

# Guidance for schools

## Introduction

In this document you will find summarised advice on the operation and use of building services in schools to prevent the spread of the COVID-19 virus (SARS-CoV-2). This guide is aimed at school principals and facility managers.

Before taking preventive measures, you should have a basic understanding of how infectious agents are transmitted. In relation to COVID-19, there are four main transmission routes:

1. In close contact of 1–2 metres via droplets and microdroplets (when sneezing, coughing or talking)
2. Via the air through microdroplets (droplet nuclei), which may stay airborne for hours and can be transported long distances (released when breathing, talking, sneezing or coughing)
3. Via surface contact (hand-hand, hand-surface etc.)
4. Via the faecal-oral route.

More backgrounds on transmission routes of SARS-CoV-2 can be found in the [REHVA COVID-19 Guidance](#).

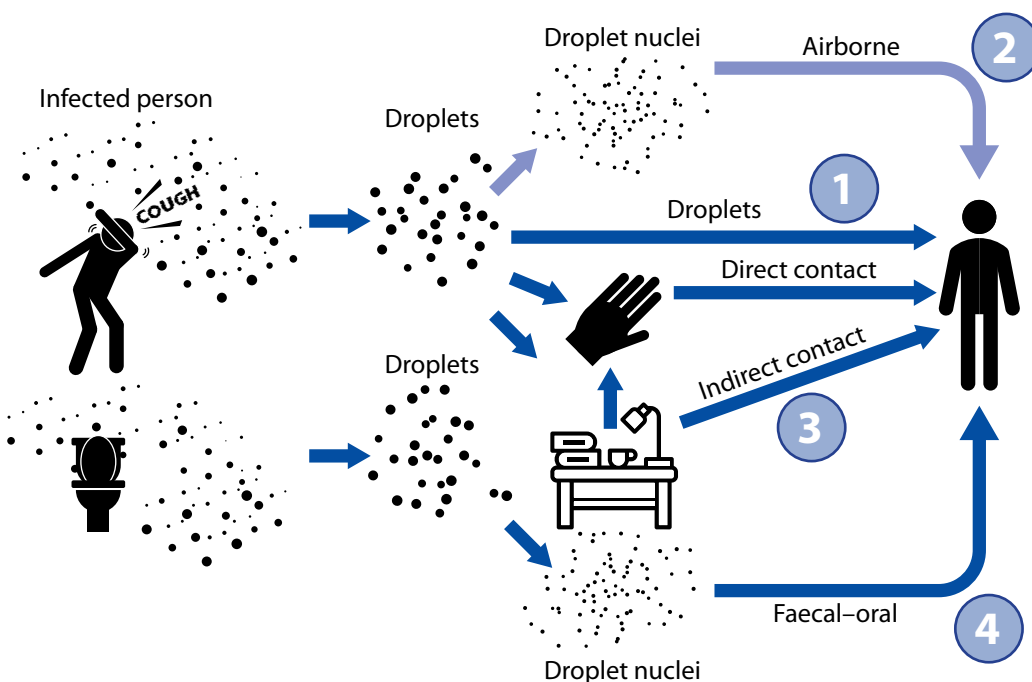


Figure 1. Exposure mechanisms of COVID-19 SARS-CoV-2 droplets. (figure: courtesy Francesco Franchimon).

National guidelines and guidance documents such as the WHO document '[Key Messages and Actions for COVID-19 Prevention and Control in Schools](#)' focus on monitoring of symptoms, physical distancing, and good hygiene practices.

To keep the risk of infection as low as reasonably achievable, AIRAH also recommends measures related to ventilation (airborne transmission) and sanitary installations (faecal-oral transmission).

## Ventilation

Many Australian schools do not have sufficient ventilation. Often they are naturally ventilated (e.g., using windows).

Natural ventilation relies on the temperature difference between indoor and outdoor air, and wind. For this reason, sufficient natural ventilation cannot be guaranteed at all times. Mechanical ventilation systems can ensure a continuous air exchange throughout the year. But installing these systems requires time and money.

Here are some practical steps to optimise ventilation in the short term.

- Improve air quality by using outdoor air for ventilation. Check whether the ventilation systems in classrooms, either natural or mechanical, are functioning well:
  - Check whether windows and ventilation grids can be opened.
  - Clean ventilation grids so the air supply is not obstructed.
  - Have mechanical ventilation systems checked by your maintenance company.
- Install a CO<sub>2</sub> monitor with traffic light indication (Figure 2) at least in the classrooms that rely on opening windows and/or ventilation grids. This makes it clear when windows need to be opened. Make sure that the CO<sub>2</sub> monitor is placed at a visible position in the classroom, away from fresh air inlets (e.g., open windows). In times of the pandemic, AIRAH suggests temporarily changing the default settings of the traffic light indicator (orange light up to 800ppm and red light up to 1,000ppm) in order to promote as much ventilation as possible.



Figure 2. Examples of CO<sub>2</sub> monitors with traffic light indicator showing the indoor air quality.

