



UNDERSTANDING HOW SURGICAL MASKS AND RESPIRATORS WORK

Masks consist of layers. Many polypropylene fibres are woven in to create tortuous paths, challenging for small particles to travel through without getting stuck. The fibres also have electrostatic charges that further help particles stick to the fibres.

These masks are filters, not shields. The viruses do not bounce off the mask, but get trapped inside.

DONNING AND DOFFING MASKS AND RESPIRATORS

Understanding how these masks work provides important information on how we interact with them.

Because the particles (including the potentially harmful, COVID-19 virus) could be trapped inside the layers of the mask, it's imperative that the wearer is diligent in hygiene practices.

1. Clean your hands, either by washing with soap and water or by using an alcohol-based hand sanitizer.
2. Before putting on the mask, inspect for any tears or holes.
3. Locate the metal strip on the mask. This is the top of the mask.
4. Orient the mask so that the coloured side faces outwards, or away from you.
5. Place the top part of the mask on the bridge of your nose, molding the metal strip to the shape of your nose.
6. Carefully loop the elastic bands behind your head. The top strap should rest around the crown of your head, and the bottom one should be pulled down to rest at the base of your neck.
7. Pull the bottom of the mask down, ensuring it covers your nose, mouth and chin.
8. Perform a seal check by blowing and checking for air leakage.
9. Try to avoid touching the mask while you're wearing it. If you must touch or adjust the mask, be sure to clean your hands immediately afterwards
10. To take off the mask, remove the elastic straps starting with the bottom one first, and then the top strap. Avoid touching the front of the mask, which may be contaminated.
11. Promptly dispose of the mask in a closed garbage bin, thoroughly clean your hands afterwards.

FACE MASKS VS. RESPIRATORS

A **face mask** (surgical mask) is a loose-fitting, disposable device that creates a physical barrier between the mouth and nose of the wearer and potential contaminants in the immediate environment. The edges of this mask are not designed to form a seal around the nose and mouth.

A **respirator** is a respiratory protection device designed to achieve a very close facial fit and very efficient filtration of airborne particles. The edges of the respirator are designed to form a seal around the nose and the mouth.

Similarities between the two are:

- They are tested for fluid resistance, filtration efficiency (particulate filtration efficiency and bacterial filtration efficiency), flammability and biocompatibility
- They should never be shared.

Respirators require fit-testing to ensure that the seal of the mask is correct. Facial hair, piercings, and glasses should be considered when wearing respiratory protection to ensure that the seal is efficient.

WHAT WEARERS SHOULD DO WHEN A RESPIRATOR IS REQUIRED?

- Complete respirator training and ensure proper fit through qualitative or quantitative fit-testing before beginning any activities that require a respirator.
- Perform a seal check every time the respirator is worn.
- Clean, and sanitize or decontaminate the respirator after every use according to the manufacturer's instructions or safe operating procedures, even if it is stored in the containment zone.
- Prevent the filters or cartridge from becoming wet during decontamination.
- Replace cartridges that are near the end of service life.
- Never reuse disposable respirators or masks. Decontaminate used respirators and masks before disposal.
- Inspect the respirator after use. Dispose, or repair any defective parts.
- Remove respiratory protection at the point at which a risk assessment deems it safe to do so upon exit from the containment zone.
- Reusable respirators should be stored so that they are protected from hazards that may affect the respirators (e.g., dust, sunlight, heat, extreme cold).

| Mask | Description | Safe Handling | Training |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <p>Surgical Face Mask</p>  | Can help protect wearers from getting others sick. | Single Use | Not Required |
| <p>N95 Respirator (Disposable)</p>  | Can help protect wearer from germs by blocking out at least 95% of small airborne particles – if worn correctly. | <p>→ Can be utilized up to 5 times.</p> <p>→ Extra care required for subsequent donning/doffing as to not cross contaminate.</p> <p>→ If mask becomes wet or soiled must be disposed of and replaced</p> | <p>Pre-Use Check</p> <p>See Guidelines**</p> |
| <p>KN95 Respirator (Disposable)</p>  <p><i>**Not tested to CSA</i></p> | Can help protect wearer from germs by blocking out at least 95% of small airborne particles – if worn correctly. | <p>→ Can be utilized up to 5 times.</p> <p>→ Extra care required for subsequent donning/doffing as to not cross contaminate.</p> <p>→ If mask becomes wet or soiled must be disposed of and replaced</p> | <p>Pre-Use Check</p> <p>See Guidelines**</p> |
| <p>P100 Half Mask Respirator (Reusable)</p>  | Protects wearers from at least 99.97% of airborne particles | <p>→ Mask must be diligently cleaned before and after each use.</p> <p>→ Gloves must be worn during the cleaning of mask and removal of cartridges.</p> <p>→ Cartridges to be replaced</p> | Fit Testing Required |
| <p>P100 Full Mask Respirator (Reusable)</p>  | <p>Protects wearers from at least 99.97% of airborne particles</p> <p>Can be a better fit for people with breathing problems or facial hair</p> | <p>→ Mask must be diligently cleaned before and after each use.</p> <p>→ Gloves must be worn during the cleaning of mask and removal of cartridges.</p> <p>→ Cartridges to be replaced</p> | Fit Testing Required |

Pre-Use Check – Disposable Respirator

- You should be clean-shaven around the face seal to achieve an effective fit when using disposable respirators. Beards and stubble will stop the disposable respirator sealing to your face and protecting you properly.
- Make sure it is the right disposable respirator for your work and for you
- Make sure the disposable respirator is clean and undamaged before you use it.
- Follow the manufacturer's instructions for checking the disposable respirator and putting it on.
- Check the fit every time you put on the disposable respirator to ensure there are no leaks.

Putting the disposable respirator on and checking it fits

