

## Personal Protective Equipment

# Respirators - Respirators Versus Surgical Masks Versus Non-medical Masks

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## Is there a difference between a respirator and a surgical mask?

Yes. This document outlines some of the key differences between respirators and surgical masks. Healthcare workers routinely use surgical masks as part of their personal protective equipment. However, surgical masks are not respirators and are not certified as such. Non-medical masks are also discussed below.

Please also see the OSH Answers document on [Respiratory Protection Against Airborne Infectious Agents for Health Care Workers](#) for more information about respirators as used in healthcare settings, and the tip sheet on [Masks for Protection from Respiratory Infectious Diseases](#) for more information on the types of masks.

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## When should workers wear a respirator or a surgical mask?

The decision whether or not workers need to use either respirators or surgical masks must be based upon a hazard analysis of the worker's specific work environment and the protective properties of each type of personal protective equipment.

Respirators are designed to help reduce the wearer's respiratory exposure to airborne contaminants such as particles, gases, or vapours. Respirators and filters must be selected based on the hazards present. They come in various sizes and styles and should be individually selected to fit the wearer's face and to provide a tight seal. A proper seal between the user's face and the respirator forces inhaled air to be pulled through the respirator's filter material, thereby providing protection.

Surgical masks, also known as procedural or medical masks, are designed to help prevent contamination of the work environment or a sterile field from large particles generated by the wearer/worker (e.g., to prevent the spread of the wearer's spit or mucus). Surgical masks may also be used to help reduce the risk of splashes or sprays of blood, body fluids, secretions, and excretions from reaching the wearer's mouth and nose. Patients may also wear surgical masks to help limit the spread of infections.

Note that masks with an exhalation valve are not recommended because the valves allow respiratory particles to spread outside the mask (for example, these masks do not protect others from COVID-19, nor do they help limit the spread of the virus).

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## Can you tell the difference between a respirator and a surgical mask just by looking at it?

The difference is not always immediately apparent. A respirator will be marked with its approval rating (e.g., N95, N100, etc.). Surgical masks do not have this rating. (Note there are also “surgical masks” that have been rated as respirators (i.e., N95 surgical masks).)

Always be sure you are wearing the right respirator or mask for the hazards present and the task you are performing.

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## What are some of the differences?

The table below outlines some of the key differences between respirators and surgical masks.

Note: In this document, N95 surgical masks are included in the general category of respirators.

Key Element	Respirators	Surgical Masks
Evaluation, Testing, and Certification	<p>Respirators are evaluated, tested, and certified by approved agencies.</p> <p>Make sure that your respirator is approved by Health Canada, including:</p> <ul style="list-style-type: none"> <li>• NIOSH N95 respirators with an approval number stamped on the device, represented as TC-84A-####n.</li> <li>• 95PFE products or CSA certified CA-N95 and CA-N99 type respirators as marked according to the CSA Z94.4.1 standard.</li> <li>• KN95 respirators that meet standard GB 2626-2019.</li> <li>• KF94 respirators that meet standard KMOEL-2017-64.</li> <li>• FFP2 respirators that meet standard EN 149-2001.</li> </ul>	<p>The Medical Devices Bureau of the Therapeutic Products Directorate (TPD) in Health Canada is the national authority that monitors and evaluates the safety, effectiveness and quality of diagnostic and therapeutic <a href="#">medical devices</a> in Canada. Depending on the class of medical device, certain licensing and authorization to sell in Canada are required. Health Canada recommends looking for a medical mask that has ASTM F2100 or EN 14683 on the box label.</p>
Purpose	<p>Respirators protect from exposure to airborne particles. In healthcare, protects from exposure to biological aerosols, including viruses and bacteria.</p>	<p>Surgical masks are a barrier to fluids, such as splashes, droplets, and sprays of bodily fluids.</p> <p>Protects the patient from the wearer's respiratory emissions.</p>

Key Element	Respirators	Surgical Masks
Fit (Face seal)	<p>Respirators are designed to seal tight to the face of the wearer.</p> <p>Wearers should be fit tested to make sure they are using the appropriate model and size of respirator to get the best fit.</p> <p>A seal check should be done each time a respirator is worn.</p>	<p>Surgical masks are not designed to seal tight against the face.</p> <p>The fit can be improved by using different methods, such as adjusting ties or ear loops and adjusting the flexible nosepiece.</p>
Filtration	<p>Respirator filters that collect at least 95% of the challenge aerosol are given a 95 rating. Those filters that collect at least 99% receive a “99” rating. And those that collect at least 99.97% (essentially 100%) receive a “100” rating.</p> <p>See the OSH Answers on <a href="#">Respiratory Protection Against Airborne Infectious Agents for Health Care Workers</a> for more information about the N, R and P ratings.</p>	<p>Surgical masks do not effectively filter small particles from the air.</p>
Use Limitations	<p>Generally, single use. Should be discarded when it:</p> <ul style="list-style-type: none"> <li>• becomes damaged or deformed,</li> <li>• no longer forms an effective seal to the face,</li> <li>• becomes wet or visibly dirty,</li> <li>• breathing through it becomes more difficult, or</li> </ul>	<p>Generally, one time use (one patient encounter).</p> <p>Follow the manufacturer's instructions.</p>