- Check operating hours of mechanical ventilation systems. Switch ventilation to nominal speed at least 2 hours before school starts and switch to lower speed 2 hours after occupancy. Keep toilet ventilation in operation 24/7. This also ensures a minimum of ventilation in the entire building at night.
- Switch air handling units with central recirculation to 100 per cent outdoor air. Please note, however, that depending on your climatic region, some air conditioning systems will struggle to adequately condition the air with 100 per cent outside air being introduced. Please consult your air conditioning service provider or seek assistance from suitably qualified people before changing the function of your systems.
- Adjust the set-points of CO<sub>2</sub> controlled ventilation systems (if present). With these systems, the amount of air exchange is automatically reduced with lower occupancy to save energy. To reduce the risk of transmitting infectious diseases, full ventilation is needed, even if only some of the students are present. Ask your maintenance company if your building has CO<sub>2</sub>-controlled ventilation. Generally, they are the ones who adjust CO<sub>2</sub> set-points.

- Instruct teachers on how to improve ventilation:
  - Open windows and ventilation grids as much as possible during school hours. Opening windows just underneath the ceiling reduces the draught risk. In rooms with mechanical air supply and exhaust this is usually not necessary, but extra ventilation is positive and does not disrupt the ventilation system (except in very hot temperatures).
  - Ensure regular airing with windows during breaks when outdoor temperatures permit (also in mechanically ventilated buildings).
  - Make sure that ventilation facilities are not obstructed or blocked by curtains or furniture.
  - Keep an eye on any installed CO<sub>2</sub> monitors (ask pupils to assist). Be aware that more aerosols are released during activities such as singing or sport.
  - Use local cooling systems, like fan coils or split units, as you usually do. But make sure there is **always** a supply of fresh outdoor air through mechanical ventilation systems or operable windows.



Figure 3. Open windows as much as possible during school hours and ensure airing during breaks.

In the long term it obviously makes sense to structurally improve the ventilation, since poor indoor air quality leads to headache, fatigue and reduced learning performance, among other things.

Some installers and maintenance companies are now offering to replace filters, but this is NOT necessary to reduce infection risks. Only replace filters when necessary or already planned. Also, some people talk about cooling and humidification of air. Adjusting the set-points of the climate system to lower values is NOT necessary and useless in schools. The same goes for placing humidifiers because there is NO evidence that this is effective. Focus on things that really matter, such as proper ventilation.

## Sanitary facilities

Points of attention for the sanitary facilities (taps, toilets, drains):

- Flush all toilets, water taps and showers before the school reopens. If water taps haven't been used for several weeks, the water that is still in the pipes may be of poor quality.
- Check if water taps in all toilets are in operating condition (with soap dispensers and paper towels) or provide other facilities to disinfect hands after using the toilet.
- Replace frequently used water taps with sensor taps, so they can be used without touching.
- Make sure that floor drains do not run dry to avoid an open connection to the sewer. Fill the drains regularly with water. Add some oil to prevent the water seal from evaporating quickly.
- Instruct students and staff to close toilet lids before flushing and wash hands after toilet use.

## More information

- [www.airah.org.au/coronavirus\\_faq](http://www.airah.org.au/coronavirus_faq)
- [www.rehva.eu/activities/covid-19-guidance](http://www.rehva.eu/activities/covid-19-guidance)
- [www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public](http://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public)
- [www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance-publications?publicationtypes=10ac82f5-5000-468d-94f9-c27a46127852](http://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance-publications?publicationtypes=10ac82f5-5000-468d-94f9-c27a46127852)

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### Acknowledgments

This document was produced by the Federation of European Heating, Ventilation and Air Conditioning Associations (REHVA) and has been updated and distributed in Australia by the Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH). The information is shared with REHVA's permission.

The original document was prepared by Ir. Froukje van Dijken and reviewed by the COVID-19 Task Force of REHVA's Technology and Research Committee, which is based on volunteers. Members of the Task Force are:

**Prof. Jarek Kurnitski**, Tallinn University of Technology, Chair of REHVA Technology and Research Committee Atze Boerstra, REHVA vice-president, managing director at bba binnenmilieu

**Francesco Franchimon**, managing director Franchimon ICM

**Prof. Livio Mazzarella**, Milan Polytechnic University

**Jaap Hogeling**, manager International Projects at ISSO

**Frank Hovorka**, REHVA president, director technology and innovation FPI, Paris

**Prof. Catalin Lungu**, REHVA vice-president, vice-president of AIIR

**Prof. em. Olli Seppänen**, Aalto University

**Ir. Froukje van Dijken**, healthy building specialist at bba binnenmilieu

**Prof. Guangyu Cao**, Energy and Indoor Climate, Norwegian University of Science and Technology (NTNU) Igor Sikonzczyk, Senior Technical and Regulatory Affairs Manager at Eurovent

**Anders Berg**, Institute for Building Energetics, Thermo-technology and Energy Storage (IGTE), University of Stuttgart

**Francesco Scuderi**, Deputy Secretary General at Eurovent Association

**Henk Kranenberg**, vice-president of Eurovent, Senior Manager at Daikin Europe NV

**Dr. Frederike Wittkopp**, Association of German Engineers (VDI e.V.), Commission on Air Pollution Prevention Martin Lenz, Development Engineer at TROX GmbH

**Prof. Dr.-Ing. habil. Birgit Müller**, Hochschule für Technik und Wirtschaft (HTW) Berlin

**Hywel Davies**, Technical Director of CIBSE

**Francis Allard**, Professor Emeritus at La Rochelle University

**Prof. Dr. Marija S. Todorovic**, University of Belgrade Serbia

**Dipl.-Ing. Clemens Schickel**, Association of German Engineers (VDI e.V.)

**Dr. Benoit Sicre**, Lucerne School of Engineering and Architecture