

1. Mark your confusion.
2. Show evidence of a close reading.
3. Write a 1+ page reflection.

Spate of New Research Supports Wearing Masks to Control Coronavirus Spread

Source: Ben Guarino, Chelsea Janes and Ariana Eunjung Cha, *Washington Post*, June 13, 2020

Four months of discord about the coronavirus epidemic have transformed the cloth mask into a potent political symbol, touted by Democrats as a key part of communal responsibility, labeled by some GOP leaders as a sign of government overreach and as a scarlet letter pinned on the weak.

But as partisan interests sew symbolism and controversy into masks, scientists are trying to provide answers about how effectively those masks prevent transmission of the coronavirus, and what role they should play in efforts to limit the pathogen's spread.

Several new studies published this month support wearing masks to curb the transmission of the novel coronavirus. The broadest, a review funded by the World Health Organization and published in the journal *Lancet*, concluded that data from 172 observational studies indicate wearing face masks reduces the risk of coronavirus infection.

"Our findings suggest, in multiple ways, that the use of masks is highly protective in health-care and community settings," said the author of the review, Holger Schünemann, an epidemiologist and physician at McMaster University in Ontario.

But that conclusion came with an important caveat: "We have low certainty in that," Schünemann said, meaning the authors cannot be strongly confident in the result. He spoke Friday from a small island in Italy where he and his wife, a fellow epidemiologist, were studying the prevalence of coronavirus antibodies.

The gold standard in science — a randomized, double-blinded controlled trial — is impossible to conduct in a pandemic, so researchers have turned to other analyses, said Andrew Noymer, an associate professor of population health and disease prevention at the University of California at Irvine who was not part of the review.

Reviews such as the *Lancet* report compile data from many smaller reports to synthesize those findings. Schünemann cautioned that the studies collected in the *Lancet* article were observational, not randomized trials. Observational research, which doesn't have a change imposed by scientists, generally has more limitations than controlled studies. The influence of outside factors cannot be eliminated, for example.

Face masks appear to be most effective when supplemented with hand-washing and physical distancing, Schünemann and his colleagues said. Most studies in the review analyzed face masks in hospitals or other medical settings, and some took place in households where an infected person lived.

The studies don't settle the question of whether the protective benefit of a face mask derives from the barrier it creates — or from behavior changes it might prompt. The mask could remind people not to touch their faces or serve as a visual reminder of a dangerous virus lurking.

Wearing N95 respirators, compared with disposable surgical masks or reusable cotton masks, was more strongly associated with a reduction in risk of infection, but that was another low-certainty conclusion, Schünemann said.

"Anecdotally, it appears that face-mask use is an important control against multiple modes of SARS-CoV-2 transmission," including droplets and aerosols, said Jeffrey Shaman, an epidemiologist at Columbia University.

He highlighted Asian countries such as South Korea, Taiwan and Vietnam that had high rates of face-mask use early in the pandemic. They "have had better success squashing the virus and keeping their economies going," Shaman said.

Werner Ernst Bischoff, a professor of infectious diseases at Wake Forest University known for his studies on respiratory transmission of viruses, said masks are critical because the simple act of breathing releases potentially infected particles. Loud talking, yelling and singing release even more.

“When you are going about in the course of normal activities like breathing, talking and singing, you expel these particles into the environment. You want to create a seal,” said Bischoff, who said he sees masks as the critical element in preventing transmission.

Mask use varies dramatically from state to state and even city to city, according to interviews with health officials in several states during the last three weeks. Epidemiologists have bemoaned the patchwork approach to mask mandates, arguing that mixed messaging from federal, state and local levels leads to apathy and skepticism toward the measure.

The Centers for Disease Control and Prevention recommends cloth face coverings where social distancing isn’t possible. The CDC issued that guidance only after a tussle with the White House, and President Trump has eschewed wearing a mask at public appearances, even in a Michigan manufacturing plant that requested he do so.

Friday, the CDC released guidance on mass gatherings, which are reappearing in the public square with ongoing protests and political rallies. Trump announced he will begin holding full-fledged campaign rallies next week.

The guidance urges venues hosting gatherings to require staff to use cloth face coverings, particularly when social distancing is difficult. The guidance also recommends that event hosts urge people to bring and use their own cloth face coverings.

