

General-Use Cloth Face Masks: Recommendations of Selection, Use, Washing and Disposal

The State University of New York (SUNY)

July 6, 2020

COVID-19 is the Severe Acute Respiratory Syndrome (SARS) associated with the coronavirus which we refer to as SARS-CoV-2. As part of SUNY's efforts to mitigate the risk of community spread of the SARS-CoV-2 virus, facial coverings should be worn at all times when there is a chance of coming into close contact (less than 6 feet) with other people (e.g., while attending class, inside of public buildings, walking across campus, etc.). There is currently no vaccine to prevent COVID-19 infection and the best way to prevent illness is to avoid being exposed to this virus.

The virus is thought to spread mainly from person to person through respiratory aerosols and droplets produced when an infected person coughs, sneezes or talks. These aerosols and droplets can land in the mouths, noses, or eyes of people who are nearby or possibly be inhaled into the lungs. The SARS-CoV-2 virus itself is found in various shapes with poly-disperse diameters ranging between 60 and 140 nm (0.06 and 0.14 microns).¹ The size of a virus that can remain airborne in an aerosol is typically stated to be smaller than 5 microns in diameter.² Spread is more likely when people are in close contact with one another (within about 6 feet). People who are either asymptomatic or presymptomatic can spread the virus without even knowing they are infected. Properly worn and maintained masks, combined with social distancing and hand washing, provide a first line of defense against the spread of the coronavirus.

This document focuses on reusable, cloth face masks only. It aims to provide a reference (not a directive) in proper selection, use, wash, and disposal of cloth masks.

Select Cloth Face Masks

The characteristics of the material used, the number of layers, size of the pores in the fabric, the fit to the face and other factors determine the ability of a cloth mask to effectively filter the larger aerosol and droplet particles. In addition, this must be balanced with the breathability of the mask so that it can be worn for prolonged periods of time.

Metrics	Recommendations*
Materials	Prefer 100% cotton or high cotton content; avoid latex
# of layers	Prefer three layers or more for most cases; two layers are acceptable if manufacturers provide test data to indicate comparable filtration efficiency.
Thread Count	High thread count is better; need to balance with breathability
Size	What size is the active filtration area? Does the mask fit from under the chin to over the nose?
Fit	Does the vendor offer different sizes of masks? Are ear loops adjustable?
Breathability	Suggest to request samples to test breathability, if needed.
Laundry Cycles	How many washing cycles can the masks sustain according to the manufacturer?
Suggested Light Test	The mask should look almost opaque when held up to a light bulb.

*Note: Due to the large variety of cloth fabric types, the lack of manufacturing standards of cloth masks and the large numbers of cloth masks products on the market, it is very challenging to make scientific-based recommendations for cloth face masks. Above recommendations are based on existing literature and limited observations.

Wear Your Cloth Masks Correctly to Help Protect Yourself & Others^{3,4}

- Wash your hands thoroughly before putting on and taking off your face covering
- Put it over your nose and mouth and secure it under your chin
- Try to fit it snugly against the sides of your face
- Keep the covering on your face the entire time you're in public
- Don't touch the face covering, and if you do, clean your hands
- Make sure you can breathe easily (people who have respiratory conditions or breathing trouble should speak with their healthcare providers prior to wearing a mask)

Follow Everyday Health Habits^{3,4}

- Stay at least 6 feet away from others and remember that a **cloth face covering is not a substitute for social distancing**
- Avoid contact with people who are sick
- Wash your hands often, with soap and water, for at least 20 seconds each time
- Use hand sanitizer if soap and water are not available
- Avoid touching your eyes, nose, and mouth with unwashed hands

Take Off Your Cloth Face Mask Carefully, When You're Home^{3,4}

- Wash your hands thoroughly
- Untie the strings behind your head or stretch the ear loops
- Handle only by the ear loops or ties
- Fold outside corners together
- Place on isolated clean surface until ready to clean

Washing Your Mask^{3,4}

- Cloth face coverings should be washed after each use.
- You can include your face covering with your regular laundry.
- Use regular laundry detergent and the warmest appropriate water setting for the cloth used to make the face covering.
- The mask can also be washed by hand with soap (laundry detergent) and water. Washing the mask by hand may prolong the life of the mask.
- It can either be dried in a dryer, or air-dried by laying it flat and allowing it to completely dry (in direct sunlight if possible).

When to Throw Away Your Face Mask³

- No longer covers your nose and mouth
- Is stretched out or does not stay on your face
- Has damaged ties or straps
- Has holes or tears in the fabric

Cloth Face Masks Are for General, Non-Medical Environment

Cloth masks are considered “non-medical” and are for general use. Unlike medical masks and respirators, which can filter particles less than a micron in size, cloth masks typically filter particles which are much larger than a micron. Anyone in a setting with a known risk of potential exposure to the virus should consult CDC guidelines for the proper level of personal protective equipment (PPE) advised for that setting. We note that the World Health Organization (WHO) has published its own guide for the use of masks.⁵

Procurement

Please contact Thomas Hippchen at Thomas.Hippchen@suny.edu if you would like to receive information on system-wide contracts for cloth face masks and personal protection equipment (PPE).

Disclaimer

The scientific understanding of COVID-19 and the virus transmission evolves rapidly. The recommendations in this document are based on current understanding and may need to be updated as research advances. The information contained in this document is intended for SUNY campuses and may not be used, published or redistributed without the prior written consent of the State University of New York (SUNY). The opinions expressed and information enclosed are made in good faith and while every care has been taken in preparing this document, SUNY, its employees and affiliates cannot be held responsible for the use of and reliance of the opinions, estimates, forecasts and findings in this document.

Acknowledgement

We appreciate the expertise and insight of following colleagues:

- Dr. Alain Diebold, SUNY Polytechnic Institute
- Tom Hippchen, SUNY System Administration
- Dr. Michael J. McGovern, SUNY College of Optometry
- Blaine Miller, SUNY System Administration
- Charles Pensabene, SUNY System Administration
- Dr. Meera Sampath, SUNY System Administration
- Steve Weisman, Stony Brook University

References

[1] Cascella, M.; Rajnick, M.; Cuomo, A.; Dulebohn, S. C.; Di Napoli, R. Features, Evaluation and Treatment of Coronavirus (COVID-19), April 6, 2020.

[Online], <https://www.ncbi.nlm.nih.gov/books/NBK554776>

[2] R. Tellier, Review of Aerosol Transmission of Influenza A Virus, Emerging Infectious Diseases 12, www.cdc.gov/eid (2006), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3372341/>

and R. Tellier, Aerosol transmission of influenza A virus: a review of new studies, J. R. Soc. Interface (2009) 6, S783–S790. <https://royalsocietypublishing.org/doi/pdf/10.1098/rsif.2009.0302.focus>

[3] <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/diy-cloth-face-coverings.html>

[4] <https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/ClothFacemasks.pdf>

[5] Advise on the use of masks in the context of Covid-19, WHO,

[https://www.who.int/publications/i/item/advice-on-the-use-of-masks-the-community-during-home-care-and-in-health-care-settings-in-the-context-of-the-novel-coronavirus-\(2019-ncov\)-outbreak](https://www.who.int/publications/i/item/advice-on-the-use-of-masks-the-community-during-home-care-and-in-health-care-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak)