

# Why Masks Work

Whenever someone talks, laughs, sneezes, coughs, or sings, that person sends out tiny respiratory droplets into the air. These droplets are so small that you may not see them, but they are there. If that person is infected with the virus that causes COVID-19, the droplets sent out into the air carry the virus. When someone else is close by (within six feet), that person can breathe in the droplets that the other person is pushing out.

When you wear a mask properly — over your nose and mouth — it blocks the tiny virus-filled respiratory droplets that you push out. That means that there are fewer of those respiratory droplets for someone else to breathe in.

If both people wear masks, it cuts down on the respiratory droplets going back and forth even more.

It's important to remember that COVID-19 is often transmitted by people who are not even showing any symptoms or by people who haven't developed symptoms yet. That is in part why it's so important that more people wear masks — to reduce the transmission from people who may not realize they are infected with the virus.

Masks cannot stop every respiratory droplet exchange, but they have been proven through scientific studies to dramatically reduce the severity of illness because there is less virus being exchanged.

Put simply: If you wear a mask, you emit less virus. If the person you are with also is wearing a mask, that person also has a barrier — to keep from putting out the droplets and to keep from breathing in your droplets.

## Science supports masks to slow the spread of the virus that causes COVID-19

Scientific research, including many studies that have been completed during the past year, shows that wearing a mask is safe, effective, and reduces the spread of the virus that causes COVID-19. The research also shows that masks help reduce the level of infection.

[The Ohio Schools COVID-19 Evaluation](#)<sup>1</sup> and similar evaluations in other states, including a [recent one from North Carolina](#),<sup>2</sup> confirm that masking in schools provides a safe, learning environment and reduces the need, for quarantine.

There are now dozens of studies, that show that mask wearing can help with the spread of viruses, including the one that causes COVID-19. Below are some highlights of the vast body of research available showing that masks work:

- A [large-scale randomized trial](#),<sup>3</sup> which was led by researchers at Stanford, Yale and the University of California at Berkeley and published at the end of August, studied more than 340,000 people in Bangladesh — the largest of its kind in a real-world setting. The paper

<sup>1</sup> The Ohio Schools COVID-19 Evaluation Research Team, Ohio Schools COVID-19 Evaluation, [https://coronavirus.ohio.gov/static/responsible/schools/OSCE\\_evaluation.pdf](https://coronavirus.ohio.gov/static/responsible/schools/OSCE_evaluation.pdf), January 2021.

<sup>2</sup> ABC Science Collaborative, SARS-CoV-2 Testing in Schools: Perspectives of Parents/Caregivers and School Personnel in Durham County, North Carolina | Formative Research Rapid Analysis Report #1, <https://abcsciencecollaborative.org/reportssummaries/>, July 2021.

<sup>3</sup> Abaluck, J., Mobarak, A., *et al.* The Impact of Community Masking on COVID-19: A Cluster-Randomized Trial in Bangladesh, [https://www.poverty-action.org/sites/default/files/publications/Mask\\_RCT\\_\\_\\_\\_Symptomatic\\_Seropositivity\\_083121.pdf](https://www.poverty-action.org/sites/default/files/publications/Mask_RCT____Symptomatic_Seropositivity_083121.pdf), August 2021.

found that a community-based mask program, including distribution and promotion, led to fewer people testing positive for COVID-19. Surgical masks prevented one in three symptomatic infections in those 60 and older.

- In two different evidence reviews, one published in February 2021 in the [Journal of the American Medical Association](#),<sup>4</sup> and the other in January 2021 in the [Proceedings of the National Academy of Sciences](#),<sup>5</sup> researchers reviewed more than 160 studies. Both concluded that masks are effective at slowing the spread of the virus. The Journal of American Medical Association authors noted that wearing a multi-layer cloth mask blocked as much as 50% to 70% of exhaled small droplets and particles. In the Proceedings of the National Academy of Sciences review, scientists said that “Nonmedical masks ... have been effective in reducing transmission of respiratory viruses; and places and time periods where mask usage is required or widespread have shown substantially lower community transmission.” Another Journal of American Medical Association study also published in February 2021, stated, “Compelling data now demonstrate that community mask wearing is an effective nonpharmacologic intervention to reduce the spread of this infection, especially as source control to prevent spread from infected persons, but also as protection to reduce wearers’ exposure to infection.” Wearing of face masks becomes even more important as variants of the virus mutate.

