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Staying 6 feet apart indoors isn't enough to stop the spread of COVID-19, MIT study finds

Marianne Guenot 19 hours ago



People eating behind individual plastic screens at a restaurant in Bangkok on May 8. REUTERS/Athit Perawongmetha

The widely used 6-foot rule is too little to stop COVID-9 exposure indoors, MIT researchers found.

The risk of exposure from an infected person is similar at 6 feet

and 60 feet, one researcher said.

The study said mask-wearing, ventilation, and what a space is used for were bigger variables.

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The widely used rule of staying 6 feet away from others does little to affect the risk of exposure to COVID-19 in indoor spaces, according to a new study out of MIT.

According to MIT researchers, the rule is based on an outdated understanding of how the coronavirus moves in closed spaces.

They said other variables — like the number of people in a space, whether they wear masks, what they are doing, and the level of ventilation — were much more important.

The 6-foot rule is used in various forms around the world: The

Centers for Disease Control and Prevention advises 6 feet of separation indoors and outdoors, while in the UK the figure is 2 meters. In much of Europe, the figure is 1 meter, which is also recommended as a minimum distance by the World Health Organization.

Such distancing rules are easy to remember and [can protect from transmission of the virus in close contact](#). But, per the new study, they may not be that useful to predict the risk of exposure.

The [study was released online ahead of its publication in the peer-reviewed journal PNAS on Tuesday](#).

It says a better way of controlling indoor exposure is to do individual calculations based on variables for that space.

In some cases, the exposure level might be the same at 6 feet as at 60 feet, [one of the study authors has said](#).

Martin Bazant and John Bush, both MIT professors in applied mathematics, [developed a formula](#) to estimate how long it would take for a person to hit dangerous levels of exposure from one infected person entering a room.

The calculation is a more sophisticated version of the [traffic-light system previously proposed by MIT](#). It takes into account the number of people in the room, the size of the space, what they are doing, whether masks are being worn, and what kind of ventilation is in place.

Using this calculation, it could be that the level of exposure is high in some spaces even if people are more than 6 feet away. It could also be lower than expected.

"The distancing isn't helping you that much, and it's also giving you a false sense of security because you're as safe at 6 feet as you are at 60 feet if you're indoors. Everyone in that space is at roughly the same risk, actually," Bazant [told CNBC](#).

Scientific understanding of how the coronavirus moves in the air has challenged earlier assumptions about how best to adapt to minimize its spread.

At the beginning of the pandemic, it was widely believed that the virus traveled only via heavier droplets ejected during exhalation, sneezing, or speaking.

But evidence has long suggested that the virus also floats around on lighter aerosol droplets that can stay suspended in the air and travel much farther than first thought.

In their calculation, the MIT researchers took into account the effect of having people in the room, and their behavior, on how long the virus would stay suspended in the air.

In a calm environment, these particles would slowly drift to the ground, [the researchers said in their study](#).

But in an environment in which the air is moving around the room and people are talking, eating, singing, and sneezing, the drops can be suspended in the airflow and mixed throughout the room longer.

The effect can be counteracted by ventilation or filtration to get the virus particles out of circulation in the room.

A [website](#) made available by the researchers shows how this model works in different scenarios.

For example, if an infected person walks into a classroom hosting 25 people, none wearing masks and all speaking, everyone would be at risk from the coronavirus within 36 minutes, the website says. It doesn't matter if they follow the 6-foot rule.

By contrast, if all 25 people in that room were wearing a mask, the air would be safe to breathe for 20 hours, it said.

If they were all singing without a mask, they be at risk from the virus within three minutes.

Public-health bodies have started to acknowledge that the 6-foot rule is not a catchall. In March, the CDC advised that the 6-foot rule could be brought down to 3 feet in K-12 schools.

This weekend, the CDC also [updated social-distancing guidance for children in summer camps](#), saying [they can be within 3 feet of one another](#) except when eating or drinking.

It also suggested that disinfection of surfaces might not be necessary in public spaces, [urging an end to what some have called "hygiene theater."](#)

As for rules dictating social distancing outdoors, Bazant said they are "kind of crazy," [CNBC reported](#). The infected air "would be swept away," Bazant said, making the rule irrelevant.

Unless the space outdoors is crowded, Bazant said, he would feel comfortable being as close as 3 feet even without masks.

Experts have told Insider that when it is possible to stay more than 6 feet away from people, wearing [a mask outside is not always necessary](#).

Editor's note: *The headline and text of this article were amended on April 28, 2021, to better reflect the MIT study. Claims attributed to MIT researchers that 6ft distancing does "little" or "almost nothing" to prevent COVID-19 exposure were amended to claims that such distancing is "not enough" to prevent it.*



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