

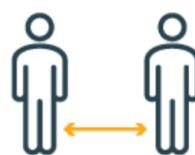
# COVID-19 (Coronavirus Disease)

[MENU >](#)

CASES ARE RISING.  
**ACT NOW!**



WEAR A MASK



STAY 6 FEET APART



AVOID CROWDS

## Considerations for Wearing Masks

Help Slow the Spread of COVID-19

Updated Dec. 7, 2020



### What you need to know

- People age 2 and older should wear masks in public settings and when around people who don't live in their household.
- Masks offer some protection to you and are also meant to protect those around you, in case you are unknowingly infected with the virus that causes COVID-19.
- A mask is NOT a substitute for [social distancing](#). Masks should still be worn in addition to staying at least 6 feet apart.
- Wash your hands with soap and water for at least 20 seconds or use hand sanitizer with at least 60% alcohol after touching or removing your mask.
- Masks may not be necessary when you are outside by yourself away from others, or with other people who live in your household. However, some localities may have mask mandates while out in public and these mandates should always be followed.
- CDC is still studying the effectiveness of different types of masks and will update our recommendations as new scientific evidence becomes available.

## Evidence for Effectiveness of Masks

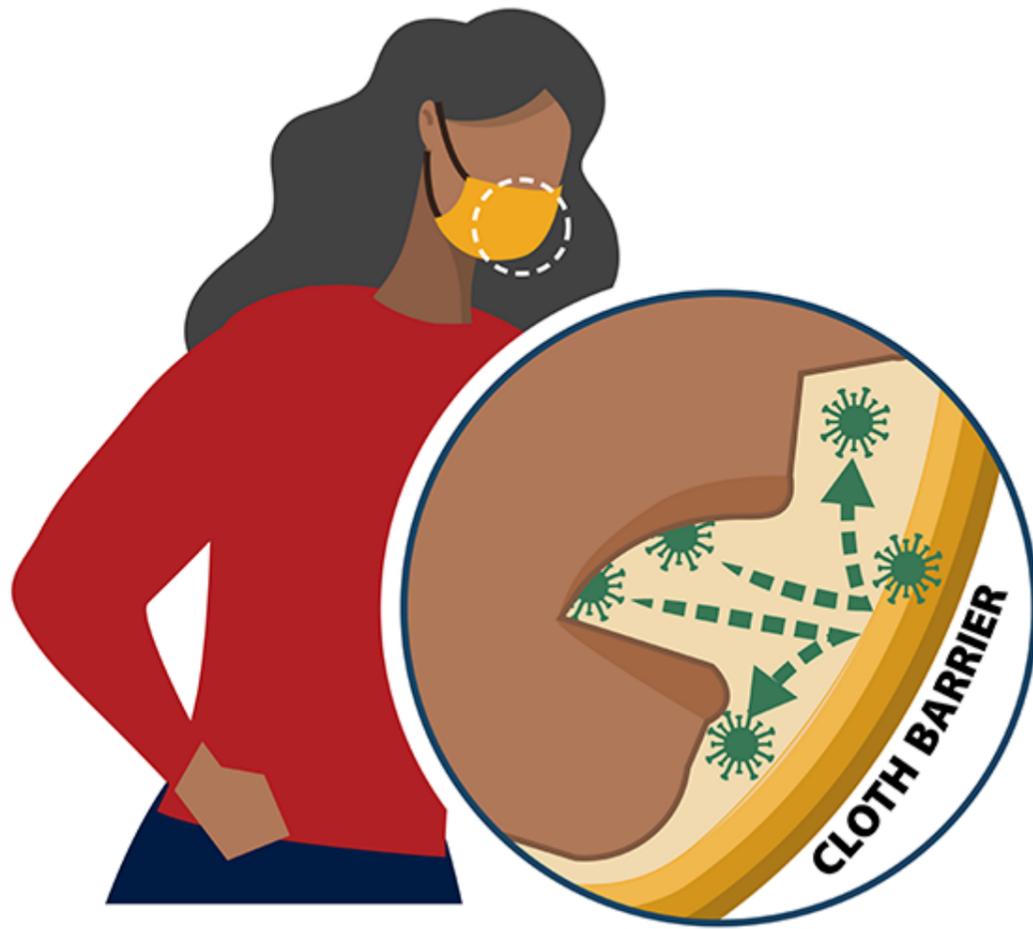
### Your mask helps protect those around you

COVID-19 spreads mainly from person to person through respiratory droplets. Respiratory droplets travel into the air when you cough, sneeze, talk, shout, or sing. These droplets can then land in the mouths or noses of people who are near you or they may breathe these droplets in.

