

Respiratory Safety 101: Differences Between Respirators and Masks

In times like these, it's important to understand that not all face coverings are the same.



Before the coronavirus (COVID-19) outbreak, you may have never heard the term “N95 respirator” or thought about how it works or differs from an everyday face mask. But, there are some major differences to know. Read on to learn more about different types of disposable respirators and masks, and what to consider when deciding what you want to use to help protect yourself and others.

Do respirators and masks provide the same type of protection?

Thinking they are the same is a common misconception. Respirators can help reduce your exposure to breathing in particulates, even very small particles floating in the air. Face masks however do not provide the same level of protection.

A simple way to think about it: respirators can help protect you while you breathe in; masks are more about protecting those around you as you breathe out, cough or sneeze.

For a product to meet government requirements for certified respiratory protection, it must be able to capture and filter particles of varying sizes — including those so small you can't see them. And for tight fitting respirators, it also needs to form a tight seal around your face. When used correctly, N95 respirators can filter at least 95% of non-oily airborne particles, such as liquid droplets that may contain viruses and bacteria. Because of these protective capabilities, N95 respirators play a crucial role for healthcare workers and first responders on the front lines of the COVID-19 pandemic.

What are some key differences between masks and respirators?



Cloth and single use face masks

Wearing a cloth or single use face mask can help reduce the spread of germs in the community because they may help block large particle droplets exhaled by you from reaching others when you speak, cough, breathe or sneeze. Cloth and single use face masks do not form a tight seal around your mouth and nose, which limits their ability to protect you from germs that may be in the air since an airborne particle, such as a virus, could leak in through or around the edges.



Surgical masks

This type of face mask is similar to a cloth face mask, however, a surgical mask meets specific standards for fluid resistance and is FDA-approved to be used by doctors and nurses performing surgery.

Surgical masks help protect the wearer from high velocity streams of bodily fluid, as well as help reduce the chances that the wearer will spread potentially infectious material. This is why healthcare workers will wear them to help protect a patient. Patients who are sick may also be asked to wear them to help protect others around them.

Because surgical masks fit loosely on the face, they do not provide predictable protection from germs or contaminants transmitted by coughs, sneezes or certain medical procedures since those fine particles in the air can leak in around the edges. This is one of the key reasons why they're not used to help protect the wearer from particles. This is where an N95 respirator comes into play.



N95 standard disposable respirators

An N95 filtering facepiece respirator is a respiratory protective device designed to create a tight seal to the face so that contaminants do not leak in around the edges. The entire surface of the respirator is a

filter, which makes it very efficient at capturing airborne particles, such as liquid droplets that may contain viruses and germs.

To get the “N95” designation, a respirator must filter at least 95% of non-oily particles, including very small particles that can’t be seen (such as a virus) during careful testing. If properly fitted, the filtration capabilities of N95 respirators exceed those of face masks. However, it’s important to remember that a properly fitted respirator is intended to reduce your exposure but not eliminate it completely.



N95 surgical disposable respirators

An N95 surgical disposable respirator is like a standard N95, but also meets other specific standards such as fluid resistance and is FDA-cleared to be used in surgery. They are specifically for healthcare workers.

If cloth and single use face masks aren’t proven to protect me from breathing in germs, why should I wear one?

By wearing a mask you play a role in helping protect others in your community by reducing the likelihood of you spreading germs to others.

Even though they don’t offer government approved respiratory protection, simple cloth face masks and coverings can help slow the spread of airborne viruses. They offer a barrier to help keep germs from coughing and sneezing — and even talking — from reaching other people, which is especially important for asymptomatic carriers who don’t even know they are infected. Additionally, they can also be that physical reminder to not touch your nose and mouth.

Currently, the U.S. Centers for Disease Control and Prevention (CDC) recommends “wearing 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.” The CDC’s full guidelines on face masks can be found [here](#).

