GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN

PRACTICAL GUIDELINES FOR VENTILATION OF SPACES AT THE UNIVERSITY OF GÖTTINGEN

English translation provided for informational purposes. If the English and German versions allow different interpretations, the German version should be followed.

Contents

1. General information

The practical guidelines and information are provided here on the basis of the recommendations of the federal government and the German statutory health insurance agency. When new findings and new recommendations become available, this manual will be updated accordingly. Only general information is provided here. An individual assessment of specific spaces may be necessary.

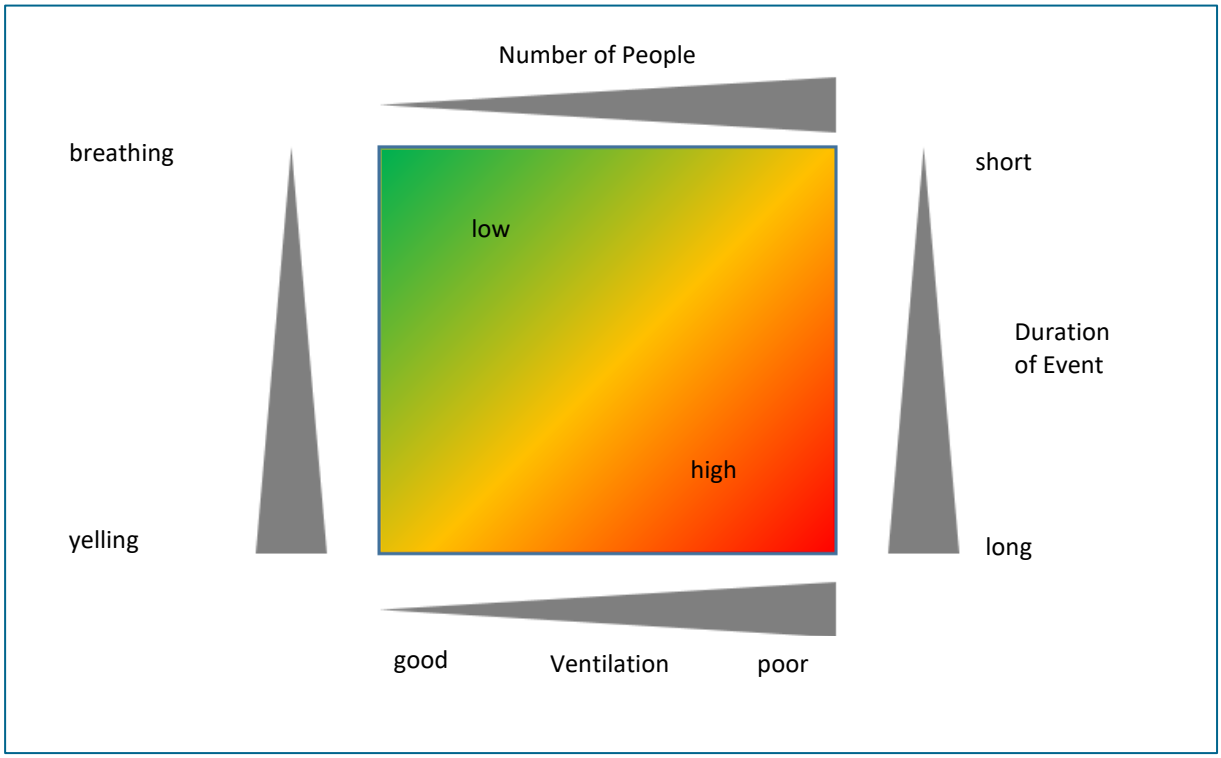
By breathing, speaking, shouting, singing, sneezing and coughing, every person spreads potentially infectious droplets and aerosols into their environment to varying degrees. Contactless transmission of SARS-CoV2 can occur by inhalation of droplets and likely aerosols. A reduction in the concentration of possible pollutants and pathogens in closed rooms is achieved through sufficient air exchange.

Complete elimination of the risk of infection is not possible. Therefore, it is absolutely necessary that everyone is informed about University access restrictions (see General Health and Hygiene Rules).

Wearing a face mask (MNB) reduces the dispersion of droplets and aerosols into the room. The probability of an infectious person being present increases as the number of people increases. The risk of infection depends on the activities taking place, ventilation situation, number of people with respect to the size of the room, length of stay and whether people are wearing face masks.

Regardless of the ventilation situation, the minimum distancing guidelines apply (see General Health and Hygiene Rules). The risk of infection can be reduced by following the “AHA+L” rules (distancing, hygiene, face mask all day, and ventilation).

Illustration of risk of infection



Source: Two metres or one: what is the evidence for physical distancing in COVID-19?, 2020-BMJ-Chart-Nuance-SafetyMeasure-jonn060035F.pdf
Modification for clearer presentation by the Safety/Environmental Section

2. Natural ventilation in rooms

Ventilation recommendations

- *Regular sudden or "shock" ventilation by opening all available windows completely for 3 minutes in winter and 5 minutes in spring/fall and approx 10 minutes in summer.*
- *Adjust the ventilation time intervals according to the number of people in the room, eg every 20 minutes when several people are present.*
- *Rooms used by multiple people (such as break rooms, waiting rooms and canteens) and in particular, meetings and seminar rooms, must be ventilated before and after use, in addition to regular ventilation.*
- *Measuring the CO_2 concentration may aid with checking the air exchange levels (but it is not the same as measuring the possible virus concentration level!)*

In meeting rooms etc where the window situation does not allow for shock ventilation (the windows can only be tilted, only skylights, etc), the time spent in the room should be reduced to the absolutely necessary bare minimum.

