

The novel coronavirus (SARS-CoV-2) is the virus causing COVID-19. The serological tests that detect the level of antibodies against this virus, make it possible to assess immunity against SARS-CoV-2 and to detect past infections, even when a person is already healthy and the virus is no longer present in the body. The antibody tests also help diagnose a current infection in cases when the antibodies have been already produced in the body. Considering the above mentioned facts, serological tests for SARS-CoV-2 are important not only for individual patients, but they can be also used by public health authorities in order to assess the situation at the population level.

The World Health Organization (WHO) released a video interview on October 11, where WHO's chief scientist, Dr. Soumya Swaminathan, is answering questions about serological studies for SARS-CoV-2. The translated interview in Georgian can be viewed on this page: <https://bit.ly/2Tfo6sF>

And here we only present the English transcription of the video for accessibility reasons. The original video in English can be viewed here:

<https://www.youtube.com/watch?v=NCRds2KIwpQ>

### **Soumya, tell us why do public health authorities do serological surveys?**

So, maybe we can start with what are serological surveys? These are basically blood tests that you do in people to look at antibodies against the SARS-CoV-2 virus and it's usually done in a population group. So, what it tells you is a couple of things.

The first thing is, it tells you how many people in that group, in that population, have been exposed to a virus, have had an infection. Because we know now that many infections occur without any symptoms and people may not have sought care or they may not have had a test done at all. And so, the true number of people who've been infected in a community can only be known when you do these kinds of serological surveys. So that's the first piece of information you'll get.

The second is you can also start looking at which groups are more exposed or have had higher rates of infection. So if you include health care workers, if you include children, if you include other kinds of frontline workers, the elderly, you start getting an idea of who is more exposed, who's been less exposed, where have the infections been the most. You can also look at the localities within cities. So for example, you could look at low income, highly crowded, urban settlements versus rural areas, for example, to see if there's a difference in exposure.

And then finally, if you do these tests repeatedly, these surveys repeatedly, over a period of time, the local public health authorities get an idea of how infection rates are progressing in that particular area. Are they still increasing? Have they stabilized, etc.?

And finally, we could also use this opportunity to test the same group of people over a period of time to understand more about the immunity against this virus. Because one of the things that everyone wants to know is: if you've been infected and you have antibodies, how long do they last? How long do they protect you? And here's an opportunity to also answer that question.

**Soumya, a lot of these sero-surveys have been done across the world. What have we learned about this new disease COVID-19?**

So there have been several of these done, I think we know at least a hundred sero-surveys done in countries around the world and some of the data that started coming out is very interesting. Because the first lesson we've learned is that a much larger proportion of people actually had the infection than were detected by testing, especially in the early days. And this varies from 5 to 10 to even 40 times more people in some cities have been exposed to the virus. So, it's been much more widespread.

The second thing we've learned is that in most places, which have had big outbreaks – in North America, in Europe, in Asia – the data coming out shows that only about 5 to 10% of the population in those places, even where they had big outbreaks, actually have antibodies. So, that's telling us that the majority of people in most countries around the world are still susceptible to this virus and they can still get the infection if they are exposed.

And then it's also telling us, what's happening over time. There have been some cities, which have repeated serological testing at weekly or monthly intervals and have been able to track the progress of their epidemics.

**Soumya, as public health experts learn from these serological studies, there's so many data points that come out, it can get a little confusing. What are the questions that the public should ask? And what is the data the public should look for when such a survey comes out?**

Yes, I think this is really important point because the public needs to understand what does it mean for me? So I think it helps to inform you as to how big the outbreak has been in your town or city, how effective have been the control measures. It will bring home to people when they know that only 5 or only 10% of people in their city actually have been exposed and have antibodies.

And then over a period of time, of course, they can also see how the measures that have been out in place, what the measures that the government is doing as well as how well the public is responding and behaving in a responsible manner, if that's actually having an impact in keeping the infection rates under control.