



# Maine Indoor Air Quality Council: Managing Indoor Spaces to Reduce COVID-19 Exposure Indoors

## **MODULE TWO: THE VALUE OF MASKS, PHYSICAL DISTANCING, AND PERSONAL HYGIENE**

# Learning Objectives of This Badge Program

- ▶ Transmission of COVID-19 is more likely in indoor environments
- ▶ There are indoor management strategies available to reduce exposure
- ▶ There is no single management strategy that prevents exposure
- ▶ Implementing layers of strategies will provide the greatest reduction in potential exposure.
- ▶ This Badge program provides a basic introduction to available strategies to reduce exposure

# Module Two

## Personal Protection Measures

In this module, you'll learn about three simple personal protection measures you can implement to reduce the risk of exposure to COVID-19 in indoor spaces.



# Personal Protection From Infection

Because there are three ways COVID-19 can spread (inhalation, close personal contact, and contact with surfaces), there are three key strategies that every individual can personally implement to reduce their risk of exposure to COVID-19. They are:

**1** Wear a mask

**2.** Practice physical distancing

**3.** Practice good personal hygiene

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# Why Wearing Masks is So Important

- ▶ COVID-19 is predominantly spread by the droplets and very small respiratory particles, called aerosols, that are emitted when an infected person breathes, speaks, coughs or sneezes.
- ▶ Masks provide **source control** by reducing the exhaled virus droplets of an infected person. (Reminder: source control is the practice of preventing pollutants from entering the indoor environment.)
- ▶ Masks also reduce exposure to infectious droplets by filtering them out before they can be inhaled by others.
- ▶ Studies show that when everyone wears masks indoors (both infected and noninfected persons), the number of virus particles emitted into the air may drop by as much as 75%.



# Masks by the numbers...

## Scientific studies of COVID-19 and masks show the following:

- ▶ Most mask types are capable of filtering out at least 50% of the droplets exhaled by infected people.
- ▶ Therefore, when an infected person breathes out, only one half of the droplets will enter the air. ( $100/2 = 50$ )
- ▶ If a non-infected person rebreathes the air of an infected person wearing a mask, and the non-infected person is also wearing a mask, their mask will also reduce the number of droplets by half. ( $50/2 = 25$ )
- ▶ 50% reduction from the infected person's mask plus the 25% reduction from non-infected persons mask = 75% reduction in virus particles in the air.

# What type of mask is best?

While masks can be made from a variety of materials, there are two key mask features that together will make them most effective:

They should fit snugly over both the wearer's nose and mouth, without any gaps that might allow air to bypass the mask material.



They should have multiple layers to create the “Swiss cheese effect”:

- ▶ Picture a stack of Swiss cheese.
- ▶ Each slice has holes, but as you stack them, the holes are covered up.
- ▶ Similarly, masks with multiple layers will have fewer holes, thus filtering more particles.

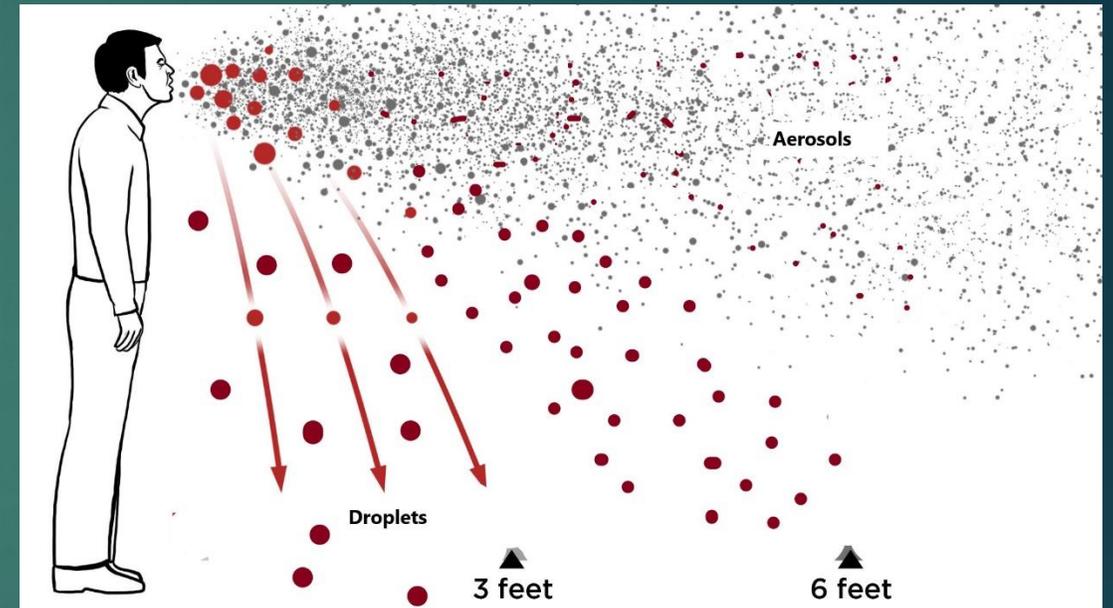
# Proper Removal and Care

- ▶ After use, remove the mask by its ear straps. Avoid touching the surface of the mask itself. (wash/sanitize your hands afterwards)
- ▶ If the mask is a reusable cloth mask, simply wash it with your regular laundry.
- ▶ Discard disposable masks or clean cloth masks after each use.



