

# COVID-19 AND USE OF MASKS AND RESPIRATORS

Proper respiratory protection is essential to creating a safe working environment. COVID-19 can be highly infectious, and CUPE strongly recommends that personal protective equipment (PPE) precautions be implemented. The specific PPE needed, including masks and respirators, will vary based on the risks of a given task or workplace.

## MASKS AND RESPIRATORS

The two most common categories relevant to most of our members will be surgical/procedure masks and N-95 respirators (sometimes also called N-95 masks, filtered facepiece respirators, or air purifying respirators).

Face masks, or surgical masks, protect against splatter or large droplets. Surgical masks are often easily identified by their pleated stitching. N-95 respirators can either look a bit like a gas mask, or can look more like a shop dust mask. They should be NIOSH approved and clearly identified as N-95, meaning they are not impervious to oil and block 95 percent of airborne particles if properly fitted.

## MASKS

A facemask is a loose-fitting, disposable device that creates a physical barrier between the mouth and nose of the person wearing the mask and potential contaminants in the immediate environment. There are several common types, most notably dust masks and surgical masks. They block splashes and large airborne particles.

They will not completely filter or block small particles in the air that may be transmitted by coughs, sneezes or certain medical procedures. Facemasks do not provide complete protection from viruses or bacteria and other airborne contaminants because of the loose fit between the surface of the facemask and your face.

Masks should always be replaced if they become wet, soiled, or contaminated.

## How to put on a mask:

- Before putting on your mask, wash your hands with soap and water for at least 15 seconds or use alcohol-based hand sanitizer.
- Secure the elastic loops of the mask around your ears. If your mask has strings, tie them securely behind your head.
- Cover your mouth and nose with the mask and make sure there are no gaps between your face and the mask.
- Do not touch the front of the mask while you wear it. Wash your hands with soap and water for at least 15 seconds or use alcohol-based hand sanitizer if you accidentally touch your mask.

## How to remove a mask:

- Do not touch the front of your mask to remove it.
- Remove the elastic loops of the mask from around your ears or untie the strings from behind your head.
- Hold only the loops or strings and place the mask in a garbage bin with a lid.
- Wash your hands with soap and water for at least 15 seconds or use alcohol-based hand sanitizer after you have discarded your mask.

[Source: Ontario Public Health]

## RESPIRATORS/N-95 MASKS

The two main types of respirators are supplied-air respirators (SARs) and air-purifying respirators (APRs). The selection of the type of respiratory protection required will depend on the hazards present in the work environment.

Supplied-air respirators are used in very dangerous settings and have a clean air supply attached to them. In connection to COVID-19, these are unlikely to be used outside an intensive healthcare setting, and workers in need should refer to factsheets and training materials specific to them.

More common are air-purifying respirators, which may appear as disposable respirator masks, or may have a removable filter and face shield. Rather than supplying fresh air, APRs filter the air, removing fine airborne particles. In the context of COVID-19, we are mostly discussing N-95 masks. The 'N' means they are not impervious to oil, and the number means they filter out at least 95 percent of fine airborne particles. Note that respirators all have time limitations and if used longer can clog and impair breathing.

## FIT-TESTING A RESPIRATOR



Air purifying respirator



Reusable respirator with particulate filter half face and full face

A respirator will not protect a worker if it does not fit properly. All respirators that are designed to fit snugly to the face (known as "tight fitting") must be properly fit-tested to that worker to ensure that they are getting the correct size. A "fit test" is a procedure that physically tests the seal between the respirator's face piece and a worker's face. It must be performed using the same size and model of respirator the worker will actually be using on the job. Fit testing should be performed every year to ensure that people's facial structure has not changed as a result of a significant weight change.

## How do I perform seal checks to make sure the mask is adjusted correctly?

Each time and every time a respirator is worn, the worker must check that the respirator is sealing properly to the face. Not all respirators will allow the wearer to temporarily block the inlet openings or valves, but these checks should be done whenever possible. Do not wear a respirator that does not seal properly.

## Negative pressure seal check:

Negative-pressure checks can be done on air-purifying respirators and other respirators with a tight-fitting facepiece.

- Put on the respirator.
- Close or block the inlet opening(s) of the respirator so that when you inhale (breath in), no air enters the facepiece.
- Gently inhale and hold your breath for at least 5 seconds.



Negative pressure fit check

- The facepiece should collapse (“squish in”) slightly on your face.
- If the facepiece remains collapsed while you hold your breath, the seal check is successful.
- If the facepiece does not remain collapsed, check that nothing is obstructing (blocking) the sealing surface, adjust the facepiece and harness, and repeat the user seal check.