**In short, it is now very clear that when it comes to slowing the spread of COVID-19, masks work.**

### **[Pediatricians recommend mask wearing for children older than age 2 to prevent the spread of COVID-19](#)**

Masks don’t just work for adults. They also work for kids. In July 2021, the American Academy of Pediatrics strongly endorsed the use of infection control procedures, including wearing masks for children. The best thing for children is for them to be in school, five days a week. Wearing masks allows children to be in school consistently with less risk of contracting and transmitting the virus and less risk of quarantine.

“Face masks can be safely worn by all children 2 years of age and older, including the vast majority of children with underlying health conditions, with rare exception,” the American Academy of Pediatrics [said](#).<sup>6</sup>

### **Watch a high-speed laser light video that shows how respiratory droplets are emitted**

To see how respiratory droplets are emitted when speaking vs. when wearing a mask, scientists published a video of a [high-speed laser-light video](#) in the New England Journal of Medicine. The video shows droplets flashing when participants said the words, “stay healthy,” without a mask. The video then shows the lack of droplets pushed out when the participant is wearing a mask.

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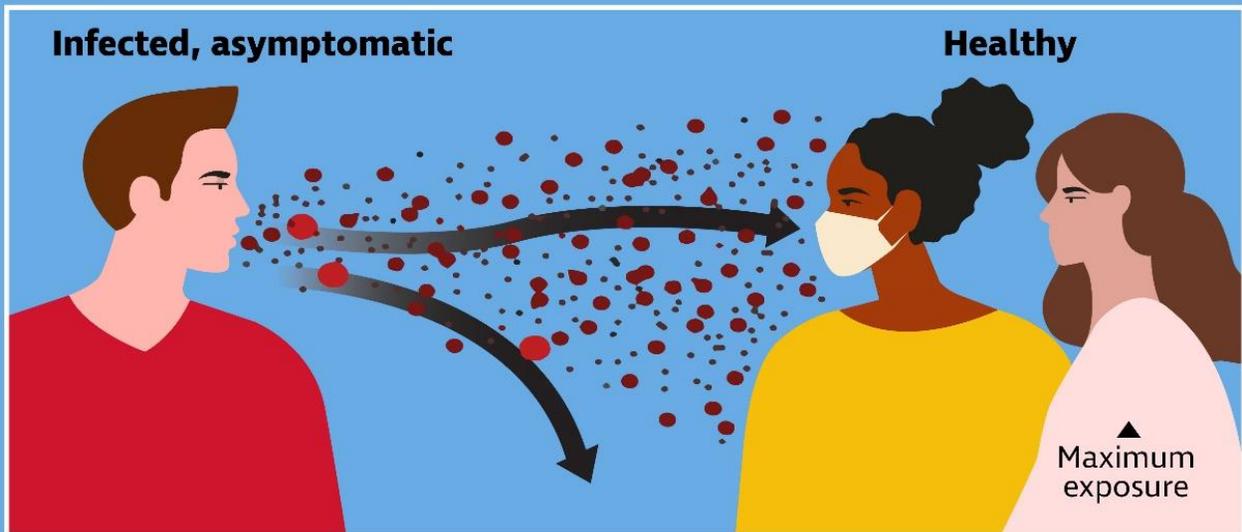
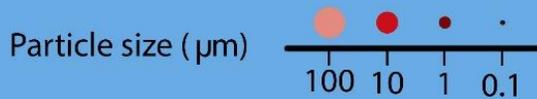
<sup>4</sup> Brooks, John T. and Butler, Jay C., Effectiveness of Mask Wearing to Control Community Spread of SARS-CoV-2, *JAMA Insights*, <https://jamanetwork.com/journals/jama/fullarticle/2776536>, February 2021.

<sup>5</sup> Howard, J., et al. An evidence review of face masks against COVID-19, *PNAS*, <https://www.pnas.org/content/118/4/>

<sup>6</sup> American Academy of Pediatrics, Face Mask Guidance, <https://www.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/cloth-face-coverings/>, August 2021

# Masks Reduce Airborne Transmission

Infectious aerosol particles can be released during breathing and speaking by asymptomatic infected individuals. No masking maximizes exposure, whereas comprehensive masking results in the least exposure.



Source: Reducing transmission of SARS-CoV-2, Science, May 27, 2020.