Is one-way masking enough?

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Face masks work best to prevent the spread of SARS-CoV-2 when everyone wears one. But experts say it is still worth wearing a mask to protect yourself, even if no one else does.

While public health messaging has tended to emphasize the importance of wearing a mask to protect others, numerous studies have demonstrated that the right mask protects the wearer, too.

"We have collectively done a poor job at communicating the strong efficacy of N95 respirators," according to Lisa Brosseau, a bioaerosol scientist and industrial hygienist at the University of Minnesota's Center for Infectious Disease Research and Policy.

Recent data from the United States shows that people who always wore a face mask in indoor public settings were less likely to test positive for SARS-CoV-2 than those who never wore a mask.

Better quality masks offered greater protection. Wearing an N95 or KN95 respirator lowered the odds of infection by 83%, whereas wearing a surgical mask or cloth mask lowered the odds by 66% and 56%, respectively.

Fit matters, too. Properly fitted N95 respirators should filter at least 95% of virus particles. That's notably better than the protection offered by universal masking with cloth and surgical masks, which would have fallen on the lower end of 75%–91% at the height of compliance with mandates.

Even a loose-fitting N95 can filter 57%–86% of particles, according to Japanese research. In comparison, surgical masks filtered 47%–50% of particles, while a simple cotton mask filtered 17%–20%.

However, the protection masks offer is time-limited.

In 2021, Brosseau and colleagues estimated it would take up to 1.25 hours for a person wearing a non-fit-tested N95 to receive an "infectious dose" of SARS-CoV-2 from an unmasked infectious person. In contrast, it may take just 15 minutes if both people are unmasked, or 20–30 minutes if one of them wore a cloth or surgical mask.

Brosseau has since cautioned that these estimates don't account for highly infectious variants like Omicron and should not be taken as a "bright line between when you're safe and when you're not safe."

The findings of a more recent modelling study suggested that a person has a 90% risk of infection within a few minutes of speaking to someone with SARS-CoV-2 if neither is wearing a mask, even if they're standing three meters apart. Wearing the European equivalent of an N95 mask dropped that risk to 20%, even after one hour.

"Just wearing a mask — it helps, but it is not going to turn being indoors into something that has no risk," Jose-Luis Jimenez, an aerosols scientist at the University of Colorado Boulder, told *NPR*. When it comes to crowded indoor environments with poor ventilation, "I don't think it can be made very safe," he said.

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