

Q&A: Should we worry about airborne coronavirus?

July 13 2020, by Nardy Baeza Bickel



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This week, more than 200 scientists from more than 30 countries signed an open letter published in the journal *Clinical Infectious Diseases* calling for the World Health Organization to provide guidance on aerosol transmission of coronavirus.

Arnold Monto, professor of epidemiology and global health at the University of Michigan School of Public Health, is an internationally known expert on the [transmission](#), prevention, mitigation and [social response](#) to outbreaks and pandemic planning, including transmission modes. He has served as an adviser for the World Health Organization, consulted with agencies of the U.S. departments of Health and Human Services and Defense on communicable diseases, and visited Beijing during the SARS coronavirus episode in 2003.

What are the main ways of transmission of viruses in general?

There's basically three ways of transmission we would be looking at in a pandemic. One is fomite transmission, when someone infected touches a surface and leaves the virus behind. We handle that with hand hygiene.

For this discussion, we are concerned with the other two: droplet transmission and [aerosol](#) transmission. Droplet transmission occurs when people talk to each other and larger drops that contain the virus travel from one person to the other. These viruses because of their size don't stay up in the air for long periods or distances. Aerosol transmission

occurs when tiny [droplets](#) of the virus remain airborne after someone with the virus talks, breathes or coughs, and the droplets stay up in the air for longer periods of distances.

In all situations, there is a range of droplet sizes. In most situations, with COVID-19, the majority of the droplets are large and they do not stay in the air for long or travel far. But in certain unusual situations, especially if we are dealing with a "superspreader," some of the droplets may be small. In other words, we can talk about a virus mainly transmitted by large droplets but sometimes there may be some aerosol transmission. There is nothing absolute about it. This is important because aerosols can stay in the air for longer periods and travel longer distances but usually most of the transmission is by larger droplets.

How serious is that?

The main consideration about the amount of aerosol transmission is the question about safely being more than 6 feet away from an infected person. This need not be a concern if aerosol transmission occurs infrequently. It may happen rarely, such as in meat packing plants where infected workers may be more than 6 feet away. The overall air flow in these circumstances will also be an issue. Regular face masks will not as efficiently stop aerosols as large droplets, so increased safety measures might be needed. The fact that [face masks](#) are working confirms that aerosols are not the usual way transmission takes place.

What do you make of WHO's acknowledgment that the virus could remain airborne?

It is helpful WHO recognized what most people realize over many years—that there is occasional viral transmission through aerosol. But that transmission is not the most common way the way the [virus](#) gets

from person to person.

For those places where aerosol transmission is a factor, wearing N95 masks and using specialized air filters might be a good solution. But while aerosol transmission does take place, it is not frequent under ordinary circumstances. Social distancing and wearing a mask when that's not possible, are clearly a first step towards protecting against large droplets and the main form of transmission.

What should people be most concerned about?

People should be most concerned about those not following the guidelines that stop large droplet transmission. That is the way most transmission occurs. In special circumstances, it might be possible using air purification to reduce the occurrence of viruses in the air, but that is not something that is necessary in most environments.

More information: Lidia Morawska et al. It is Time to Address Airborne Transmission of COVID-19, *Clinical Infectious Diseases* (2020). [DOI: 10.1093/cid/ciaa939](https://doi.org/10.1093/cid/ciaa939)

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