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Australia using ‘manikin’ to track COVID-19 within indoor spaces

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The primary objective of the tests was to evaluate the impact of ventilation on the ‘virus’ concentrations in a ‘real world’ setting

Using a breathing manikin (one of a kind in Australia), together with an inert, traceable gas that simulated SARS-CoV-2 aerosols, tests were conducted by researchers from University of Sydney’s Indoor Environmental Quality (IEQ) Laboratory, School of Architecture, Design and Planning and ARBS Education & Research Foundation.

Recognition that COVID-19 infections are largely due to airborne transmission raises several questions as we learn to live with the virus.

As per the findings, the ‘virus’ concentrations did not vary significantly over distances ranging up to 6m from the index patient within indoor environments. While the ‘1.5 m social distancing’ rule indoors was originally conceived to minimse infection risks posed by larger SARS-CoV-2 droplets (sneezing and coughing), it may be less effective in limiting airborne infectious aerosols emitted from an index patient simply breathing or talking.

Indoor dining settings with 100 percent fresh air ventilation showed significant reductions in the ‘virus’ concentration levels, offering increased safety. Outdoor dining offers even more safety.

Wearing masks is an additional safety measure in indoor settings, where 100 percent fresh air ventilation cannot be guaranteed, however, a loose-fitting normal mask showed noticeable leakage around the nose. A properly fitted N95 surgical mask leaked the least.

This is the first study in Australia in a realistic indoor scenario, using a breathing thermal manikin, with the experiment conducted at the Australian National Maritime Museum's theatre, cafeteria, and the entry foyer.