

Medical Workers Should Use Respirator Masks, Not Surgical Masks

The surgical masks used in risky settings like hospitals offer much less protection against the coronavirus, an analysis found.

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A new analysis of 172 studies, funded by the World Health Organization, confirms what scientists have said for months: N95 and other respirator masks are far superior to surgical or cloth masks in protecting essential medical workers against the coronavirus.

The results, published on Monday in *The Lancet*, make it clear that the W.H.O. and the Centers for Disease Control and Prevention should recommend that essential workers like nurses and emergency responders wear N95 masks, not just surgical masks, experts said.

“It’s been disappointing that both the W.H.O. and the C.D.C. have suggested that surgical masks are adequate, and they’re clearly not,” said David Michaels, a professor at George Washington University who headed the Occupational Safety and Health Administration under President Obama.

“Reliance on surgical masks has no doubt led to many workers being infected,” he said.

N95 masks offered 96 percent protection, the analysis found, while the figure for surgical masks was 67 percent. The findings are particularly important as the United States moves to reopen the economy, Dr. Michaels said.

Workers in health care settings are not the only ones at high risk of coronavirus infection: employees in meatpacking plants and some farms are all also at high risk of coronavirus infection and could benefit from N95 masks, he said.

The W.H.O. has not endorsed universal wearing of masks, although most of its member governments adopted the practice months ago. The organization’s stance has frustrated many public health experts who see masks as a simple, inexpensive and highly effective strategy to help contain the pandemic, especially given that the virus can be transmitted by people who do not know they are ill.

“When there is uncertainty and you don’t know everything about a disease, you have to be precautionary, which means you have to assume the worst and provide the best for health care workers,” said Dr. Raina MacIntyre, an epidemiologist at the University of New South Wales in Sydney, Australia, who wrote a commentary accompanying the paper.

“This kind of denial, what purpose is it serving — except to harm health care workers?” she said.

Previous studies have shown that the universal wearing of masks is effective. If anything, the new study does so based on poorer evidence, said Jeremy Howard, a distinguished research scientist at the University of San Francisco, and a co-founder of the global #Masks4All movement.

“This is probably what the W.H.O. needs to change their guidance, even though it shouldn’t be,” Mr. Howard said. “Such is life. It will save lives, so that’s good.”

The new analysis also suggests that covering the eyes with face shields, goggles and glasses may provide additional safeguards for health care workers and people in the community.

The report is among the first to lay out evidence specific to coronaviruses, rather than extrapolating from data on other respiratory viruses.

The coronavirus is thought to spread primarily through droplets expelled when an infected person coughs, sneezes, sings, talks or even breathes. Some infections may also be caused by people touching a contaminated surface and then their mouth, nose or eyes.

Study after study has indicated that the virus can also spread via tiny droplets less than 5 microns, called aerosols. (A micron equals one millionth of a meter.)

But the W.H.O. has so far not acknowledged this risk and has not backed the universal use of masks. “There’s this fear around saying airborne — but that’s what it is,” Dr. MacIntyre said.

A recent review in the journal *Science* took direct aim at the W.H.O.’s reluctance on this issue, saying the organization’s recommendations for physical distancing and hand washing were based on studies “carried out in the 1930s.”

The C.D.C. did not recommend masks till April 3. Even now, its guidance says surgical masks offer enough protection for health care workers unless they are involved in procedures that produce aerosols.

The C.D.C. initially recommended N95 masks for all health care personnel. Dr. MacIntyre said the agency later downgraded its recommendations because of a shortage of N95 masks and personal protective equipment.

“Guidelines should be based on evidence, not on supplies,” she said. “It’s like telling an army, ‘Oh sorry, we’ve run out of guns, just take these bows and arrows and face the enemy.’”

She noted that N95 masks were inexpensive to produce and that other countries, including Australia, had repurposed existing manufacturing facilities to make the masks.

The Coronavirus Outbreak ■

Frequently Asked Questions and Advice

Updated June 5, 2020

● How does blood type influence coronavirus?

A study by European scientists is the first to document a strong statistical link between genetic variations and Covid-19, the illness caused by the coronavirus. Having Type A blood was linked to a 50 percent increase in the likelihood that a patient would need to get oxygen or to go on a ventilator, according to the new study.

● How many people have lost their jobs due to coronavirus in the U.S.?

The unemployment rate fell to 13.3 percent in May, the Labor Department said on June 5, an unexpected improvement in the nation’s job market as hiring rebounded faster than economists expected. Economists had forecast the

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“We’re not talking about making a space shuttle,” she said. “We’re talking about making a straightforward piece of equipment that’s quite cheap to manufacture.”

A C.D.C. spokesman was unable to address the *Lancet* study but said the agency is constantly evaluating new science and “adjusts its guidance accordingly.”

No precaution is a guarantee against infection. But the new report estimates how effective some of them seem to be.

Standing more than three feet away cuts the risk of transmission to 3 percent from 13 percent, the analysis found. Use of masks reduces the odds of infection to 3 percent from 17 percent, and eye protection to 6 percent from 16 percent. The researchers emphasized that people should also continue to wash their hands frequently.

The review also offers some practical information for disease models. For example, it suggests that contact tracing for people who are potentially exposed should include anyone who has been within six feet of an infected person.

The analysis is based on observational studies conducted during the coronavirus pandemic, as well as the SARS and MERS epidemics. It can offer only moderate certainty — although the study “underplays the results,” Dr. Michaels said.

The evidence is strong enough to warrant changes to recommendations for essential health care workers and to plan for mass production of N95 masks, Dr. Michaels said.

“The Trump administration needs to be less worried about producing meat, and more about producing N95s and other P.P.E. needed to save the lives of essential workers,” he said.