

ASEAN AUSTRALIA SMART CITIES TRUST FUND Asian Development Bank

Airborne transmission of COVID-19 and beyond this pandemic

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How are infections transmitted?



Morawska and Cao. "Airborne transmission of SARS-CoV-2: the world should face the reality." *Environment International*, 139: 105730, 2020

Transmission routes:

- By close contact: in the range of larger droplets, or touching surfaces where they were deposited
- Inhaling small airborne droplets, somewhere in the room



Does it make a difference which transmission route?

It does, in terms of mitigations!

To limit the airborne transmission:

"Appropriate building engineering controls include **sufficient and effective ventilation**, possibly enhanced by **particle filtration** and air disinfection, **avoiding air recirculation** and **avoiding overcrowding**"



Morawska, et al., "How can airborne transmission of COVID-19 indoors be minimised?", Environment International, 142: 105832, 2020



New guidelines

... are needed based on the knowledge about airborne infection transmission

for:

- Building design (architecture
- Building engineering controls
- Building operation



Accepting airborne transmission





It is Time to Address Airborne Transmission of COVID-19

Morawska and Milton + 237 scientist from 32 countries, *Clinical Infectious Diseases*, 2020. (https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa939/5867798?guestAccessKey=82ad8c2a-5efd-4360-81f9-b33dea70ed2c)

7 July 2020:

"The World Health Organization acknowledged "*evidence emerging*" of *the airborne spread of the novel coronavirus*, after a group of scientists urged the global body to update its guidance on how the respiratory disease asses between people."

https://www.who.int/emergencies/diseases/novel-coronavirus-

2019?gclid=Cj0KCQjwupD4BRD4ARIsABJMmZ8q1ZRt8YGVLpxFCC2XUZXthfPK0jsS9Pl44_f2ClYOZ15JdAY5eDQa AiH5EALw_wcB

Not heresy anymore!



Beyond COVID-19

To keep in mind:

- The next pandemic will not be caused by SARS2-CoV-19, but by a virus of different characteristics
- Resilience should apply to all types of airborne infections (e.g. seasonal flu)
- Every year, epidemics of numerous respiratory infections strike, sicken millions, kill thousands and cause economic loses of billions \$
- The measures should be adaptable, in a flexible manner, to the specific risks and demands (e.g. energy conservation)







Thank you!

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