

FREQUENTLY ASKED QUESTIONS – MASKS FOR REDUCING COVID-19 SPREAD

The opinions stated here are based upon 30 years' experience working in industrial health and safety and being a retired Certified Industrial Hygienist and Certified Safety Professional with a MS in Public Health (Industrial Hygiene major). The purpose of these FAQs is to help people make informed decisions about masks and better manage wearing some sort of respiratory protection during the COVID-19 pandemic. It is not meant to supersede any ordinances or regulations enacted by government entities. The author assumes no liability.

The World Health Organization (WHO) states that the COVID-19 virus is primarily transmitted between people via respiratory droplets and contact routes. Droplet transmission occurs when a person is in close contact (within 3 feet) with an infected person and exposure to potentially infectious respiratory droplets occurs. The goal of a mask is to reduce or eliminate this transmission.

There is also the possibility of transmission from people who are infected and shedding virus but have not yet developed symptoms (asymptomatic). The incubation period for COVID-19 (time between exposure to the virus and symptom onset) is about 5-6 days but can be as long as 14 days.⁽¹⁾

The advantage of healthy people wearing masks is that it reduces potential exposure risk from infected people before they develop symptoms. It is also important to maintain social distancing and hand washing.

What is the difference between N95 and a mask?

A N95 mask is designed to protect the wearer from the environment. A mask is supposed to protect everyone from you if you are infectious.

What exactly is a N95 mask?

A N95 mask is designed to protect the wearer and is meant for workplace exposures to dusts, fumes and mists. N95 is a NIOSH certification standard. NIOSH is the National Institute for Occupational Safety and Health and is a division of the Centers for Disease Control (CDC). A mask with the N95 certification is **95% efficient for particles $\geq 0.3 \mu\text{m}$ (microns)**⁽²⁾ which is adequate for the COVID-19 virus. If the N95 mask does not have an exhalation valve and fits well, it should also protect those around if the mask wearer is positive for COVID-19 and could possibly be spreading the virus.

Masks that have been certified by NIOSH have a TC (Testing and Certification) number on the respirator. There are many counterfeit respirators on the market these days so always buy from a reputable seller.

If I cannot get a N95 mask, what are the best choices for masks?

That is a tough question since there are so many different masks on the market with varying levels of effectiveness. There is no certification for these masks so you need to look closely at how they are constructed and the materials used to determine which work best.

There are two major factors to consider: **adequate filtration** and **breathability**. If a material is very effective at filtering the virus but is very hard to breathe through you will not wear it. The goal is to optimize both.

- **N95** masks are literally impossible to buy as supplies are being reserved for medical facilities. These are best if you can find one.
- **KN95** masks are the Chinese equivalent to the N95 mask.⁽⁸⁾ Like the N95, this type of mask protects you and protects those around you. It is made of a non-woven material which is effective at filtering the virus and offers acceptable breathing resistance. These are considered to be disposable and cannot be washed, but they can be reused as long as the mask is clean and not damaged.
- **Surgical Masks** are meant to help block droplets, splashes, sprays, or splatter that may contain viruses and keeps it from reaching your mouth and nose. Surgical masks may also reduce exposure of your saliva and respiratory secretions to others. Because they fit loosely, surgical masks do not provide complete protection from viruses.^(3, 4)
- **Fabric Masks** are being manufactured by many companies and individuals which are made out of many different materials and construction methods. Some are better than others and some are ineffective:⁽¹⁾
 - Single layer and loosely woven fabrics are ineffective. This includes bandanas and scarves.
 - Tightly woven fabrics are better.
 - Most non-woven materials work better than woven fabrics at filtering and breathability.
 - Masks should be adjustable so that they fit snugly creating a seal around the face.
 - Masks should have an adjustable metal clip that can be shaped to fit the contour of your nose. This helps with sealing the mask and reduces glasses fogging up.
 - Some masks have non-woven filter inserts which are better than just fabric.
 - Ideally the mask should have **3 layers**:
 - Inner layer of cotton or cotton-blend fabric.
 - Middle layer of a synthetic non-woven material.

- Outer layer of a water resistant cotton material which may limit external contamination from penetration through the mask.
- Avoid stretchy fabrics.

How do I wear a mask properly?

It does not matter how good the mask is you are wearing if you don't wear it correctly!

- A mask must fit snugly to work properly. It should seal around the entire face. Loose fitting masks are less effective than tight fitting masks.
- If you feel air flowing in around the mask while breathing (especially around the nose), it is not fitting well. Tighten the mask.
- If you have facial hair, you will not get a tight seal.
- If the mask is not covering both the mouth and nose, it is totally ineffective. (*Really people, covering your mouth but your nose is sticking out???*)
- Once on your face, adjust it to be comfortable and correctly placed.
- Avoid touching the mask once it's on.
- When putting a mask on or taking it off, do it from the straps, not the mask.
- Follow this link for an OSHA (Occupational Safety and Health Administration) video on how to fit check a mask <https://www.youtube.com/watch?v=pGXiUyAoEd8>.

How do I properly take care of a mask?

