

# THE DISPATCH

## The Ambiguous Science on Masks

*COVID is dangerous. If masking efficacy is uncertain, policymakers should focus on promoting practices that do work to stop the spread.*

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December 15, 2021

Masks have become one of the more prevalent and enduring symbols of the pandemic. In the United States, many state and local governments have, at one time or another, required masking, and there have been calls for a broad federal mask mandate. Workplaces have required masks for their employees, customers, and vendors. And those who refuse to wear masks have been subject to criticism and shaming.

All this assumes that masking reduces the risk of COVID infection. Numerous political leaders, health care authorities, and major media sources have claimed that “face masks work”—whether they are high-grade “N95” respirators, disposable surgical masks, or the simple multi-ply cloth masks that most of us (myself included) have been wearing in public for going-on two years now.

Take, for instance, this oft-linked *New York Times* animation on how masks obstruct water droplets containing the SARS-CoV-2 virus that causes COVID. It depicts a few dozen computer-generated circles entering and getting enmeshed in a web of mask fibers. Yet, though the animation is titled, “Masks Work. Really. We’ll Show You How,” it presents no data showing that masks really work at blocking enough airborne virus to reduce COVID rates.

The question of how effective masks are at preventing airborne infection has long been the subject of scientific research. Consider a couple of recent summaries of studies in the *Cochrane Systematic Reviews*, the highly reputable series of medical lit reviews. One review, examining several studies of the transmission of influenza-like illnesses, found:

There is low certainty evidence from nine trials (3507 participants) that wearing a mask may make little or no difference to the outcome of influenza-like illness (ILI) compared to not wearing a mask (risk ratio (RR) 0.99, 95% confidence interval (CI) 0.82 to 1.18). There is moderate certainty evidence that wearing a mask probably makes little or no difference to the outcome of laboratory-confirmed influenza compared to not wearing a mask (RR 0.91, 95% CI 0.66 to 1.26; 6 trials; 3005 participants).

In other words, the consensus of the research was *not* that “masks work,” and—if anything—the evidence suggests they do not slow the spread of the flu.

Another review of studies of masking’s effect on reducing surgical wound infections found “no statistically significant difference in infection rates between the masked and unmasked group in any of the trials.”

This literature might explain why some prominent public health officials and organizations did not endorse mask-wearing in the early months of the COVID pandemic.

What about COVID specifically? There have been two major randomized controlled trials (RCTs) of masks' effectiveness in slowing infections. A trial in Denmark involving surgical-grade masks found no statistically significant difference between the treatment and control groups after the treatment group increased mask-wearing. A second, in Bangladesh, found no such difference between the treatment and control groups for cloth masks, but for surgical-grade masks it did find a statistically significant (but disappointingly small) decrease of about 12 percent in infection rates.

On the other hand, there have been several highly publicized “natural experiment” and observational analyses indicating that masks—even cloth ones—are highly effective at reducing COVID. These often compare areas with mask mandates to areas without, attributing differences in COVID rates to differences in policy. But these studies face the challenge of confounding factors; for instance, people living in places where mask mandates are politically acceptable are more likely to take other public and private actions to reduce COVID, such as getting vaccinated, avoiding crowded spaces, and reducing social contact generally. Some of the studies try to control for those differences and still find that masks are effective. But that raises the question: Why would these lower-quality analyses have such a different outcome from the higher-quality RCTs?

I learned about this controversy while editing “How Effective Are Cloth Face Masks?” the cover story for the Cato Institute's policy journal *Regulation*. The authors—med student Ian Liu and med school professors Vinay Prasad (University of California-San Francisco) and Jonathan Darrow (Harvard)—stress that their reading of the literature doesn't find *evidence of the absence* of cloth masks' effectiveness, but it does find an *absence of evidence* of effectiveness. Put another way, they do not argue that masking *doesn't* help reduce COVID, but instead that it's an open question whether masking—especially cloth masks—do help. (They offer a longer summary of the literature in this working paper.)

So, the results are ambiguous, but that ambiguity has several important ramifications for public policy.

First, if masking's effectiveness is uncertain, then policymakers should focus on promoting practices that *are* effective: vaccination, improved ventilation, and discouraging crowding in enclosed areas. Masking policies may have made sense in the early days of the pandemic, when initial evidence suggested masks could be helpful and when vaccines were unavailable and reconfiguring public spaces and ventilation were impractical on short notice, but we have much better options now.

Second, policymakers should be skeptical of calls for government to override private choices made by individuals and by businesses and other organizations either to mask or not mask. Some people may look at the evidence and believe masking is worthwhile; others may not. (And keep in mind, masks have resource, environmental, social, and financial costs.) The unsettled science of masking does not appear to justify government's overriding those private choices.

And third, policymakers and everyone else should guard against a false sense of security from masking. The Peltzman Effect could lead mask-wearers to take greater risks with COVID—endangering themselves and others—than they would take otherwise.

To be clear, the point *isn't* that the danger of COVID is so small that people can go maskless. Rather, the point is that COVID is so dangerous that masking doesn't provide much benefit—and cotton masks seem to provide no benefit at all. I'm reminded of the Sesame Street sketch where Bert discovers Ernie holding a banana to his ear and asks why he's doing that. To keep alligators away, Ernie explains. But there are no alligators on Sesame Street, Bert points out. "Right," Ernie replies. "It's doing a good job, isn't it Bert?" Cloth masks may be no more effective against COVID—and higher-quality masks only a little more effective—than bananas are against alligators, but there's plenty of virus in our communities.

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