Masks are a simple barrier to help prevent your respiratory droplets from reaching others. Studies show that masks reduce the spray of droplets when worn over the nose and mouth.

You should wear a mask, even if you do not feel sick. This is because several studies have found that people with COVID-19 who never develop symptoms (asymptomatic) and those who are not yet showing symptoms (pre-symptomatic) can still spread the virus to other people. The main function of wearing a mask is to protect those around you, in case you are infected but not showing symptoms.

It is especially important to wear a mask when you are unable to stay at least 6 feet apart from others since COVID-19 spreads mainly among people who are in close contact with one another (within about 6 feet).



## Your mask offers some protection to you

A cloth mask also offers some protection to you too. How well it protects you from breathing in the virus likely depends on the fabrics used and how your mask is made (e.g. the type of fabric, the number of layers of fabric, how well the mask fits). CDC is currently studying these factors.

## Who should or should not wear a mask

### Who should wear a mask

Everyone 2 years of age and older should wear a mask in public settings and when they are around people who do not live in their household.

Wear a mask when caring for someone who is sick with COVID-19 (whether at home or in a non-healthcare setting). If you are sick with COVID-19 or think you may have COVID-19, wear a mask when you need to be around other people or animals, even in your own home.

CDC recognizes there are specific instances when wearing a mask may not be feasible. In these instances, consider [adaptations and alternatives](#).

## Who should not wear a mask

Masks should not be worn by

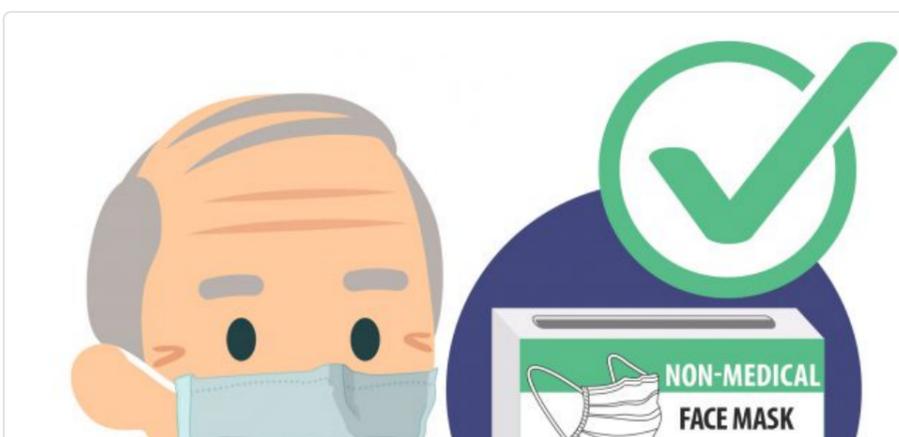
- Children younger than 2 years old
- Anyone who has trouble breathing
- Anyone who is unconscious, incapacitated or otherwise unable to remove the mask without assistance
- Wearing masks may be difficult for some people with sensory, cognitive, or behavioral issues. If they are unable to wear a mask properly or cannot tolerate a mask, they should not wear one, and [adaptations and alternatives](#) should be considered

## Types of masks

Some masks work better to help stop the spread of COVID-19 outside of healthcare settings. Medical masks and N-95 respirators should not be used because they should be conserved for healthcare workers.

### Recommended

### Not Recommended





Non-medical disposable masks



Masks that fit properly (snugly around the nose and chin with no large gaps around the sides of the face)



Masks that do not fit properly (large gaps, too loose or too tight)



