



Guide for Making Non-Medical Masks



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Vestechpro
Apparel Research and Innovation Centre

Guide for Making Non-Medical Masks

According to information available on the Quebec government website dated May 22, 2020, non-medical masks (also called handcraft masks or face covers) is “highly recommended” in public places, particularly when the 2-meter (6-feet) physical distance is not possible. This can happen at the grocery store or by taking public transportation. Wearing a mask in public places must be accompanied by other protective measures, such as the application of hygiene measures and physical distance (2 meters / 6-feet). Since the start of the health crisis, a great deal of information has been circulating about the making of handcraft masks and their material. Vestechpro, apparel research and innovation center, has remained up to date on the subject to help guide you in your decisions.

COVID-19 is a respiratory infection transmitted by fluid droplets from the respiratory tract. It can be transmitted by someone who is asymptomatic or pre-symptomatic.

N95 surgical masks or procedural masks are the only masks that provide adequate protection against infection; however, they are intended for use by healthcare personnel only. This is why many people choose to wear non-medical masks.

Wearing a non-medical mask does not protect the person wearing it, it protects others.

If you intend to make non-medical masks, here is what you should know:

- The non-medical mask does not protect the wearer, but can help reduce the risk of an asymptomatic or pre-symptomatic individual contaminating others;
- Wearing a non-medical mask is recommended for short periods in public places where it is difficult to keep a distance from people;
- Wearing a non-medical mask is not recommended for children under two years of age, people suffering from respiratory disorders, people who are unconscious, and those who do not have the capacity to remove it themselves;
- **Wearing a non-medical mask alone is not enough to stop the spread of the virus, it is an additional preventive measure which is an addition to other known methods:**
 - Stay home as much as possible;
 - Practice social distancing;
 - Wash your hands;
 - Protect the most vulnerable people against infection and limit their proximity to others;
 - Cough into a handkerchief or sleeve;
 - Avoid touching the mouth, nose and eyes;
 - Only wear a mask when necessary.



Choose a mask model

Many types of non-medical masks are available free on the Internet and it is easy to get confused. Here is some information to help you make informed choices. The non-medical mask must:

- **Cover the mouth, nose and chin;**
- **Fit the contours of the face well: “pleated” and “duckbill” type masks generally adhere fairly well to the face and are therefore recommended¹;**
- **Have an adjustment system that keeps the mask in place, even when the user moves his head – elastic bands slipped behind the ears or strings tied behind the head will keep the mask in place;**
- **Not have vertical seams on the nose and mouth;**
- **Include a lining (optional) to optimize efficiency without compromising mask breathability;**
- **Be washable.**



Warning

Although many tutorials recommend a coffee filter or vacuum cleaner bag as filter material, the French Standardization Association (AFNOR) does not recommend these materials since they are likely to release irritants into the inhaled air which can cause an allergic reaction and /or toxicity risk.

If the mask is fitted with a nasal bar which helps to hug the bridge of the nose, it should not be in direct contact with the skin. In addition, it must be able to be subjected to the same maintenance conditions as the mask, otherwise it would shorten the life duration of the mask.

¹ French Standardization Association (AFNOR) shares “pleated” and “duckbill” type masks at the following link:
<https://www.afnor.org/en/news/protective-masks-download-our-reference-document-for-free/>

² Ability of a fabric to remove water vapor

Advice for making masks

No studies have been conducted to make it possible to compare sewn and seamless non-medical masks, using a sewing machine is not necessarily essential for making masks.

After making the mask, wash it according to the recommendations given below on page 3.

What material should you use?

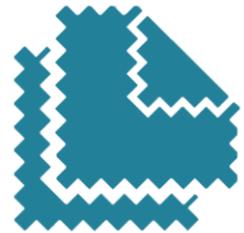
Cotton fiber is a good choice for its comfort, level of absorption, breathability, resistance to high temperatures (for maintenance) and accessibility.

A study conducted by Smart Air² recommends using a T-shirt or a cotton pillowcase to make masks.

In addition, **other materials or mixtures of materials can be considered for making non-medical masks.** The [non-medical mask materials database](#) (French language) assembled by Eura Materials, the IFTH and Techtera is a good reference tool on this subject.

In all cases, material chosen must:

- Be a tightly woven fabric;
- Allow air to pass through so that the user can breathe without discomfort;
- Be flexible enough to fit the contour of the face and thus seal the mask;
- Be comfortable to the touch and non-irritating;
- Not be too hot.



Non-medical mask maintenance

- Textile masks can be washed with other items (it is even recommended to ensure the mechanical action of washing);
- Wash masks in hot water with detergent every day they are worn;
- AFNOR recommends washing masks at 60°C for a minimum of 30 minutes;
- Tumble dry (do not air dry!) until the mask is completely dry. Don't worry about over-drying the mask. Then empty the dryer filter and wash your hands.



² Smart Air (certification B-Corp) : <https://smartairfilters.com/en/blog/best-materials-make-diy-face-mask-virus/>

How to wear non-medical masks

- Wash your hands before putting on the mask and after removing it;
- Adjust it so that it follows the contour of your face (prevent it from opening on the sides);
- Always position it the same way (outside face outwards);
- Don't share it with others;
- Avoid touching it when you wear it;
- Don't put it on the forehead or chin during and after use;
- Change the mask if it is wet, dirty, or after using it for 4 hours.

Partial references: Public Health Canada Agency

The right way to put on and take off a non-medical mask

1. Wash your hands.
2. Locate the top and bottom of the mask.
3. Position the mask on the face and position the straps (or elastic bands).
4. Make sure the mask covers the chin.
5. If applicable, pinch the clip on the nose.
6. Check for leaks by covering the mask with plastic film and inhale, the mask should stick to the face.
7. Avoid touching your mask while wearing it, but if you must, wash your hands before and after.
8. Before removing the mask, wash your hands and then remove it using the adjustment system, without touching the outside of the mask. If it is washable, put it directly in the washing machine, or in a plastic bag to wash it later.
9. Wash your hands.



Visuals : Freepick

About Vestechpro

Vestechpro is a college transfer centre (CTC) that specializes in adaptive clothing and is affiliated with Cégep Marie-Victorin, as well as a technology access centre (Natural Sciences and Engineering Research Council of Canada), and is a member of Synchronex and QuébecInnove.

Since its foundation in 2011, its mission has been to support companies and organizations in the clothing industry in developing innovative products and projects, by providing technical support, training, strategic information dissemination, and applied research. Vestechpro prioritizes the following niche research areas: smart clothing, adaptative and medical clothing, anthropometry and the circular economy.

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