The guidance says those recommendations are intended only to supplement, not replace, local and state recommendations, which vary dramatically. New York Gov. Andrew M. Cuomo (D) mandated wearing of masks in public April 17. Mask-wearing became so ingrained that in May shoppers hectoring a woman who hadn’t covered her face, compelling her to leave a Staten Island grocery store.

Maine, Massachusetts and the District are among jurisdictions that have instituted similar requirements. Other states have directed workers in restaurants and other businesses to wear masks, while recommending that residents follow suit.

An Axios-Ipsos poll this month found that 48 percent of Americans said they were wearing a mask “at all times” when they left their homes. And more than three-quarters — including those people who wear masks ubiquitously — said they wear their masks at least sometimes when they leave their homes. A Washington Post-University of Maryland national poll in May found 80 percent of Americans said it was “necessary” for people in their community to wear a mask when coming close to people outside their home; 20 percent said masks were “not necessary.”

Politicization has complicated the issue. Some GOP leaders associated pro-mask messaging with Democratic leadership and labeled masks a costume of the coastal elite. Some Republican lawmakers have criticized mask mandates as evidence of government overreach, and some have branded those wearing masks as weak.

Others, like GOP North Dakota Gov. Doug Burgum, have made impassioned pleas to constituents to ignore politicization of masks.

“I would really love to see in North Dakota that we could just skip this thing that other parts of the nation are going through where they’re creating a divide — either it’s ideological or political or something — around masks versus no mask,” Burgum said in late May.

Orange County, Calif., on Thursday became the latest jurisdiction to rescind a mask mandate even as it experienced its largest increase in cases, with hospitalizations rising.

Face coverings in public will be recommended — not required — going forward in Orange County. The order was issued by health care agency director Clayton Chau, who replaced Nichole Quick. She resigned Monday following a firestorm of criticism from elected officials and some residents who questioned the need for masks.

“Most of anti-maskers seem to be politicians who do not have scientific experience,” said Noymer, the University of California professor.

With colleagues, Richard Stutt, a University of Cambridge researcher who simulates disease spread, published a model Wednesday in Proceedings of the Royal Society A that shows widespread mask use, plus lockdown orders, greatly slows the virus's spread.

"You can do lockdown, you can do masks, but you get the best result when you combine them," Stutt said.

They made some conservative assumptions, including that coverings were not perfectly protective, but their simulation suggests that's not necessary to lower the rate of transmission.

Unlike N95 masks or face shields, bandannas and cotton coverings cannot stop the smallest droplets. But Stutt said crude coverings that block only large droplets of expelled saliva and fluid can still help — in part because bigger volumes presumably contain more virus.

Wearing masks could have another benefit, a study found: People may stand farther away from other people who wear masks, making it less likely for the virus to travel from person to person, though that assertion has not been peer-reviewed.

Experts have not fully embraced all of the new research promoting mask use. A report published Thursday in the influential Proceedings of the National Academy of Sciences journal, written by a group of aerosol chemists including the Nobel Prize-winning discoverer of the Antarctic ozone hole, was slammed on social media for using poor methods to estimate the number of New Yorkers saved by masks.

Johns Hopkins University infectious-disease epidemiologist Kate Grabowski suggested the journal should consider a retraction. And Willem van Schaik, a professor at the Institute of Microbiology and Infection at the University of Birmingham in England, tweeted that it was "terrible."

Renyi Zhang, a Texas A&M University atmospheric sciences professor and an author of the PNAS paper, dismissed the calls for retraction. "Our paper is based on solid scientific evidence," Zhang wrote in an email. "The method and conclusions from the paper can certainly be debated in an open, scientific fashion, but not on the basis of people's perceptions."

The PNAS paper provides an extrapolation of real world data while the Royal Society article involves a simulation. Despite the weakness of some of the research, Noymer said that when combined with previous studies — including a 2013 paper from the Cambridge University Press that found cloth masks could reduce droplet spread — the overall findings point to the benefits of masks.

"Both studies support this anecdotal observation and provide some quantification of the effects of face masks," said Shaman, the Columbia University epidemiologist, who was not involved with those reports.

Noymer said masks will probably only reduce the amount of droplets, not stop them completely, but that may be enough to prevent someone from becoming infected or result in a milder case.

"We don't need to be in scuba gear. Even if not an absolute barrier, it still helps," he said.

Possible Response Questions:

- What are your thoughts about wearing masks? Explain.
- Pick a word/line/passage from the article and respond to it.
- Discuss a "move" made by the writer in this piece that you think is good/interesting. Explain.