



AGING TODAY

Frequent Tests and Rapid Results



By Bob Roth, Managing Partner of Cypress HomeCare Solutions

I don't feel sad that my father celebrated his 85th birthday last month with 4 other vaccinated family members. We know all too well that the pandemic prevented so many from reaching that milestone. When I asked my Dad about reaching a special birthday during a once in a century pandemic, he gave a wry smile and said without skipping a beat, "I think I'll miss the next one."

Experts predict, however, that in the next few decades we are likely to see other pandemics. The lessons we have learned should not only serve as a roadmap for the next pandemic, but ideally should allow us to react and pivot in the present. Unfortunately, with one full year in the rearview mirror, we have not adopted rapid antigen testing as the best public health strategy to control viral transmission.

I have been waiting for rapid antigen testing to emerge as a strategy to keep case rates down since the idea was introduced in July of 2020. My trusty research assistant (wife, Susie) brought this to my attention with numerous articles citing the research by Dr. Michael Mina, assistant Professor of Epidemiology of the Harvard T.H. Chan School of Public Health.

To put the science simply and succinctly, the two tests that are used to confirm a coronavirus infection are the antigen test and the PCR test. The antigen test looks for specific proteins to confirm the presence of SARS-CoV-2. The PCR (polymerase chain reaction) test looks for RNA. RNA is the genetic material that instructs the virus to make these proteins.

The most important elements of testing to guide our behavior are rapid results and test frequency. The PCR test has historically taken 2-5 days to get results. The rapid antigen tests give results in about 15 minutes. The PCR requires a lab to generate the results. The antigen test can be performed at home. So far, I am probably not telling you anything you didn't previously know.

You may recall hearing terms like "gold standard" and test sensitivity. If you have prior knowledge of which tests fall into these categories, be open minded to the following information. The rapid antigen test can tell you that you are able to spread the virus at the exact moment you take the test. The test result is positive only if you have enough virus present in your nose to spread it.

The PCR test is positive if you have any amount of RNA. It is positive when you are incubating an infection, when you have enough virus to transmit an infection, or when your infection resolves, and the RNA hangs around for up to 6 weeks. So, how do you know if you are contagious if you have a positive PCR test? You don't. You could have the tiny remnants of RNA, which the PCR test picked up from an asymptomatic infection 4 weeks ago.

Is the goal of testing to find every shred of RNA? No, the public health goal is to stop the spread of viral transmission. The "gold standard" PCR test has the unintended consequence of isolation and quarantine to those not even contagious. Loneliness resulting from isolating our seniors in communal living settings and financial hardship due to lost wages are also public health issues.

If your PCR test is a true positive, you are carrying the virus and able to transmit the disease, it is very likely that due to delays in getting the results, you unknowingly carried the virus to every errand, meeting, and personal encounter.

The reality is that to bring infection rates down and rebuild our economy we need contagiousness tests such as the rapid antigen tests. While the PCR test has been the gold standard of clinical diagnosis, it is undermining our interests to stop the spread of this deadly virus.

This begs the question: Is what is good for medicine always good for public health? Dr. Mina and many epidemiologists say no and are urging a reboot. This pandemic requires a view through a public health lens.

Can a PCR test still be the gold standard if it doesn't identify when the person has a transmissible virus? If a test is so sensitive that it picks up RNA from a past infection it makes it difficult for us to open back up our economy and schools. A rapid antigen test is the best public health surveillance tool we have. It identifies those infected and able to transmit at the exact moment that you test. Think about what that extra layer protection would mean when you paid a visit to your 85-year-old Dad?

Dr. Mina proposes that the ideal way to get our lives back is to have very simple rapid antigen paper strip tests in quantities large enough to test 2-3 times per week. They must also be very inexpensive to encourage participation.

The Biden Administration has signaled that rapid antigen tests would be rolled out with the testing strategy for the United States. In part 2 of this series, we will examine how close they are to making this plan a reality. Stay tuned.

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