Will Wearing a Face Mask Protect Against Coronavirus?

By the Water Quality & Health Council

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In a nutshell...

This article provides essential information on face mask use during the COVID-19 coronavirus outbreak. Topics covered include: who should wear a face mask, how to use and when to discard face masks, and the potential consequences of a false sense of security from wearing a face mask. Other measures to help prevent the virus’ spread, such as frequent hand washing, are outlined.

As the latest coronavirus, formerly called the “2019 Novel Coronavirus (2019-nCoV)” and now named “COVID-19 virus,” continues to spread, face masks are in high demand, especially in China, “ground zero” for the outbreak. But will wearing a face mask protect against COVID-19? Who should wear them? Are there any down-sides to wearing a face mask? In this article we answer three pertinent questions about using face masks during the COVID-19 outbreak.

1. Should I wear a face mask?

The U.S. Centers for Disease Control and Prevention does not recommend people who are well wear a face mask to protect themselves from coronavirus. Face masks should be reserved for those who have been exposed to COVID-19 and are showing symptoms of infection (e.g., coughing and sneezing). Wearing a face mask could help prevent the spread of COVID-19 from an infected individual to others, but masks must be fitted and worn properly, including leaving no gaps between the face and the mask. A recent study of face masks used to protect Beijing residents from particulate air pollution (presumably the same generally available face masks being used now in China against COVID-19) indicates the mean percent reduction of 2.5 micron diameter particles through face masks to be between 99.74 and 71, depending on flow rate and mask material. According to the World Health Organization (WHO) website, damp masks should be discarded in a closed bin and replaced. Single-use masks should not be reused. It is also important to wash hands thoroughly with soap and water after removing masks.

“N95” face masks are the standard for health care workers when taking care of patients with respiratory diseases. An N95 face mask covers—at a minimum—the nose and mouth of the wearer and filters out at

1 1 micron = 0.001 millimeter = 0.00004 inch
least 95% of very small particles (3 micron diameter), including viruses and bacteria. That said, N95 face masks must be fitted properly, and they are not appropriate for people with facial hair. The wearer of an N95 face mask must meet minimum physical requirements that allow breathing without difficulty while wearing a face mask.

2. Are there any risks associated with wearing a face mask?

Wearing a face mask can give the wearer a false sense of security such that he or she might ignore other significant preventive steps, such as frequent hand washing. As Professor Dale Fisher, chair of the WHO’s Global Outbreak and Alert Response Network noted in a recent interview, “Healthcare workers are trained how to use them [face masks], how to dispose of them properly, when to use them.” He contrasts their use by healthcare workers with the general public: “I see a lot of people that might have a mask but it might be on their forehead and it might be under their chin.” There is a risk that touching the mask may be followed by the wearer touching his or her eyes or other part of the face or shaking hands with someone, which could spread the virus.

If the mask is uncomfortable, the wearer may be compelled to touch it or his or her face frequently, raising the risk of contamination. Finally, wearing a face mask when you are not sick or showing symptoms could help deplete the supply of face masks needed for healthcare workers and the truly sick. This is happening now even in the United States.

3. If face masks are not as important as I thought, what should I do to prevent coronavirus?

The number one way to help prevent getting COVID-19 is to wash your hands frequently and thoroughly with warm water and soap. If soap and water are not available, use an alcohol-based hand sanitizer. Keep your hands away from your face. Avoid close contact with people who are sick and their immediate environment. Stay home when you are sick, avoiding close contact with other household members. Cover coughs and sneezes with a tissue or your elbow. Discard used tissues in the trash and wash your hands immediately afterwards. Clean and then disinfect frequently touched surfaces, such as door knobs and railings. A study of other coronaviruses, including SARS and MERS, found the viruses survive on surfaces between four and five days on average, and that low temperature and high humidity may further increase their lifespan. The researchers note that findings should be transferable to COVID-19 (EurekAlert! News Release). The WHO recommends using a diluted bleach solution made of 1 part chlorine bleach to 99 parts water. (For example, add one teaspoon of regular bleach to two cups of water.) And stay as healthy as you can with good nutrition, adequate sleep, and healthy exercise.

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