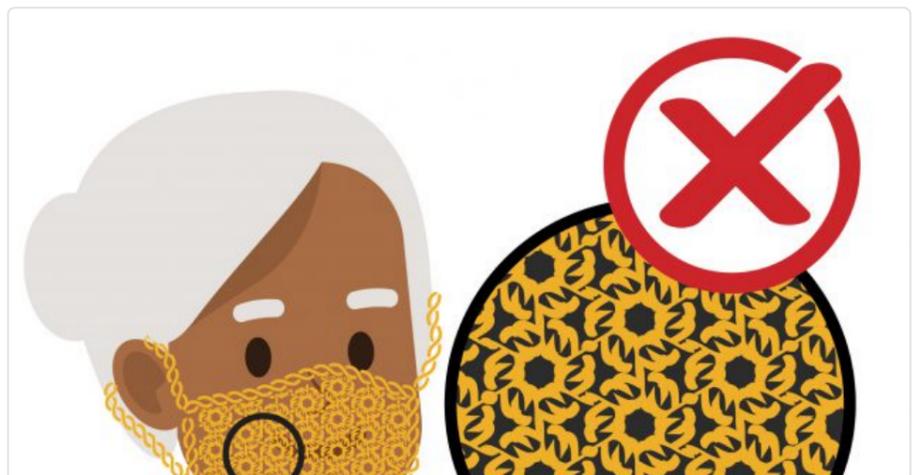
Masks made with breathable fabric (such as cotton)



Masks made from materials that are hard to breathe through (such as plastic or leather)



Masks made with tightly woven fabric (i.e., fabrics that do not let light pass through when held up to a light source)





Masks made from loosely woven fabric or that are knitted, i.e., fabrics that let light pass through



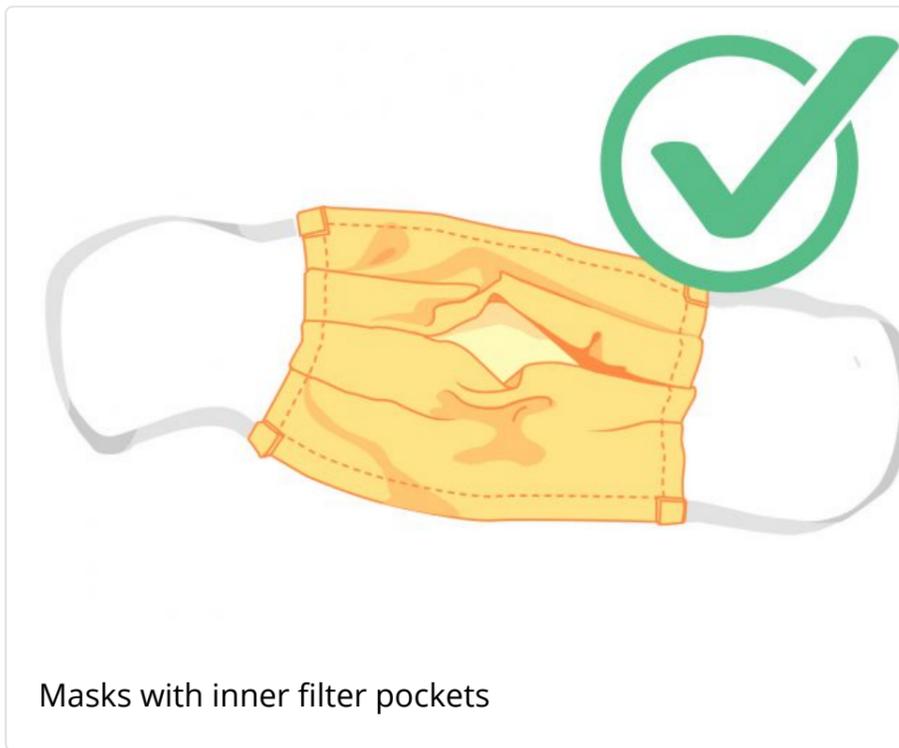
Masks with one layer



Masks with exhalation valves or vents



Masks with two or three layers



Masks with inner filter pockets

## Cloth masks

The most effective fabrics for cloth masks are

- Tightly woven fabrics, such as cotton and cotton blends
- Breathable
- Two or three layers

Less effective fabrics for cloth masks are

- Loosely woven fabrics, such as loose knit fabrics
- Difficult to breathe through (like plastic or leather)
- Single layer

CDC is currently studying the effectiveness of various cloth mask materials. We will update this guidance as we learn more.

## Non-medical disposable masks

Disposable face masks are single-use masks. They are sold online and through large retail stores. These are not the same as surgical or other medical masks.

You may prefer using disposable masks in situations where your mask is likely to get wet or dirty. As with cloth masks, make sure your disposable mask fits close to your face without large side-gaps and completely covers your nose and mouth. Bring extra disposable masks with you in case you need to change out a dirty or wet mask.



