Beth Israel Lahey Health

Frequently Asked Questions for Patients: Serology (Antibody) Testing for COVID-19

1. **What is serology (antibody) testing?**
   Serology refers to measurement of the antibodies present in a person's blood (serum). Antibodies are specialized proteins produced by the body's immune system that bind to foreign material, such as invading germs. For some infections, measurement of antibodies is easier than direct detection of the germs themselves.

2. **What antibody testing is currently available for COVID-19?**
   When responding to a new infection, the immune system tries to quickly produce a "first draft" of useful antibodies, called Immunoglobulin M (IgM). As time goes on, these antibodies are fine-tuned to become a more effective and long-lasting form, IgG. In general, IgG antibodies develop a week or two after IgM. Antibody IgG tests have recently become available from a number of companies. However, most of these tests have not yet been validated for accuracy.

3. **How good is the test?**
   The ability of the test to determine whether someone has been exposed to the virus depends upon timing related to that exposure. If the test is performed in the first week after being exposed to the virus, the test can only detect antibody about 40% of the time. As the duration from exposure (or symptom onset, if symptoms developed) increases, so does the ability to detect IgG antibody, rising to more than 95% after two weeks.

4. **What are the current clinical indications for testing?**
   Serology (antibody) testing only lets us know if someone was exposed to COVID-19 at some prior time. Generally, it is not a useful test for diagnosis. Therefore, the main utility of the serology test for now is for public health to help determine how common COVID-19 is in the community and to aid in contact tracing when cases have occurred.

5. **What is the difference between the antibody (blood) test and PCR (nasopharyngeal) test in diagnosing COVID-19?**
   A COVID-19 antibody test of a person's blood measures whether they have been exposed to the virus (called SARS-CoV-2) at some time in the past, when the person's immune system would have responded by producing antibodies to fight the virus. The kind of antibodies (IgG) detected by current tests generally arise around two weeks after initial exposure to the virus, and persist for at least a few months thereafter.

   In contrast, Polymerase Chain Reaction (PCR) is a method for determining whether viral genetic material is present in the sample (typically, a swab obtained through the nose to the back of the throat). PCR is usually able to detect the presence of the virus around the time someone starts to have symptoms, and fades away after a couple of weeks (Although some people do continue to have detectable PCR tests for several weeks after their symptoms have resolved. It is unknown what that means in terms of whether they remain contagious.)

6. **How can I get tested?**
   Testing can be ordered by your health care provider if they feel that it is clinically useful. Once ordered, you can have your blood drawn at any BILH lab and the test will be run at either a BILH hospital lab or sent out to a commercial lab, such as Quest Diagnostics. Results are generally available to your provider in about three days.

7. **If my test shows that I have antibody to SARS-CoV-2, am I protected?**
   It is still too early in the epidemic to know whether infection conveys long-term protection from infection with COVID-19. While there have been reports of re-infection, these appear to be uncommon. Over the coming year, follow-up of people who have recovered from infection but remain at risk of repeat exposure to the virus (such as health care workers) should give a better sense of how much protection antibodies provide.

8. **If the test doesn't prove that I am immune, why should I get tested?**
   Antibody testing may be very useful to help the Department of Public Health track the epidemic, but is not necessary for most people for their own health at this time. Testing may be helpful for people with persistent respiratory symptoms such as shortness of breath where PCR testing has been negative. In this case, your health care provider may order antibody testing to help determine whether further work-up is needed for other possible causes of the symptoms.

9. **Will going to a test site and waiting in line to get tested put me at risk of acquiring COVID-19 if I don't have it already?**
   Social distancing, wearing a mask or cloth face covering, and frequent hand hygiene, with either hand sanitizer or soap and water, can reduce the risk of infection at testing centers to extremely low levels. Please follow your doctor's recommendations regarding whether to come to a site for testing.