

A new review on how to fight COVID-19 during the British wintertime

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A new report is highlighting ways we can fight COVID-19 while indoors during cold weather periods.

At the beginning of the COVID-19 crisis, there was a lack of empirical evidence on the [virus's](#) airborne [transmission](#). However, an increasing body of evidence—gathered particularly from poorly ventilated environments—has given the scientific community a better understanding of how the disease progresses. Information on the asymptomatic and pre-symptomatic transmission of the virus strongly supports the case for airborne transmission of COVID-19.

In a study published by the journal *Proceedings of the Royal Society A*, scientists from the University of Surrey, together with other members of the Royal Society's Rapid Action in Modeling the Pandemic (RAMP) initiative, conducted a literature review of how two types of indoor spaces—open-plan offices and school classrooms—condition and ventilate their environments.

Their primary recommendation was that assessments of ventilation provision, or where practical the monitoring of CO₂ levels to indicate ventilation provision, should be carried out to help manage the risk of COVID-19 transmission via the airborne route.

The researchers also found that humidity can influence the spread of the virus. While higher humidity might help to reduce the spread, it could also lead to other [health issues](#) related to the growth of mold and other pathogens. The researchers recommend that in cold weather, humidity should be maintained at between 40 and 50 percent.

The report also confirms that social distancing and the use of face masks continue to play an essential role in reducing the risk of transmitting the virus when combined with good ventilation of indoor spaces.

The researchers were unconvinced by any evidence of the effectiveness of using desk and ceiling fans to reduce the transmission of COVID-19. However, there may be some overall health benefit to using a fan to

increase air circulation in certain enclosed spaces.

Dr. Oleksiy Klymenko, co-author and lecturer in Chemical and Process Engineering at the University of Surrey, said: "This awful year living with COVID-19 has motivated the [scientific community](#) to understand all that we can about how this dangerous virus behaves in an indoor environment. We hope that our review will be a valuable tool for managing the virus in future."

Dr. Michael Short, co-author and lecturer in Chemical and Process Engineering at the University of Surrey, said: "While sustainability and [temperature control](#) have been important considerations during the construction process of a built [environment](#), the pandemic has shown us the importance of moving air quality and ventilation processes up on that agenda. We hope this report will contribute to future debate about how to make sure our indoor environments are safer for all."

More information: Henry C. Burridge et al. The ventilation of buildings and other mitigating measures for COVID-19: a focus on wintertime, *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences* (2021). [DOI: 10.1098/rspa.2020.0855](https://doi.org/10.1098/rspa.2020.0855)

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