Key Element	Respirators	Surgical Masks
	<ul style="list-style-type: none"> <li>• becomes contaminated with blood, respiratory or nasal secretions, or other bodily fluids.</li> </ul> <p>Some types of respirators can be reused (e.g., elastomeric masks).</p> <p>Follow the manufacturer's instructions.</p>	

Sources: National Institute for Occupational Safety and Health (NIOSH) (no date) "[Understanding the difference](#)" and Health Canada (2021), "[COVID-19 mask use: Types of masks and respirators](#)"

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## What should a workplace do when respirators or surgical masks are required?

Employers should have a written respirator program that describes the procedures for selecting and using respiratory protective equipment. The correct use of a respirator is just as important as selecting the correct respirator for the hazards present.

Elements of a respirator program include:

- roles and responsibilities
- hazard assessment
- respirator selection
- training
- respirator fit testing
- use of respirators
- cleaning, inspection, maintenance, and storage of respirators
- health surveillance
- program evaluation, and
- recordkeeping

Please see the OSH Answers "[Designing an Effective PPE Program](#)" for more information.

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## What should I know about non-medical masks?

Non-medical masks can reduce the volume of aerosols and microorganisms that reach others when you cough, sneeze, laugh, or sing.

During a pandemic, wearing a non-medical mask may be required by your employer, provincial or territorial public health authority, or local government. The risk of contracting COVID-19 increases in situations where people are in closed spaces (with poor ventilation) and crowded places when with people from outside their immediate household. Risk is higher in settings where these factors overlap or involve activities such as close-range conversations, singing, shouting or heavy breathing (e.g., during exertion).

In general, people may be asked to wear non-medical masks when out in public when it is not possible to maintain at least 2 metres for physical distancing, particularly in settings such as shopping areas, stores, personal service settings, public spaces (including outdoors such as markets, skating rinks, or street get-togethers), and on public transportation.

Non-medical masks can be purchased or homemade. As stated by the [Public Health Agency of Canada](#), non-medical face masks or face coverings should:

- fit well and be used properly
- have an effective middle filter layer and have multiple layers, including at least 2 layers of breathable tightly woven fabric, like cotton
- be large enough to completely and comfortably cover the nose, mouth and chin without gaps
- fit securely to the head with ties or ear loops
- maintain their shape after washing and drying
- be changed as soon as possible if damp or dirty
- be comfortable and not require frequent adjustments

Some masks also include a pocket to accommodate a filter, such as non-woven polypropylene fabric. Reusable masks with a non-woven filter can be washed multiple times. Disposable filters should be changed daily and removed from the mask before washing.

When supplies are limited, N95 or other respirators that provide higher protection should be reserved for healthcare workers.

Note that some individuals may find wearing a mask uncomfortable or experience what feels like shortness of breath, anxiety, or panic. Masks may make the air feel “stuffy”, but there is no change to the levels of oxygen or carbon dioxide a person will breathe in. If you feel you have a medical concern that limits your ability to wear a non-medical mask, discuss your concerns with your healthcare professional.

Masks should not be worn by anyone who is unable to remove the mask without assistance (e.g., due to their age, ability, or developmental status), including children under 2 years old. Children between 2 and 5 years old may be able to wear a mask if supervised. It will depend on their ability to tolerate it, as well as put it on and off.

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## When wearing a non-medical mask:

- Wash your hands before putting on the mask.
- Adjust the ties, bands, ear loops and nose piece so the mask covers your nose, mouth, and chin with no gaps.
- Consider wearing a well-fitting non-medical cloth mask over a disposable mask to improve the fit (make sure you can still breathe easily).
- Keep facial hair and beards shaved or short, if possible, so the mask can fit more closely to your face.
- Do not touch the mask or your face while wearing it.
- Change the mask if it gets spoiled, such as if it gets dirty or wet.
- Clean your hands before removing the mask.
- Take the mask off by using the straps. Do not touch the front of the mask.
- Wash your hands after removing the mask.
- Store masks in a paper bag, envelope, or container that does not trap moisture.
- Store clean masks separately from dirty ones.
- If you used the mask for a short time and may wear it again, store it so that the outside surface is folded towards itself (so that the outside “dirty” surfaces are touching), and place it in a paper bag or similar container.
- Do not place the mask under your chin, around your neck, off the ear, under the nose, on top of your head, or over your arm.
- Do not share a soiled reusable mask with others until it has been cleaned or laundered.
- For some people, not being able to see the other person’s face and mouth clearly may cause difficulties. Consider using a transparent (clear) mask if appropriate.
- Do not allow the mask to be a hazard to other activities, such as getting caught on equipment in the workplace or at a playground.

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