

Face Masks – Information

Provide evidence-based information on the use of different types of face masks

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Types of face masks

Face masks as personal protection equipment (PPE)

Some face masks, the respirator types, can be used as Personal Protective Equipment (PPE). PPE in general is the collective term of wearable equipment and gear that is meant to protect the wearer from hazards such as infection from viruses. In the management of suspected cases of COVID19, respiratory protection and protection of eyes, body and hands is required.

However, some of the face masks that are currently recommended for the public do not fulfil the conditions of professional level PPEs. They do not filter air efficiently to protect the bearer. But they do catch droplets from the bearer and thus protect the other members of the public.

N95 respirator masks

The N95 respirator is the most common of the seven types of particulate filtering facepiece respirators. This product filters at least 95% of air-borne particles. It is an example of a mechanical filter respirator, which provides protection against particles such as viruses, but not against gases or vapor. These respirators are functionally equivalent to FFP2 respirators in the European Union and KN95 respirators in China.



Some N95 masks have one-way valves that make them easier to breathe through. But because the valve releases unfiltered air when the wearer breathes out, this type of mask does not prevent the wearer from spreading the virus.

Unmarked face masks

Often, general face masks that look like N95-respirator masks are sold in shops or online. However, they are not respirator masks despite their looks. They have the same qualities as simple cloth masks and should be used in the same way.



Surgical masks

A surgical mask (medical mask) is a loose-fitting disposable mask that protects the wearer's nose and mouth from contact with droplets, splashes and sprays that may contain germs. A surgical mask also filters out large particles in the air. Surgical masks may protect others by reducing exposure to the saliva and respiratory secretions of the mask wearer.¹



¹ Mayo Clinic. COVID-19: How much protection do face masks offer? <https://www.mayoclinic.org/diseases-conditions/coronavirus/in-depth/coronavirus-mask/art-20485449>

In settings where medical masks are in short supply, medical masks should be reserved for health workers and at-risk individuals when indicated.

Cloth masks

A cloth mask is intended to trap droplets that are released when the wearer talks, coughs, or sneezes. Masks can be made from common materials, such as sheets made of tightly woven cotton. Cloth masks should include multiple layers of fabric. ²



Principles for wearing face masks

Note that face masks do **NEVER** replace good practice of infection control such as keeping distance or washing your hands. Wearing face masks is an **ADDITIONAL** measure to help stop the spread of the virus.

COVID-19 can be spread by people who do not have symptoms and do not know that they are infected. That is why it is important for everyone to wear cloth face coverings in public settings and practice social distancing (staying at least 2 meters away from other people). ³

The World Health Organization (WHO) recommends that if there is widespread community transmission, and especially in settings where physical distancing cannot be maintained, governments should encourage the public to wear a fabric mask. ⁴

However, the WHO warns: It is possible that mask use, with unclear benefits, could create a false sense of security in the wearer, leading to diminished practice of recognized beneficial preventive measures such as physical distancing and hand hygiene.

General preventive principles

Social distancing

Social distancing, also called “physical distancing,” means keeping a safe space between yourself and other people who are not from your household. To practice social or physical distancing, stay at least 2 meters/6 feet (about 2 arms’ length) from other people who are not from your household in both indoor and outdoor spaces.⁵ In everyday life, we should follow these rules:

- Stay at least 6 feet away from others.
- Avoid contact with people who are sick.
- Wash your hands often, with soap and water, for at least 20 seconds each time or use hand sanitizer if soap and water are not available.

- Limit your contact to people of a stable inner circle of family and friends, if possible.
- If a worker is sick, they should not come to work. If a member of staff or a worker feels unwell while at work, provide a medical mask so that they may get home safely. ⁶

Who should wear a face mask (cloth mask)?

- All people, 2 years of age and older, should wear a cloth face mask in public settings and when around people who do not live in your household, especially when other social distancing measures are difficult to maintain. i.e. if you cannot keep at least 2 meters distance.

² Centers for Disease Control and Prevention, US. How to Wear Cloth Face Coverings. At <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-to-wear-cloth-face-coverings.html>

³ Centers for Disease Control and Prevention, US. Considerations for Wearing Cloth Face Coverings. <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html>

⁴ World Health Organization. Q&A: Masks and COVID-19. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-on-covid-19-and-masks>

⁵ Centers for Disease Control and Prevention, US. Social Distancing - Keep a Safe Distance to Slow the Spread

⁶ World Health Organization. Considerations for public health and social measures in the workplace in the context of COVID-19. Annex to Considerations in adjusting public health and social measures in the context of COVID-19. 10 May 2020. <https://www.who.int/publications/i/item/considerations-for-public-health-and-social-measures-in-the-workplace-in-the-context-of-covid-19>

- When you are alone in an office or walking alone in a park or walkway, you do not need to wear a mask.
- If you work at least 2 meters apart, e.g. in an office or at workplaces, and you do not talk, you do not have to wear a mask. Talking produces fine aerosols and droplets, though less than coughing and sneezing, that can travel in air for several meters.

About cloth masks

Materials for making a cloth mask

According to the World Health Organization, the selection of material is an important first step as the filtration (barrier) and breathability varies depending on the fabric.

Filtration efficiency is dependent on the tightness of the weave, fibre or thread diameter, and, in the case of non-woven materials, the manufacturing process (spunbond, meltblown, electrostatic charging).