Fire and smoke protection doors which do not have integrated alarms and/or closing features must not be left open for ventilation purposes!

Contact for natural ventilation: Safety/Environmental Section (sicherheitswesen@zvw.uni-goettingen.de)

3. Ventilation by means of central ventilation systems (RLT systems)

- The University's ventilation systems have been designed and installed in accordance with the applicable standards. The prescribed maintenance intervals are observed.
- The proportion of room air circulating through the central ventilation systems has been reduced as much as possible. The majority of the systems were converted to operate purely with outdoor air. For those systems which could not be completely converted and due to technical reasons function with recirculated air to some degree, the existing filters were replaced with filters of a higher filter class in accordance with the recommendations of the federal government, the Federal Ministry of Labour and Social Affairs (BMAS) and the Federal Institute for Occupational Safety and Health (BAuA).
- The runtime of the equipment – which were not already in operation such as laboratories – have been increased. These are running continuously at full capacity when in operation.
- Additional window ventilation in mechanically ventilated rooms is not recommended as a necessary measure by the federal government, the BMAS or the BAuA. During normal operation, the systems are designed to keep the CO_2 concentration in the room constantly within a prescribed range. Due to the greatly reduced permissible number of people in the room and the strong correlation between CO_2 and aerosol concentration, it can be assumed that the risk of infection in mechanically ventilated rooms is sufficiently low even without additional window ventilation.
- The distancing measures must be observed, even in rooms with central ventilation systems.
- A break of at least 15 minutes should be provided between meetings.

Contact: GM 3 (RLT-GM3@zvw.uni-goettingen.de)

4) Mobile air filter units

- Mobile air filter units can be used to supplement regular window ventilation in small and medium-sized rooms which do not have mechanical ventilation options. They slow down the build-up of aerosols in the room and can therefore reduce the risk of infection. Due to their air recirculation function, they do not reduce the CO_2 concentration. It is therefore necessary to also comply with the ventilation measures using air from windows.
- The air filter unit must be equipped with the appropriate filters. The volumetric flow rate must be sufficient for the size of the room.
- The noise level of the units must be also taken into consideration. It is recommended to run larger units at a lower level. When operating a unit at the maximum level, the noise produced by the air filter units can be disruptive.
- The main area of use is in conference rooms.
- Faculties and institutions are to decide whether or not to purchase mobile air filter units. They will bear the costs.
- Filter changes are easy to undertake and will be carried out by the faculties and institutions themselves. The safe exchange and disposal of filters, which may be possibly contaminated with viruses, must be ensured. Most devices indicate when a filter change is necessary. A standard operating manual for these devices is available on the main page of the Safety/Environmental Section(in German).
- The cost for these units is between 300 – 350 euros, €50 for additional filters.
- Building management will procure a number of these units, if the costs are covered by the faculties and institutes.

For advice, contact: GM 1 (Mr Constantin Hoffmann)

5) Other considerations/special room situations

In special room situations eg the use of recirculating air conditioning units when several people are occupying the room at the same time, further protective measures (eg wearing an FFP2 mask) may be necessary. These measures must be established in a risk assessment. The use of fans must also be considered on a case by case basis.

FAQs on ventilation: Homepage Safety/Environmental Section

Basics/Literature

SARS-CoV-2-Arbeitsschutzregel (occupational safety rules) (working committees at BMAS)

ASR-A 3.6

Recommendation of the federal government „Infektionsschutzgerechtes Lüften“ (“Ventilation for infection protection”) (Updated: 16 September 2020)

FBVW-502 „SARS-CoV-2: Empfehlungen zum Lüftungsverhalten an Innenraumarbeitsplätzen“ (“SARS-CoV-2: Recommendations on ventilation practices for indoor workplaces”)

Mobile Luftreiniger in Schulen: Nur im Ausnahmefall sinnvoll (Mobile air purifiers in schools: Only useful in exceptional cases) (Updated: 22 October 2020)

SARS-CoV-2 Steckbrief zur Coronavirus-Krankheit-2019 (COVID-19). (SARS-CoV-2 Coronavirus disease 2019 fact sheet). Robert Koch Institute

Updated: 18 September 2020;
https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Steckbrief.html

How COVID-19 Spreads. Centers for Disease Control and Prevention (CDC);
Updated Sept. 21, 2020

https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html

Considerations for Wearing Masks. Centers for Disease Control and Prevention (CDC)

Updated Aug. 7, 2020

https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html

Asadi, S. et al. Aerosol emission and superemission during human speech increase with voice loudness. Sci Rep 9, 2348 (2019)

Wei, J. & Li, Y. Airborne spread of infectious agents in the indoor environment. American Journal of Infection Control 44, S102–S108 (2016)

Leung, N. H. L. et al. Respiratory virus shedding in exhaled breath and efficacy of face masks. Nat Med 26, 676–680 (2020)

Two metres or one: what is the evidence for physical distancing in covid-19?, 2020-BMJ-Chart-Nuance-SafetyMeasure-jonn060035F.pdf