



Is SARS-CoV-2 transmitted by airborne route?

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KEY FINDINGS

There is still limited evidence of SARS-CoV-2 airborne transmission.

- SARS-CoV-2 is primarily transmitted person-to-person via respiratory droplets and contact routes.
- Airborne transmission is still uncertain because studies are conflicting.
- Aerosolized SARS-CoV-2 was found viable for at least three hours in a controlled, experimental setting.
- SARS-CoV-2 was detected in air samples in one study but viral viability was not tested.
- According to WHO and CDC, SARS-CoV-2 is mainly transmitted from person to person via respiratory droplets and contact route. The WHO recommends airborne precautions during aerosol-generating procedures.

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RESULTS

Four studies were included in this review. There were no clinical and epidemiological studies found. Three studies were mechanistic (three environmental surveillance including air samples) and one experimental (using a Goldberg drum). The air sampling studies were conducted in China, Hong Kong, and Singapore. The experimental study was done in the US.

Van Doremalen et al. study reported the viability of SARS-CoV-2 in aerosols for at least three hours in controlled laboratory conditions [1].

Cheng et al. study reported no SARS-CoV-2 was detected in all 8 air samples collected during normal breathing, deep breathing, counting 1-2-3 continuously, and coughing continuously with or without a mask on [2].

Ong et al. study reported no SARS-CoV-2 was detected in air samples collected in the isolation room, anteroom and outside the room of three COVID-9 patients [3]. On the other hand, surfaces and personal protective equipment were extensively contaminated with SARS-CoV-2.

Guo et al. study reported positive detection of open reading frame *1ab* gene and/or nucleoprotein gene of SARS-CoV-2 in indoor air samples near ICU air outlet (35.7% of the samples), near the ICU patient (44.4%), near the ICU doctor's office area (12.5%), and in the isolation ward (15.4%) [4]. The positive air sample farthest from the patient was 4 meters away.

CONCLUSION

There is limited evidence on SARS-CoV-2 transmission via airborne route. Studies are conflicting. Clinical and epidemiological studies are needed to make a robust evidence that SARS-CoV-2 is airborne transmissible or not.

Declaration of Conflict of Interest

JT is a Medical Manager at Merck (Philippines). His work in this review is accomplished in his personal capacity as a physician and EBM practitioner.

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