The filtration of cloth fabrics and masks has been shown to vary between 0.7% and 60%. The higher the filtration efficiency the more of a barrier provided by the fabric.⁷

A minimum of three layers is required for non-medical masks, depending on the fabric used. The innermost layer of the mask is in contact with the wearer's face. The outermost layer is exposed to the environment.

Fabric cloths (e.g., nylon blends and 100% polyester) when folded into two layers, provides 2-5 times increased filtration efficiency compared to a single layer of the same cloth, and filtration efficiency increases 2-7 times if it is folded into 4 layers. Masks made of cotton handkerchiefs alone should consist of at least 4 layers but have achieved only 13% filtration efficiency. Very porous materials, such as gauze, even with multiple layers will not provide sufficient filtration; only 3% filtration efficiency.

For more information on material, see the references on the next page.

Using a cloth mask

- Clean your hands before putting on the mask.
- Inspect the mask for tears or holes, do not use a mask that is damaged.
- Adjust the mask to cover your mouth, nose, and chin, leaving no gaps on the sides.
- Avoid touching the mask while wearing it.

- Change your mask if it gets dirty or wet.
- Clean your hands before taking off the mask.
- Take off the mask by removing it from the ear loops, without touching the front of the mask.
- Clean your hands after removing the mask.
- If a worker is sick, they should not come to work. If a member of staff or a worker feels unwell while at work, provide a medical mask so that they may get home safely.

Caring for a cloth mask

- If your fabric mask is not dirty or wet and you plan to reuse it, put it in a clean plastic, resealable bag. If you need to use it again, hold the mask at the elastic loops when removing it from the bag.
- Wash fabric masks in soap or detergent and preferably hot water (at least 60 degrees) at least once a day.
- If hot water is not available, wash the mask in soap/detergent and room-temperature water, followed by either boiling the mask for 1 minute OR by soaking the mask in 0.1% chlorine for 1 minute and thoroughly rinsing the mask with room temperature water (there should not be any toxic residue of chlorine on the mask).
- Make sure you have your own mask and do not share it with others.

N95 respirators for healthcare personnel

Supplies of N95 respirators have become depleted during the COVID19 pandemic. The following guidelines recommend a combination of approaches to conserve and stretch supplies while safeguarding health care workers in such circumstances:

- Minimize the number of individuals who need to use respiratory protection.
- Prioritize the use of N95 respirators for the personnel at the highest risk of contracting or experiencing complications of infection.
- Use alternatives to N95 respirators, such as a surgical mask, combined with a face shield where feasible.
- Implement practices allowing extended use and/or limited reuse of N95 respirators, when acceptable.

Masks should only be used by one person and should not be shared.

⁷ World Health Organization. Advice on the use of masks in the context of COVID-19. Interim guidance. 5 June 2020. <https://apps.who.int/iris/rest/bitstreams/1279750/retrieve>

Extended use and limited reuse can be considered under following circumstances:

- Use of N95 respirators can be extended to 8 hours of continuous or intermittent use.
- Reuse can be considered after storage under the following conditions:
 - Check form and function: absence of damage or contamination.
 - Store during 7 days in a clean, dry, breathable container such as a paper bag. Note that the viability of the virus is limited to 3 hours in aerosols.
 - Individualize reuse: only one person uses this PPE, write user's name on the envelope
 - Can be reused up to 3 times

However, N95 should always be discarded in the event of:

- After aerosol generating procedures such as intubation, endoscopy, a coughing or sneezing patient, suction procedures
- Any visual damage
- Contamination with blood, respiratory or nasal secretions, or other bodily fluids from patients
- Close contact with, or exit from, the care area of any patient co-infected with an infectious disease requiring contact precautions

Additional References

1. World Health Organization. Coronavirus disease (COVID-19) advice for the public: When and how to use masks. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks> [multimedia material, videos, posters regarding the use of masks]
2. World Health Organization. Advice on the use of masks in the context of COVID-19. Interim guidance. 5 June 2020. <https://apps.who.int/iris/rest/bitstreams/1279750/retrieve>
3. Centers for Disease Control and Prevention, USA. Recommendations for using Personal Protective Equipment (PPE) at <https://www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html>
4. Centers for Disease Control and Prevention, USA. Recommendations for extended use and limited reuse of N95 filtering facepiece respirators in healthcare settings at <https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html>
5. Chin AWH, Chu JTS, Perera MRA, Hui KPY, Yen H-L, Chan MCW, et al. Stability of SARS-CoV-2 in different environmental conditions. *The Lancet Microbe*. 2020 May 1;1(1): e10.

Sources of pictures

In sequence:

1. Centers for Disease Control and Prevention, USA: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-to-wash-cloth-face-coverings.html> and https://www.youtube.com/watch?v=Od_RaKdqeck
2. 3M: <https://multimedia.3m.com/mws/media/9015390/3m-healthcare-respirators.pdf>
3. Wikipedia: <https://commons.wikimedia.org/wiki/Image:Protective-mask-a-face-01.jpg?uselang=it>
4. World Health Organization: https://www.who.int/health-topics/coronavirus#tab=tab_1
5. Centers for Disease Control and Prevention, USA: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-to-wash-cloth-face-coverings.html> and <https://www.youtube.com/watch?v=ML3n1c0FHDI>

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