A Quick Glance at Differences Between Masks and Respirators



	Cloth face mask	Single use face mask	Surgical mask	N95 Standard Disposable respirator	N95 Surgical Disposable respirator
Typical applications/ Users	General public to help cover mouth and nose while in public. Reusable.	General public to help cover mouth and nose while in public. Single use.	Doctors, nurses and other health care workers and Med Professionals performing surgery or seeking to help prevent them from infecting patients with their own germs.	Professional contractors and construction and other workers on the job; for homeowners doing DIY projects and General Public use to help reduce the number of inhaled non-hazardous airborne particles, such as dust, pollen and airborne germs.	Health care professionals performing procedures, to help protect themselves from airborne particulate hazards. Also helps provide fluid resistance.
May help protect others from particles exhaled by the wearer (see CDC guidelines)	Yes	Yes	Yes	Yes	Yes
Designed to help protect the wearer from exposure to airborne particles when worn properly (inhaled air filtration)	No	No	No	Yes	Yes
Designed to fit tightly on the face and create a seal when worn properly	No	No	No	Yes	Yes
NIOSH N95 Approved	No	No	No	Yes	Yes
Fluid Resistant (e.g. ASTM F1862)	No	No	Yes	No	Yes
Washable	Yes	No	No	No	No

For information on COVID-19 and recommended products, please consult applicable health authorities, such as the CDC or Health Canada.



It's critical to note that wearing a face mask does not reduce the need to maintain 6-feet social distancing. Additionally, [the CDC recommends](#) the following to help protect yourself and others:

- Wash your hands often with soap and water for at least 20 seconds, or use hand sanitizer with at least 60% ethanol or 70% isopropanol if soap and water are unavailable
- Avoid close contact with people who are sick
- Cover coughs and sneezes
- Clean and disinfect everyday objects and surfaces
- Monitor your health and stay home if you are sick

Can disposable respirators or cloth masks be reused?

For normal use with non-harmful dust and debris, disposable respirators can, in fact, be used until they are dirty, damaged or difficult to breathe through. However, if you have used a respirator in public to help protect yourself from airborne particles, such as liquid droplets that may contain germs and viruses, care should be taken when handling the respirator, as those particles may be captured on the filter fibers and remain on those fibers. The respirator should be removed with care so as to not touch the outside surface that may be contaminated and then appropriately handled after use.

On the other hand, homemade cloth masks or face coverings, which are typically machine washable, should be washed after each use, and can be reused. After wearing it in public, take care to not touch the outside surface when removing it and use similar caution when preparing to wash it.

What is a KN95 disposable respirator?

You may have heard about KN95 “masks”, but what exactly are they? KN95s are disposable respirators that are tested to a Chinese government standard for use in China. The required filtration efficiency is very similar to that required for U.S. N95 disposable respirators, however, they are not NIOSH approved.



Most KN95s are designed to fit facial features common in China and Asia and, as a result, some individuals with different facial features may not be able to achieve a satisfactory fit. These products may also have features that are not found in the U.S., such as a vertical fold and having earloops instead of headbands.

Why are respirators so critical for healthcare workers?

As healthcare workers and first responders fight the spread of COVID-19 and other infectious diseases, they may be exposed to germs in much higher concentrations than the general public. This is why N95 disposable respirators are so important on the job.

The current CDC guidance to wear face coverings doesn't refer to N95 respirators or surgical masks, which should continue to be reserved for healthcare workers and first responders.

Due to the current demand for personal protective equipment (PPE) outpacing supply, the CDC has [guidelines for the healthcare industry](#) to decontaminate and reuse disposable respirators.

To learn more about how 3M is supporting healthcare workers, visit [our COVID-19 response site](#).

Always read and follow product-specific user instructions.

**If you have questions, call the 3M technical service line in the U.S. call 1-800-243-4630 and in Canada call 1-800-267-4414.*

DIY/Home Use: Use ONLY in NON-HARMFUL environments.
Occupational/Hazardous Use: Use under a regulated government (e.g. OSHA) respiratory protection program.
WARNING: Limitations apply. Misuse may result in sickness or death. See product packaging and insert, or call 3M in USA at 1-800-243-4630. In Canada, call 1-800-267-4414.

