



NEWS

'Evidence is now overwhelming': 3 things to know about airborne COVID-19

A roundup of the research

By [Megan DeLaire](#) Toronto.com

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There's no better time of year than winter to catch a glimpse of your own breath suspended and swirling in the cold air.

In someone infected with COVID-19, do the tiny droplets exhaled in that vapour contain enough viral particles to infect another person before they gradually settle to the ground, potentially tens of metres away?

The Government of Canada [recently acknowledged](#) the risk that COVID-19 can spread through tiny, aerosolized respiratory droplets that hang in the air.

And this month, hundreds of Canadian health-care professionals, engineers, scientists and citizens [signed a letter](#) to premiers, public health officials, Chief Public Health Officer Dr. Theresa Tam and Health Minister Patty Hajdu, demanding action to address the risk of COVID-19 transmission through inhaled aerosols.

"The evidence is now overwhelming — aerosol transmission of COVID-19 is common and is an important route of transmission," the letter states.

"It is therefore imperative that workplaces, public institutions and individuals understand the risk of aerosol transmission as well as the actions that can be taken to combat it."

Here is some of what we know about airborne COVID-19 transmission.

WHAT THE RESEARCH SUGGESTS

In the early days of the pandemic, it was widely believed the novel coronavirus spread only via surface transmission and large respiratory droplets, which, once expelled from an infected person, fall to the ground within a distance of two metres.

In July, however, 239 scientists in 32 countries presented evidence in an [open letter to the World Health Organization](#) that small respiratory particles light enough to linger in the air can infect people at distances beyond two metres.

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Their research found these microdroplets can travel for tens of metres while settling from a height of about 1.5 metres from the floor.

A few days after the letter was published, the World Health Organization [updated its guidelines](#) around how COVID-19 spreads to mention the possibility of aerosolized transmission in settings such as choir practices, restaurants and fitness classes.

In a [scientific brief published on Oct. 5](#), the U.S. Centers for Disease Control stated that while aerosolized respiratory droplets containing viral particles can remain suspended in the air for several hours, airborne transmission only accounts for a small number of COVID-19 cases. Most COVID-19 infections, it said, are spread through close contact.

WHAT HEALTH CANADA SAYS

In November, Canada [revised its guidelines](#) on how COVID-19 spreads to include the risk of aerosol transmission.

"SARS-CoV-2, the virus that causes COVID-19, spreads from an infected person to others through respiratory droplets and aerosols created when an infected person coughs, sneezes, sings, shouts, or talks," the updated guidance said.

"The droplets vary in size from large droplets that fall to the ground rapidly (within seconds or minutes) near the infected person, to smaller droplets, sometimes called aerosols, which linger in the air under some circumstances."

PREVENTIVE MEASURES

Since early November, the Public Health Agency of Canada (PHAC) has advised Canadians to use three-layer non-medical masks in place of less robust one- and two-layer masks, and several Ontario companies have advertised systems they claim can either detect or kill airborne COVID-19 in a variety of indoor settings.

In [their Jan. 4 letter](#) to Canadian politicians and public health officers, the Canadian coalition of health-care workers, scientists and engineers called for the following measures to address the risk of airborne COVID-19:

- Promote strategies to reduce transmission risk indoors through clear public health messaging
- Ensure no high-risk health-care worker or other essential worker is denied access to a properly fitted N95 mask
- Mandate and fund indoor ventilation monitoring and improvement in essential public institutions, such as schools and long-term-care homes

“Experts warn that future respiratory viral pandemics are likely,” the letter states.

“Investing in ventilation, indoor air quality and appropriate personal protective equipment now will save lives and prevent economic hardship in the future.”

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