- Keep it clean. Fabric masks can usually be washed per the manufacturer's instructions. Wash in hot water and dry in a hot dryer. Non-woven fabrics might not be washable – check with the manufacturer.
- Don't touch the inside of the mask that is in contact with your face.
- Do not decontaminate a mask with a chemical agent like Lysol.
- Paper or non-woven material masks are considered disposable and should be thrown away when the mask is no longer hygienic or has been damaged. This does not mean you have to throw it away after each use. If you are careful a disposable mask can last through many uses.
- Always store masks in a clean place (zip lock bag) away from possible contamination.
- Keep your mask dry.

When should I replace my mask?

If your mask is disposable, replace it when it becomes more difficult to breathe through or the filter becomes wet, dirty, unhygienic or damaged. Replace fabric masks if they become damaged or stretch out of shape. Replace a mask when it no long fits tightly to the face.

I can't wear a mask because of medical reasons. What do I do?

Because of increased breathing resistance, some people with medical conditions such as respiratory, cardiac or psychological issues can't wear a mask. If you can or cannot wear a mask is a decision made by your healthcare provider and you. Most people can wear a mask at least for a limited time. Most government-issued mask ordinances have a provision for people who are medically determined to be unable to wear a mask.

What about face shields?

Wearing a face shield will provide some level of protection which is not perfect, but is better than nothing. There have been a few promising studies of the effectiveness of face shields protecting wearers from virus exposure.^(5, 10) Wearing a face shield and a face mask together will offer much greater protection as the face shield will protect the mask from exposure and prevents aerosol contact with the skin and eyes – a possible route of entry. Wearing only a face shield might not be consider acceptable to some government-issued mask ordinances. Check with the government entity for more direction.

I've heard that wearing a mask reduces oxygen.

That is not true. A mask increases breathing resistance and can sometimes make it harder to breathe but you are still getting adequate oxygen.^(6, 9) Masks also do not cause a buildup of exhaled carbon dioxide within the mask.⁽⁷⁾ Wearing a mask does not compromise your immune system.

When wearing a mask seems like it is too much, take a **BREATH**ER - step away from all people and take the mask off for a while.

I've heard that if my mask has an exhalation valve, it does not work for a virus.

There are many N95 masks with exhalation valves which make them easier to breathe through because while you are breathing air in through the filter, you are breathing out through the exhalation valve, which is easier. The industrial N95 is designed to protect the wearer, not anyone around them so it is possible that if the wearer is shedding the virus that they could exhale it through the exhalation valve. This is very unlikely as the virus would usually be in exhaled droplets which are unlikely to exit through the valve. The real solution here is if everyone is wearing a mask, everyone is protected.

WEAR A MASK • WEAR IT CORRECTLY • KEEP SOCIAL DISTANCE • WASH YOUR HANDS

References:

- (1) Advice on the use of masks in the context of COVID-19: Interim guidance, 5 June 2020. World Health Organization. Retrieved June 30, 2020, from <https://apps.who.int/iris/handle/10665/332293>.
- (2) NIOSH-Approved Particulate Filtering Facepiece Respirators. National Institute for Occupational Safety and Health, Centers for Disease Control. Retrieved June 30, 2020 from https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html.
- (3) N95 Respirators, Surgical Masks, and Face Masks. US Food and Drug Administration. Retrieved June 30, 2020 from <https://www.fda.gov/medical-devices/personal-protective-equipment-infection-control/n95-respirators-surgical-masks-and-face-masks#s7>.
- (4) Understanding the Difference – Surgical Mask and N95 Respirator. US Centers for Disease Control. Retrieved June 30, 2020 from <https://www.cdc.gov/niosh/npptl/pdfs/UnderstandDifferenceInfographic-508.pdf>.
- (5) Perencevich, E.N., D.J. Diekema and M.B. Edmond. Moving Personal Protective Equipment Into the Community: Face Shields and Containment of COVID-19. Journal of the American Medical Association, April 29, 2020. Retrieved June 30, 2020 from <https://jamanetwork.com/journals/jama/fullarticle/2765525>.
- (6) MYTH: Face Masks Can Reduce Oxygen Getting to the Lungs and Bloodstream. Retrieved June 30, 2020 from <https://digitalmedic.stanford.edu/myth/myth-face-masks-can-reduce-oxygen-getting-to-the-lungs-and-bloodstream/>.
- (7) Killer COVID-19 Masks? The Truth About Trapped Carbon Dioxide. Hartford Healthcare. Retrieved June 30, 2020 from <https://hartfordhealthcare.org/about-us/news-press/news-detail?articleid=26712&publicid=395>.
- (8) 3M Respirators in International Packaging Made Available in US during COVID-19. 3M Company. Retrieved June 30, 2020 from https://www.3m.com/3M/en_US/worker-health-safety-us/covid19/airlift/.
- (9) Hill, D. G., From the Frontlines: The Truth About Masks and COVID-19. American Lung Association. Retrieved July 1, 2020 from <https://www.lung.org/blog/covid-masks?fbclid=IwAR3yHiV5J5agR4kcFZH8iWSWouQe5HUVUWTuz6Brz3A9LDPN5emO4bYZjOg>.
- (10) Lindsley, W.G., J.D. Noti, F.M. Blachere, J.V. Szalajda and D.H. Beezhold. Efficacy of Face Shields Against Cough Aerosol Droplets From a Cough Simulator. Journal of Occupational and Environmental Hygiene, 2014. Retrieved July 1, 2020 from <https://pubmed.ncbi.nlm.nih.gov/24467190/>.