#### Positive pressure seal check:

Positive-pressure seal checks can be done with respirators equipped with tight-fitting facepieces that have both inhalation and exhalation valves.

- Put on the respirator.
- Close or block the exhalation valve or breathing tube, or both.
- Exhale (breath out) gently.
- The respirator should expand (“puff out”) slightly.
- If a slight positive pressure can be maintained inside the facepiece without noticing any air leaking for 5 seconds, the seal check is successful.
- If a slight positive pressure does not occur, check that nothing is obstructing (blocking) the sealing surface, adjust the facepiece and harness, and repeat the user seal check.



Positive pressure fit check

**Seal checks for disposable respirators:** A seal check can be done by placing both hands over the respirator itself, or by using a device provided by the manufacturer.

- Put on the respirator.
- Place both hands over the respirator. If there is a valve, block the valve with your hand.
- Breathe in and out.
- If you have a good seal, the facepiece should collapse slightly when you inhale.
- As you exhale, you should not feel air leaking out.
- If you have air leaks, check that nothing is obstructing (blocking) the sealing surface, adjust the nose piece or straps, and repeat the user seal check.



Seal check with a disposable respirator

Again, do not wear a respirator that cannot pass the seal checks successfully.

Finally, fit testing determines that workers are medically able to wear a tight-fitting respirator. Alternative respiratory protection is available for workers who need accommodations for a non-tight fit model (hood or helmet).

Source: *Respirators - Wearing a Respirator*, OHS Answers Fact Sheet <https://www.ccohs.ca/oshanswers/prevention/ppe/wearing.html>, Canadian Centre for Occupational Health and Safety (CCOHS), July 2017. Reproduced with the permission of CCOHS, 2020

#### Reuse and Extended use of PPE

Under normal circumstances, personal protective equipment should only be used as directed. Much of it is made to be single-use and disposable to reduce the risk of spreading infection. However, under extraordinary circumstances a sufficient supply may not be available. While the information this fact sheet may represent best practices for such scenarios, using PPE beyond expiry dates, for longer than indicated, or re-using disposable products never represents best practices and should be avoided unless there is no other option. Consult with your health and safety representative before taking any of these steps. Extended use, reuse and use beyond the suggested date procedures should not pre-empt governments and employers from continuing to seek new respirators for purchase.

#### N95 Respirators

**Expired respirators** – The Ministry of Health allows N95 respirators to be used beyond their “use before date” if supplies have run out. Always inspect the filtration piece and the elastic strap for any deterioration prior to use.

**Extended use** – This is the practice of wearing the same N95 respirator for repeated close contact encounters with several patients without removing the respirator between patients. Extended use may be implemented when multiple patients are already known to be infected with the same respiratory pathogen and patients are placed together in dedicated waiting rooms or hospital wards. Extended use practices **does not mean** sharing respirators between workers.

#### Rules for extended use of N95 respirators

- Inspect respirators, particularly filter and elastic strap prior to use
- Discard N95 respirators following use during aerosol-generating procedures
- Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients
- Discard N95 respirators following close contact with, or exit from, the care area of any patient co-infected with an infectious disease requiring contact precautions
- Consider use of a cleanable full-face shield (preferred) that covers the respirator and/or other steps (e.g. masking patients, use of engineering controls) to reduce surface contamination
- Perform hand hygiene with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator (if necessary for comfort or to maintain fit)

**Reuse** – This is the practice of using the same N95 respirator for multiple encounters with patients, but removing it after each encounter. The respirator is stored in between encounters to be put on again prior to the next encounter with a patient. Even when N95 respirator reuse is practiced or recommended, there are restrictions on the number of times the same respirator is reused. Thus, it is often referred to as “limited reuse.” Most inadvertent exposures occur during removal of personal protective equipment. Reuse is strongly discouraged and should only be followed in exceptional circumstances if supplies have run out.

#### Recycling and Sterilization of Used Respirators

A previously used, sterilized, N95 mask should only be used if new masks are not available. The use of sterilization procedures should not pre-empt governments and employers from continuing to seek new masks for purchase.

When sterilization is necessary the employer should be informing the joint health and safety committee, or the health and safety representative and the local of:

- The method being used to perform the sterilization,
- The process for collection and transportation of previously used masks,
- The safety protocols and facilities being used for the sterilization process,
- The process by which a sterilized mask will be deemed “safe for use”,
- How the employer will be tracking the number of times individual units will be sterilized,
- The maximum number of times a unit will be sterilized before being discarded