## Masks with exhalation valves or vents

CDC **does not recommend** using masks with exhalation valves or vents because this type of mask may not prevent you from spreading COVID-19 to others. The hole in the material may allow your respiratory droplets to escape and reach others. Research on the effectiveness of these types of masks is ongoing.



## Surgical masks and respirators

**Do not use** surgical masks and respirators that are meant for healthcare workers. Currently, surgical masks and respirators are critical supplies that should be reserved for healthcare workers and other medical first responders to prevent supply shortages.



## Clear masks or cloth masks with a clear plastic panel

Clear masks or cloth masks with a clear plastic panel are an alternative type of mask for people who interact with

- People who are deaf or hard of hearing
- Young children or students learning to read
- Students learning a new language
- People with disabilities
- People who need to see the proper shape of the mouth for making appropriate vowel sounds, e.g., in singing



If you use this type of mask, make sure

- You can breathe easily
- Excess moisture does not collect on the inside of the mask
- You remove the mask before sleeping, since the plastic part could form a seal around your mouth and nose and make it hard to breathe

The FDA recently cleared a [transparent](#)   medical mask. These transparent medical masks should be reserved for use by healthcare workers and patients who require them.

## Other Types of Face Protection

CDC does not recommend using face shields or goggles as a substitute for masks. Do NOT put a plastic face shield (or a mask) on newborns or infants.



Face shields and goggles are primarily used to protect the eyes of the person wearing it. Goggles do not cover the nose and mouth. Face shields have large gaps below and alongside the face, where your respiratory droplets may escape and reach others around you. At this time, we do not know how much protection a face shield provides to people around you. However, wearing a mask may not be feasible in every situation for some people.



Face shields and goggles

For example, people who interact with those who are deaf or hearing impaired may find that a face shield is better than a mask when communicating. If you must wear a face shield instead of a mask:

- Choose a face shield that wraps around the sides of your face and extends below your chin or a hooded face shield. This is based on the limited available data that suggest these types of face shields are better at preventing spray of respiratory droplets.
- Wash your hands before and after removing the face shield. Avoid touching your eyes, nose, and mouth when removing it.
- Clean and disinfect reusable face shields according to the manufacturer's instructions or by following [CDC face shield cleaning instructions](#). If you use a disposable face shield, wear it once and throw it away according to the manufacturer's instructions.

## Mask adaptations and alternatives

CDC recognizes that wearing masks may not be possible in every situation or for some people. Those who cannot wear a mask are urged to prioritize virtual engagement when possible. For in-person activities, we have provided a few examples of what you can do to make wearing a mask more feasible and how to reduce the spread of COVID-19 if you cannot wear a mask.

### Situations where wearing a mask may not be possible

- Make sure to maintain physical distance from others when you cannot wear a mask.

#### Dining

- CDC recommends wearing a mask while dining in a restaurant except when actively eating or drinking.

#### Water activities

- Do not wear a mask when doing activities that may get your mask wet, like [swimming at the beach or pool](#). A wet mask can make it difficult to breathe and may not work as well when wet.

#### High intensity activities

- Masks should be used in public settings, but if you are unable to wear a mask because of difficulty breathing during high intensity activities, choose a location with greater ventilation and air exchange (for instance, outdoors versus indoors) and where you can keep at least 6 feet from others during the activity.
- If you are able to wear a mask, remove your mask if it gets moist from sweat and replace it with a clean mask.
- Opt for an activity that does not require using mouth guards or helmets. Wearing a mask with these types of protective equipment is not safe if it makes it hard to breathe.
- Supervise children who are wearing a mask while playing sports.

## Certain groups of people who may find it difficult to wear a mask

### Some children 2 years and older, and people of any age with certain disabilities

Appropriate and consistent use of masks may be challenging for some children and for people of any age with certain disabilities, including cognitive, intellectual, developmental, sensory, and behavioral disorders.

When deciding if children and people with certain disabilities should wear a mask, determine if they can:

- [Use a mask correctly](#)

- Avoid frequent touching of the mask and their face
- Limit sucking, drooling, or having excess saliva on the mask
- Remove the mask without assistance

If children and people with certain disabilities are unable to wear a mask properly or cannot tolerate a mask, they should not wear one.

