

To Wear or Not to Wear a Mask

By Michael Rocha, MD

New Bedford, Massachusetts – In a well-meaning effort to fight COVID-19, there is a lot of information and even more opinion circulating about the use and effectiveness of various masks. The controversies can be confusing. Guidelines have wavered and different countries have adopted a spectrum of approaches.

As a part of their national strategies, some countries have encouraged widespread use of masks, both in healthcare and for the public. Notably, there was widespread mask usage by the US public during the 1918 flu pandemic. On April 3, 2020, the CDC made the recommendation to wear “cloth face coverings in public settings where other social distancing measures are difficult to maintain (e.g., grocery stores and pharmacies) especially in areas of significant community-based transmission.” (CDC.gov)

There are two types of masks commonly used by healthcare professionals: N-95 masks and surgical masks. The indication for when each is used often depends on whether the virus may be in aerosolized form or droplet form. An aerosolized virus is suspended in the air like a gas or fog and may be present for three hours in some settings. This is often much more transmissible and is the greater threat to healthcare professionals. A droplet virus particle is a relatively heavy particle that falls to the ground or any surface by gravity, usually within 6 feet.

N-95 masks are among a class of masks that are named based upon how many particles are filtered. A N-95 mask can filter 95% of particles in the air and must be professionally fit-tested to ensure a complete, proper seal. They are widely used for diseases such as tuberculosis. Currently, they are being used in situations when there is extremely close contact such

as when a breathing tube is placed.

N-95 masks were made to be used once and discarded. In the current pandemic, healthcare workers are often given a single N-95 mask to last a day or more and may be reused. It's unclear if the masks retain their effectiveness after a few hours. Production of N-95 masks is being increased but is limited by lack of materials. There are not nearly enough N-95 masks currently available to keep every healthcare professional adequately protected. EVERY available N-95 mask should be in the hands of healthcare professionals.

Surgical masks are made of moisture-resistant inner- and outer layers with an inner filter. They are used in hospital situations where the risk of aerosolized virus particles is low. Surgical masks are not airtight but when worn correctly, provide protection. They are currently being used by hospital personnel in situations where aerosolized virus is not a concern. Supply is not unlimited and this is playing a role in the conflicting recommendations by various health and governing bodies. Like N95 masks, surgical masks should be saved for use by healthcare workers.

There is another type of mask that you likely see frequently: cloth masks. These masks are not hospital-grade but are being used by healthcare professionals when N-95 and surgical masks are not available. Some healthcare professionals are using cloth masks over N-95 masks to extend their potential life-span. These are the masks that are now recommended for the general public to use.

There are limitations to use of cloth masks but they may have a critical role in slowing the spread of COVID-19. A cloth mask itself will not prevent the person wearing it from contracting COVID-19. Its ability to filter air particles is at best 50% and unlike N-95 masks, it does not have a tight seal around the mouth and nose. If it is not taken off properly, there is a risk of contaminating oneself and any

surface it touches.

One purpose of a cloth mask is to prevent the person wearing it from spreading COVID-19. The cloth mask prevents secretions from spreading by essentially collecting them on the fabric. They may also help remind people to avoid touching their face. If every person wore one when in public, it could help prevent asymptomatic people from spreading the virus.

In countries that encourage universal mask usage by the public, there appears to be a slower spread of the virus which is critical to preventing our healthcare system from becoming overwhelmed. Wearing a mask reduces the transmission of the virus from one person to another. It's crucial though that people wearing a mask avoid a potential false sense of security. The role of a cloth mask is in conjunction with, not in place of, social distancing and good hand hygiene.

If you do wear a mask, please learn to use it properly to ensure safety and effectiveness. Before putting it on, wash your hands and make sure the mask is clean. Determine the orientation of the mask (which side is inside/outside and which edge is close to the nose). Marking this with a pen is a good idea if you plan on removing and reusing it through the day before washing it. If the mask gets moist or wet, it may not be as effective and it may breed germs.

If any obvious contaminants or droplets land on the mask, remove and do not reuse until it is washed. Avoid readjusting the mask after exposure, but if you must, use washed hands to do so and wash your hands after you adjust the mask. Do not readjust your mask with unwashed hands. Have a high index of suspicion that the straps or loops of the mask may be contaminated.

If you store an unwashed mask in a paper bag or container you can contaminate the inside of the mask if you orient it in alternating positions. Assume the outside of the mask is

contaminated and treat surfaces that it may touch as contaminated. Wash the mask often and after every use, as regular laundry soap deactivates the virus. It's best to have at least two masks so that if one becomes moist or soiled, another is available while the first is washed. Know the limitations of the material of the DIY mask.

If you decide to use a mask, please save ALL N-95 and surgical masks for our healthcare professionals and first responders. They have the greatest exposure and it appears that healthcare professionals who contract COVID-19 may have a more severe case. We MUST protect our protectors.

The CDC has now recommended cloth masks for all when going out in public for essential needs. This will now be an important part of our efforts along with social distancing and hand washing to do our job and beat this virus.

#Masks4All #SaveN95SurgicalMasks4Healthcare

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- Not wearing masks to protect against coronavirus is a 'big mistake,' top Chinese scientist says. Jon Cohen in Science Magazine on March 27, 2020
- To fight the spread of coronavirus, it's time to wear masks in all hospitals. Harlan Krumholz, MD in Washington Post on March 31, 2020
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