]

3 RATs are useful in screening programs to break chains of transmission

People who have asymptomatic or presymptomatic infections may account for more than half of SARS-CoV-2 transmissions, but are often ineligible for diagnostic testing unless they have been in close contact with a confirmed case.[4] Screening programs that use RATs target people who are asymptomatic to rapidly identify those with high viral loads, which is especially important for preventing onward transmission in high-risk and congregate settings.[5,6]

4 Pretest probability should guide interpretation of RAT results

For people with higher pretest probability of SARS-CoV-2 infection (e.g., people who are symptomatic or have had recent exposure, or in settings with high prevalence of infection), positive RAT results should be managed as confirmed cases. Results could be falsely negative in people with low viral loads and should be confirmed by RT-PCR. For people with lower pretest probability, positive RAT results should initially be managed as confirmed cases, with results verified by RT-PCR to rule out false-positive results. Negative results in this group could mean either no infection or an infection with a low viral load, so people should continue usual public health measures to avoid acquiring and transmitting infection.

5 Training test administrators in sample collection and testing procedures improves test accuracy and safety

Proper training in sample collection improves test sensitivity and accuracy.[6] Personnel must also be trained in the use of personal protective equipment and appropriate biosafety to prevent infection while obtaining and handling samples.

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Affiliations: Harvard Medical School (Liu), Boston, Mass.; Unity Health Toronto (Liu), St. Michael's Hospital, Toronto, Ont.; Institute of Biomedical Engineering (Arora), University of Oxford, Oxford, UK; Department of Community Health Sciences (Arora), University of Calgary, Calgary, Alta.; Department of Pathology and Laboratory Medicine (Krajden), University of British Columbia; BC Centre for Disease Control (Krajden), Vancouver, BC.

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Correspondence to: Mel Krajden, Mel.Krajden@bccdc.ca