

ADVISING ON CLASSROOM VENTILATION TO FIGHT COVID-19

BRANZ is committed to collaboration to improve indoor air quality. Sharing knowledge can enhance our understanding about the health effects that poor indoor air quality has and how we might reduce these. Therefore, BRANZ supported the establishment of the New Zealand Indoor Air Quality Research Centre. Its launch in late 2021 was fortuitous. The new centre was perfectly positioned to issue expert advice on how best to ventilate classrooms ahead of the school year and Omicron's rise.







The IAQRC advises opening windows to remove or reduce airborne viruses.

There are invisible dangers harbouring in the air inside some buildings that mean people might not be as safe indoors as they believe. Assembling the best minds in the country on ‘all things indoor air quality’ is helping to propel research in the field. This is in a bid to better understand the health effects and to find solutions to improving poor indoor air quality.

Experts from seven leading research organisations came together to form the Indoor Air Quality Research Centre (IAQRC): BRANZ, GNS Science, NIWA and the universities of Canterbury, Massey, Otago and Victoria. The mission of the IAQRC is to advance the understanding of indoor air quality in New Zealand by coordinating research, sharing knowledge and resources and issuing practical public advice.

With a vision to reduce health risks associated with poor indoor air quality, the IAQRC had its first opportunity, advising the Ministry of Education about minimising COVID-19 transmission indoors. A subcommittee of IAQRC members assembled to provide practical guidance.

The IAQRC urgently highlighted the importance of taking simple but underappreciated measures like opening windows, especially on different walls, to remove or reduce particles that may be carrying the virus. A cross-draft exchanges air in the room with fresh air in about 10 minutes.

Teachers were provided advice to keep windows open and external doors ajar to increase classroom ventilation with the aim of stopping or slowing the spread of the virus.



Researching how indoor air quality affects health, Dr Caroline Shorter from the University of Otago and BRANZ's Dr Manfred Plagmann test lung function in home environments.

Keeping rooms at or above 18°C can also help protect occupants. In colder weather, good ventilation practices need to be balanced with keeping rooms at a comfortable temperature. At colder temperatures, airflow works differently, and it is possible to maintain good ventilation with windows only partially open.

Now that COVID-19 is becoming endemic, ventilation is a key measure to provide ongoing protection against this disease and to improve student cognitive performance while learning.

As well as viruses, bacteria and mould that can lurk in indoor air, potentially causing sickness, many of the materials that homes and furnishings are made from can release gaseous contaminants. Occupant activities such as cooking or heating using unflued gas appliances can create breathable tiny particles carrying toxic chemicals.

Many materials in the home can contribute to a greater or lesser degree to the pollutant exposure of its occupants. Such materials can range from deteriorating asbestos-containing products to newly installed flooring, upholstery or carpet.

BRANZ is contributing to improving indoor air quality by developing and testing methods to help the understanding of compounds released by timber degradation and contaminated building materials in the home.

This and other IAQRC initiatives will ultimately improve the air that New Zealanders breathe at home, school and work.

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