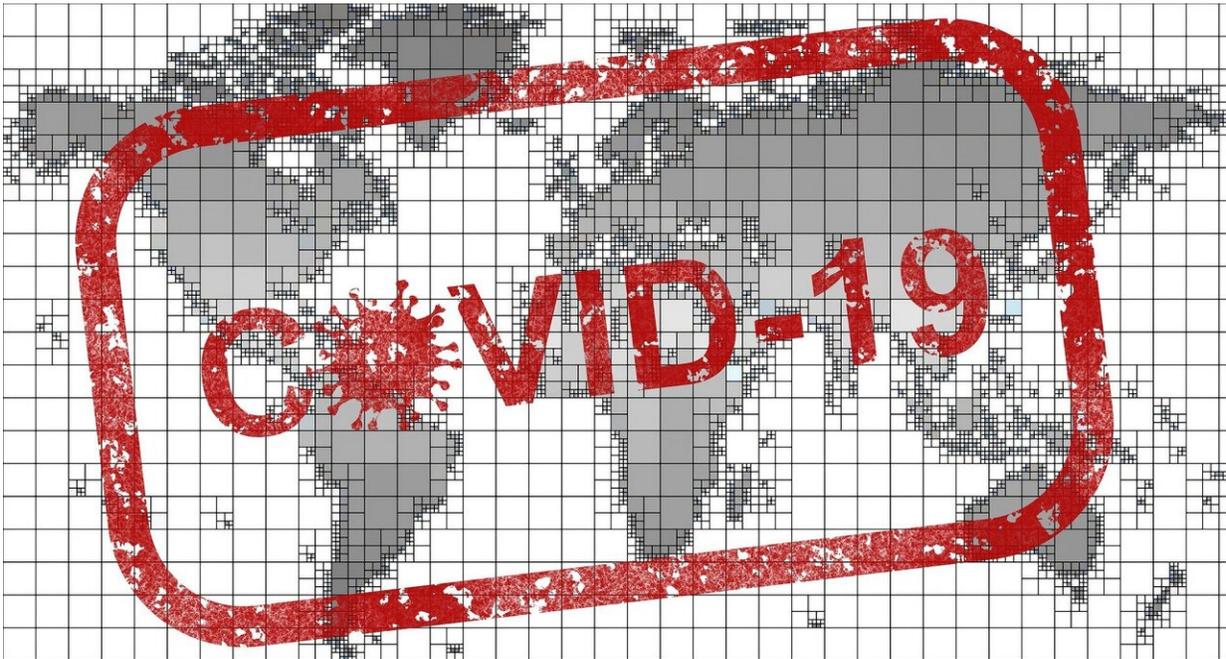


Study: 'No evidence of airborne COVID-19 in public toilets'

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Researchers have found "no evidence of airborne transmission of COVID-19 within public washrooms", in a new study led by The Australian National University (ANU).

In a [systematic review](#), published in *Science of Total Environment*, researchers looked at the risk of [transmission](#) of various viral and

bacterial infections through inhalation, [surface](#) contact and fecal-oral routes in public toilets in studies published over 20 years from 2000 to 2020.

"We found no evidence of airborne transmission of pathogens, including COVID-19, in public washrooms," ANU Professor Sotiris Vardoulakis said.

"We found that the risk of getting COVID-19 from a public toilet is low if people keep up good [hand](#) hygiene and the bathroom is well maintained.

"We realize people are worried about using public washrooms during the pandemic, but if you minimize your time in the bathroom, wash and dry your hands properly, and don't use your [mobile phone](#), eat or drink, then bathroom use should remain low risk."

The researchers say public health measures should still be strictly followed.

"People still need to stay safe and follow their local public health advice," Professor Vardoulakis said.

The study suggests appropriate hand hygiene, surface cleaning, disinfection, washroom maintenance and ventilation can minimize the risk of infectious disease transmission.

"Findings from other studies suggest that airborne transmission is a potential route of transmission of COVID-19. However, we didn't find evidence of that in public toilets in studies published during the first year of the pandemic," Professor Vardoulakis said.

"There are a number of reasons it is low risk in public toilets—people

don't spend a long time in bathrooms and don't interact with others.

"Importantly, the aerosols you may inhale when you flush the toilet come from your own human waste. The risk of cross contamination is not very high—as long as people wash and dry their hands properly, and the washroom is well maintained and ventilated."

However, the study, which was funded by Dyson, did find defective plumbing may increase risk and recommended the need for more studies assessing SARS-CoV-2 transmission risk in [public places](#).

According to the researchers, environmental samples from toilets in COVID-19 hospital wards in Singapore, China, England and Italy showed evidence of SARS-CoV-2 presence on common bathroom surfaces including the toilet bowl and lid, sink, tap and drain, and toilet door handle.

"Contamination is different from transmission. We found public washroom surfaces can become contaminated with bacterial and viral pathogens," Professor Vardoulakis said.

"However, effective hand hygiene, surface cleaning and good maintenance minimizes infection risk."

The study outlines a host of personal precautions, environmental hygiene and bathroom designs to consider reducing the risk of contamination and transmission in [public toilets](#)—including electric doors and closing the lid of the [toilet](#) before flushing.

More information: Sotiris Vardoulakis et al, Transmission of COVID-19 and other infectious diseases in public washrooms: A systematic review, *Science of The Total Environment* (2021). [DOI: 10.1016/j.scitotenv.2021.149932](https://doi.org/10.1016/j.scitotenv.2021.149932)

Provided by Australian National University

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