

Antibody testing is not a panacea

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Many people are hoping that antibody testing will help us get back to normal by sorting the population into two groups: those who are vulnerable to COVID-19 and those who are “immune.”

Unfortunately, this is not the case.

At this point, antibody tests — the rare ones that are reasonably reliable and accurate at detecting antibodies that are *specific* to COVID-19 — are mainly good for two things: Helping epidemiologists study the spread of COVID-19 across populations, and helping doctors and scientists develop a vaccine.

Antibody tests can’t tell us a lot about immunity yet, because we need more understanding about how the body responds specifically to COVID-19 and what that response means in the long-term.

Let’s start at the beginning. Immunology is the study of the immune system: Our natural defenses against physical, chemical and biological agents. Some parts of the immune system are easy to understand. Your skin and the mucus in your nose, for instance, provide important barriers against germs.

It gets more complicated on a cellular level. We have white blood cells in our blood stream that respond to invaders, including bacteria and viruses (aka “pathogens”). If we think about your immune response like a war, these are your “soldier” cells. Our blood stream also contains about 30 different types of chemicals that are activated in response to a foreign invader. They circulate inactive until there is a recognized threat, and then they are activated one at a time, in a cascading effect, tipped off by each other’s signals.

These soldier cells can attack pathogens in a variety of ways. Some coat a pathogen, allowing another type of immune cell to engulf and kill it. Others create holes in pathogens, essentially blowing them up.

All of this is a part of our initial war effort. The part of our immune system that creates antibodies is separate — think of it as the body’s “intelligence” sector. The main mission of our intelligence cells is to produce an antibody that binds to the pathogen, marking it as an enemy so the immune system can destroy it.

After our intelligence cells have created an antibody, they sometimes create memory cells that recognize the pathogen, helping us fight it off faster in the future.

But our immune systems don’t always produce memory cells in response to every pathogen. For instance, our bodies remember the measles, but forget the varieties of coronavirus that produce the common cold.

And even the presence of memory cells doesn’t mean you won’t get sick — factors like age, genetics and overall health help to determine that. We also have to remember that viruses mutate, which can render our memory cells useless.

All of this means that after recovering from COVID-19 a patient will have some resistance to the virus — but it may be weak and very short-lived. In fact, people are known to contract and become sick from the same common-cold coronaviruses multiple times in a year.

We are actively studying COVID-19, but we don't know enough about it yet to say how our immune systems react to it in the long-term. Pair that with the fact that many antibody tests are known to be faulty, and you have a recipe for increased spread of the virus.

We have a lot of promising information and great minds working to move our understanding forward, but we have to be patient and make decisions based on complete data. We don't want people to feel a false sense of security due to antibody testing. We do not yet fully understand what these tests mean in terms of immunity. When it comes to COVID-19, one of the biggest mistakes any of us can make is acting like we are invincible based on incomplete information. Keep your distance. Wear a mask. Wash your hands. Stay home when you can.

I want each of you to be around to see a brighter day.