

Health · Second Opinion

# COVID-19 spreads through the air. Here's what you can do about it this winter

Layering protection of masks, ventilation and filtration can help fight airborne spread

[Adam Miller](#) · CBC News ·

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Canada's guidelines on masking haven't been updated in more than a year, with non-medical masks containing a filter still recommended — despite research showing cloth masks are less effective than surgical masks against the airborne spread of COVID-19. (Ben Nelms/CBC)

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Canadians looking for guidance on how to reduce their risk of COVID-19 indoors this winter may be feeling left out in the cold.

The Public Health Agency of Canada (PHAC) now recommends [opening windows](#) to increase ventilation and using [HEPA filters](#) to clean indoor air, but it stops short of advocating for [better-quality masks](#) or saying outright that the virus is [primarily airborne](#).

"From what I've seen, Canada is now an outlier in terms of not acknowledging transmission through the air," said Linsey Marr, an expert on virus transmission at Virginia Tech in Blacksburg, Va. "I think the messaging could be more clear."

Canada's guidelines on masking also haven't been updated in more than a year, with [non-medical masks containing a filter](#) still recommended — despite research showing cloth masks are [less effective](#) than surgical masks against the airborne spread of COVID-19.

- **[Why you might want to start wearing better masks — even](#)**

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masks — and so if you haven't already, you could consider upgrading your mask."

Marr said Canada is "missing out" on the opportunity to promote better protection from [medical masks with higher filtration levels](#), such as surgical masks or N95s, but also when it comes to explaining exactly why filtration, ventilation and masking are so important.

"That's because the virus is in the air," she said. "I think if people understand that, they will be much more likely and willing to take measures that are effective at reducing transmission."



Linsey Marr, an expert on virus transmission at Virginia Tech, says Canada is 'missing out' on the opportunity to promote better protection from medical masks with higher filtration levels, but also when it comes to explaining why filtration, ventilation and masking are so important. (Graham Hughes/The Canadian Press)

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spread of the virus has changed dramatically, with [more infectious variants increasing risk](#) and [physical distancing alone](#) not proven to be sufficient — especially indoors.

The virus can be transmitted through the air in two key ways: microscopic airborne particles called aerosols that linger in the air like smoke, or larger respiratory droplets that fall to the ground quickly (prompting the original two-metre physical-distancing guidelines).

But experts say Canada's public health guidance has struggled to keep up with the evolving science, leading to contradictory advice, such as [PHAC's recommendation](#) that physical distancing is the "best way to help prevent the spread of COVID-19."

- [\*\*Canada quietly updates COVID-19 guidelines on risk of airborne spread\*\*](#)

"If that's the case, then you should be OK with being in a room with a COVID-infected person with your mask off if you are six feet apart," said Raywat Deonandan, a global health epidemiologist and associate professor at the University of Ottawa.

"If that is not the case, then you accept aerosol transmission. But the problem is, we don't have 100 per cent consensus amongst experts. So it might be confusing for people who get conflicting information."

Toronto respirologist Dr. Samir Gupta says once we realized aerosol transmission was a primary driver of the spread of the virus through the air, public health guidelines for Canadians should have followed suit.

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Gupta said the "pendulum swung" toward aerosol transmission being a major factor in how the virus is transmitted, and the practical implications of that are "huge" for the Canadian public when gathering indoors.

"You can be very far away from the infection source, but if you're in there for long enough, you will catch it through aerosols," he said. "And that changes the game in terms of how we control spread."

## Layering protections can 'reduce the risk by a lot'

Other countries go far beyond Canada's guidance: The U.S. Centers for Disease Control and Prevention now says [N95s can be worn by the general public](#), and Britain recently launched an [awareness campaign](#) on preventing airborne transmission indoors.

Canada [quietly updated its guidelines](#) on the risk of airborne spread a year ago, adding the word "aerosols" for the first time, but it has stopped short of recommending medical masks for the general public or creating a similar campaign specifically around airborne spread.

"It is both troubling and tragic that our public health leaders have failed repeatedly to safeguard Canadians through simple, cost-effective and proven airborne protective measures," said Mario Possamai, a forensic investigator and senior adviser on the 2007 [SARS Commission](#).

"They should be held accountable for the deaths and infections their shameful negligence has caused."

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## How delays in acknowledging airborne COVID-19 transmission risked lives

8 months ago | 8:51

An examination of the timeline of Ontario's COVID-19 response and how the delay to acknowledge the risk of aerosol transmission may have cost lives, despite lessons learned from the 2003 SARS epidemic. 8:51

Experts say layering different levels of protection on top of each other, also known as [the Swiss cheese model](#), can further prevent the spread of COVID-19 as colder weather pushes us more toward indoor activities in the coming weeks and months.

"None of them by itself is 100 per cent effective," Marr of Virginia Tech said. "But when you combine them, you can reduce the risk by a lot."

Deonandan said the use of [proper masks](#), ventilation and filtration — combined with high vaccination rates and vaccine passports for indoor spaces — will help to keep transmission levels low and take care of the "lion's

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"A year ago, there were so many mysteries about this disease ... but now it's not that mysterious how people get it — and because we know that, we know how to stop it," he said.

"So we don't have to have lockdowns, we don't have to have economic pain anymore. All we've got to do is make some good choices on a daily basis."

## Lift measures cautiously, like 'an on-off switch'

High vaccination rates, the rollout of third doses to vulnerable Canadians and the approval of vaccines for children in the coming weeks will make a big difference in our COVID-19 risk levels across Canada, but experts say we need to be patient.

"When cases are low, it doesn't mean we should just remove these measures," said Dr. David Fisman, an epidemiologist at the University of Toronto's Dalla Lana School of Public Health. "That's like folding your umbrella in a rainstorm because you're not wet yet."

Ontario recently announced plans to [lift all of its COVID-19 public health measure by March](#) — including masks — but experts say that decision should be tied to data on transmission levels circulating at the time.

- [Ontario plans to lift all COVID-19 public health measures — masks included — by March](#)

"If we're going to lift the rules ... we need to also be prepared to reinstate them if a new more transmissible variant comes along that escapes the vaccine," Mann said.

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- [Why experts are mixed on if it's too soon for Canadians to ditch masks](#)

Marr said keeping precautions in place and using a "data-driven mask policy" tied to transmission rates in the community "like an on-off switch" will help prevent a resurgence of COVID-19 in the future as we continue to learn to live with the virus.

"It's important that people understand that the crisis is not over — but it will be," Deonandan said. "And I know you're tired of hearing this, but we can live our lives now, but live our lives responsibly."

*With files from Christine Birak and Marcy Cuttler*



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