

Insider Q&A: NIH official on testing for infectiousness

February 14 2022, by Matthew Perrone



This 2019 photo provided by the National Institutes of Health shows Dr. Bruce Tromberg. More than two years into the COVID-19 pandemic the U.S. is still grappling with its coronavirus tests: how to improve them and how to make more of them. Tromberg is the top government scientist tasked with solving the nation's testing woes. Credit: Chia-Chi Charlie Chang/NIH via AP

More than two years into the COVID-19 pandemic the U.S. is still grappling with its coronavirus tests: how to improve them and how to make more of them.

Dr. Bruce Tromberg of the National Institutes of Health is the top government scientist tasked with solving the nation's testing woes. He's in charge of \$1.5 billion in congressional funding provided to scale up testing under the Rapid Acceleration of Diagnostics, or RadX, initiative.

In addition to funding dozens of companies and researchers, the program is trying to answer knotty testing technology questions. One of the most pressing for employers is whether to require a negative [test](#) before infected staffers return to work.

Recently, the Centers for Disease Control and Prevention faced criticism for [not endorsing](#) a negative rapid antigen test before people exit their five-day isolation period.

Tromberg says infectiousness is a complicated scientific question that goes beyond any single test result. His conversation with The Associated Press has been edited for length and clarity.

Q: Why can't we assume a negative antigen test means you're no longer infectious?

A: If you get a positive antigen test, it's safe to assume you're infectious. But remember: Whether you actually infect someone is a two-body problem. You need a transmitter and a receiver.

So your chance of transmitting to larger numbers of people is going to depend on your immune status, your proximity to others, the air exchange and your behavior.

Q: What are the technological challenges to measuring infectiousness?

A: Let's do a little thought experiment: If you took a snapshot of everyone in the country who's got COVID and plotted their viral loads on a chart, it would range from about 10 virus copies per milliliter to one billion copies per milliliter. That's a huge range.

Q: Where do antigen tests fall on that range of detection?

A: Antigen tests can pick up from roughly a million copies to a billion. So that's pretty good. But how about if you're at five hundred thousand copies, will it pick you up? Probably.

The scary thing is that you could be at one hundred and still be infectious, especially if you and I are working out together in a gym and I'm constantly breathing on you and we're not wearing masks and you're not vaccinated. I would say it's super likely.

How do you intuit that? Well, look at the population curves. If we're in a phase of expansion of whatever the variant of the moment is where it goes up like a rocket ship, then that variant is pretty darn infectious. It's highly transmissible.

So it's a combination of a lot of things. It's the biology of the variant, but also the proximity and how it is transmitted.

I think it's unrealistic to think that tests are the final word. You have to really consider the totality of the countermeasures, especially when you're in a tidal wave of infections like omicron.

© 2022 The Associated Press. All rights reserved. This material may not be published, broadcast, rewritten or redistributed without permission.

Citation: Insider Q&A: NIH official on testing for infectiousness (2022, February 14) retrieved 17 June 2024 from <https://medicalxpress.com/news/2022-02-insider-qa-nih-infectiousness.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.