Those caring for children and people with certain disabilities who may not be able to wear a mask should

- Ask their healthcare provider for advice about their wearing a mask
- Ensure proper mask size and fit
- Remove their mask before sleeping, napping, when they may fall asleep (such as in a car seat or stroller), and in situations when continual supervision is not possible
- Consider prioritizing wearing a mask when it is difficult to keep at least 6 feet from others (for example, during carpool drop off or pick up, or when standing in line at schools or stores)

Masks should **not** be worn by:

- Children younger than 2 years old
- Anyone who has trouble breathing
- Anyone who is unconscious, incapacitated, or otherwise unable to remove the mask without assistance

### **People who are deaf or hard of hearing, and those who will interact with people who are hearing impaired**

If you interact with people who rely on reading lips, you may have difficulty communicating while wearing a mask.

- Consider wearing a clear mask or a cloth mask with a clear panel
- If you are not able to get a clear mask, consider using written communication, closed captioning, or decreasing background noise to make communication possible while wearing a mask that blocks lips

### **People with certain underlying medical conditions**

Most people with underlying medical conditions can and should wear masks.

- If you have respiratory conditions and are concerned about wearing a mask safely, discuss with your healthcare provider the benefits and potential risks of wearing a mask.
- If you have [asthma](#), you can wear a mask. Discuss with your healthcare provider if you have any concerns about wearing a mask.

### **Outdoor workers**

If you work in a setting where masks could increase the risk of [heat-related illness](#) or cause safety concerns (for example, straps getting caught in machinery):

- Discuss with an occupational safety and health professional about what mask would be suitable.
- Prioritize wearing masks when in close contact with other people, like during group travel or shift meetings, and remove masks when social distancing is maintained. Some localities may require wearing masks in public outdoors, and these requirements should be followed.

## **Mask use and carbon dioxide**

### **Wearing a mask does not raise the carbon dioxide (CO<sub>2</sub>) level in the air you breathe**

A cloth mask does not provide an airtight fit across the face. The CO<sub>2</sub> completely escapes into the air through and around the sides of the cloth mask when you breathe out or talk. CO<sub>2</sub> is small enough to easily pass through any cloth mask material. In contrast, the virus that causes COVID-19 is much larger than CO<sub>2</sub>, so it cannot pass **as easily** through a properly designed and properly worn cloth mask.

## Recent studies

- Mueller AV, Eden MJ, Oakes JM, et al. Quantitative Method for Comparative Assessment of Particle Removal Efficiency of Fabric Masks as Alternatives to Standard Surgical Masks for PPE (July 2020). <https://doi.org/10.1016/j.matt.2020.07.006>   
<https://www.sciencedirect.com/science/article/pii/S2590238520303647> 
- Anindita M, Das K. COVID-19 Pandemic: Is Cloth Mask Really Protect Public From SARS-CoV-2? (The way of handling to get Results) (May 2020). <https://www.ijisrt.com/assets/upload/files/IJISRT20MAY228.pdf>  
- Lustig SR, Biswakarma JJH, Rana D, et al. Effectiveness of Common Fabrics to Block Aqueous Aerosols of Virus-like Nanoparticles (May 2020). <https://pubs.acs.org/doi/abs/10.1021/acsnano.0c03972> 
- Sousa-Pinto B, Fonte AP, Lopes AA, et al. Face masks for community use: An awareness call to the differences in materials (August 2020). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7361409/> 
- Chughtai AA, Seale H, Macintyre CR. Effectiveness of Cloth Masks for Protection Against Severe Acute Respiratory Syndrome Coronavirus 2 (July 2020). <https://europepmc.org/article/med/32639930> 
- Bagheri MH, Khalaj I, Azizi A, et al. Filtration Efficiency, Breathability, and Reusability of Improvised Materials for Face Masks (July 2020) PREPRINT. <https://engrxiv.org/nrtgb/> 
- Gandhi M, Beyrer C, Goosby E. Masks Do More Than Protect Others During COVID-19: Reducing the Inoculum of SARS-CoV-2 to Protect the Wearer. *J Gen Intern Med*. DOI: 10.1007/s11606-020-06067-8
- Wang H, Wang Q, Lin YL, Kilinc-Balci FS, Price A, Chu L, Chu MC. Household materials selection for homemade cloth face coverings and their filtration efficiency enhancement with triboelectric charging. *Nano Letters*. 2020 Jun 2."
- Rothe C, Schunk M, Sothmann P, et al. Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany. *The New England journal of medicine*. 2020;382(10):970-971.
- Zou L, Ruan F, Huang M, et al. SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients. *The New England journal of medicine*. 2020;382(12):1177-1179.
- Pan X, Chen D, Xia Y, et al. Asymptomatic cases in a family cluster with SARS-CoV-2 infection. *The Lancet Infectious diseases*. 2020.
- Bai Y, Yao L, Wei T, et al. Presumed Asymptomatic Carrier Transmission of COVID-19. *Jama*. 2020.
- Kimball A HK, Arons M, et al. Asymptomatic and Presymptomatic SARS-CoV-2 Infections in Residents of a Long-Term Care Skilled Nursing Facility — King County, Washington, March 2020. *MMWR Morbidity and mortality weekly report*. 2020; ePub: 27 March 2020.
- Wei WE LZ, Chiew CJ, Yong SE, Toh MP, Lee VJ. Presymptomatic Transmission of SARS-CoV-2 — Singapore, January 23–March 16, 2020. *MMWR Morbidity and Mortality Weekly Report*. 2020; ePub: 1 April 2020.
- Li R, Pei S, Chen B, et al. Substantial undocumented infection facilitates the rapid dissemination of novel coronavirus (SARS-CoV2). *Science (New York, NY)*. 2020.
- Furukawa NW, Brooks JT, Sobel J. Evidence Supporting Transmission of Severe Acute Respiratory Syndrome Coronavirus 2 While Presymptomatic or Asymptomatic [published online ahead of print, 2020 May 4]. *Emerg Infect Dis*. 2020;26(7):10.3201/eid2607.201595. [Link](#)
- Oran DP, Topol Prevalence of Asymptomatic SARS-CoV-2 Infection: A Narrative Review [published online ahead of print, 2020 Jun 3]. *Ann Intern Med*. 2020;M20-3012.
- National Academies of Sciences, Engineering, and Medicine. 2020. Rapid Expert Consultation on the Possibility of Bioaerosol Spread of SARS-CoV-2 for the COVID-19 Pandemic (April 1, 2020). Washington, DC: The National Academies Press. <https://doi.org/10.17226/25769> 
- Schwartz KL, Murti M, Finkelstein M, et al. Lack of COVID-19 transmission on an international flight. *CMAJ*. 2020;192(15):E410.
- Anfinrud P, Stadnytskyi V, Bax CE, Bax A. Visualizing Speech-Generated Oral Fluid Droplets with Laser Light Scattering. *N Engl J Med*. 2020 Apr 15. doi:10.1056/NEJMc2007800.
- Davies A, Thompson KA, Giri K, Kafatos G, Walker J, Bennett A. Testing the efficacy of homemade masks: would they protect in an influenza pandemic? *Disaster Med Public Health Prep*. 2013;7(4):413-8.
- Konda A, Prakash A, Moss GA, Schmoldt M, Grant GD, Guha S. Aerosol Filtration Efficiency of Common Fabrics Used in Respiratory Cloth Masks. *ACS Nano*. 2020 Apr 24.

- Aydin O, Emon B, Saif MTA. Performance of fabrics for home-made masks against spread of respiratory infection through droplets: a quantitative mechanistic study. medRxiv preprint doi: <https://doi.org/10.1101/2020.04.19.20071779>, posted April 24, 2020.
- Ma QX, Shan H, Zhang HL, Li GM, Yang RM, Chen JM. Potential utilities of mask-wearing and instant hand hygiene for fighting SARS-CoV-2. *J Med Virol.* 2020.
- Leung, N.H.L., Chu, D.K.W., Shiu, E.Y.C. *et al.* Respiratory virus shedding in exhaled breath and efficacy of face masks. *Nat Med.* 2020.
- Johnson DF, Druce JD, Birch C, Grayson ML. A quantitative assessment of the efficacy of surgical and N95 masks to filter influenza virus in patients with acute influenza infection. *Clin Infect Dis.* 2009 Jul 15;49(2):275-7.
- Green CF, Davidson CS, Panlilio AL, et al. Effectiveness of selected surgical masks in arresting vegetative cells and endospores when worn by simulated contagious patients. *Infect Control Hosp Epidemiol.* 2012;33(5):487-494.

Last Updated Dec. 7, 2020