# Physical Distancing – Why It Works

- ▶ When an infected person breathes, speaks, coughs or sneezes, they will emit virus particles into the air.
- ▶ The largest concentration of virus particles will be in the area immediately surrounding an infected person. This is why close physical contact with an infected person carries the greatest risk of exposure.
- ▶ Larger particles, called droplets, will settle out of the air quickly, probably within six feet.
- ▶ Smaller particles, called aerosols, will travel in the air for a while before settling onto surfaces. They will mix with the rest of the air in the space and become less concentrated the farther away from the infected person they get.



# How Far Should You Be From Other People?

## 6 Feet?

- ▶ How far particles can travel depends on how fast they are going when emitted by the infected person (breathing vs. sneezing for example), how large or small they are, and whether or not there are air currents to help move them along.
- ▶ The farther away from an infected person you can get, the fewer virus particles a non-infected person will be exposed to.
- ▶ National public health organizations recommend a minimum distance of six feet (two arm lengths). This may or may not be adequate for COVID-19.

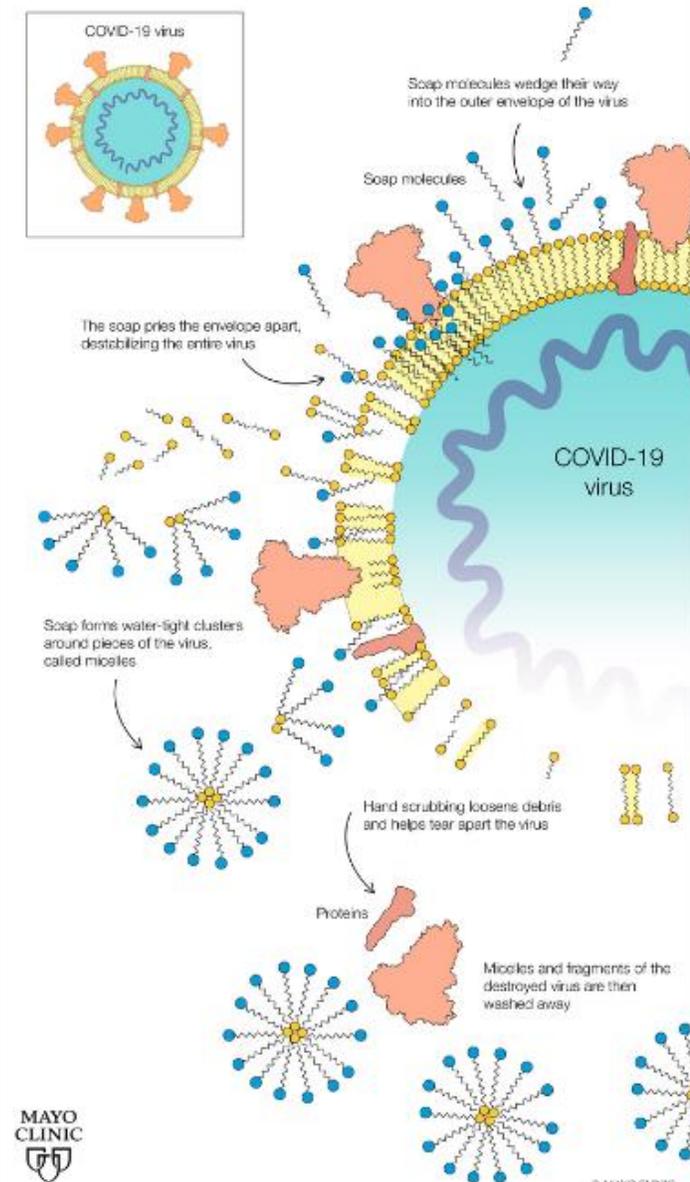
# Personal Hygiene

- ▶ Always practice the “precautionary principle” by assuming the presence of the virus around you when in indoor spaces.
- ▶ Take every possible precaution to avoid direct personal contact with others, and use personal hygiene practices to reduce your risk of exposure.
- ▶ **Available hygiene practices include:**
  - ▶ Handwashing with soap and water
  - ▶ Using hand sanitizers when handwashing is not possible
  - ▶ Being careful not to touch your mouth, nose or eyes before washing or sanitizing your hands

# Why handwashing works

- ▶ When you have direct personal contact with an infected person or touch a surface that has virus on it, the virus will “stick” to your skin and remain there until washed off.
- ▶ Virus particles stick to your skin because your skin has oils on it. Soap has physical properties that loosen the particles from your skin.
- ▶ When you rinse your soapy hands, you wash the soap and virus particles away.

## How Soap Kills the COVID-19 Virus (SARS-CoV2)



# Hand Sanitizers vs. Soap & Water

- ▶ Unlike soap and water, hand sanitizers do not actually remove germs and viruses from your hands.
- ▶ However, hand sanitizers with at least 60% alcohol can inactivate many germs, microbes and viruses.
- ▶ Use hand sanitizers when soap and water are not available.



# When to wash or sanitize your hands:

- ▶ After blowing your nose, coughing, or sneezing
- ▶ After removing your mask
- ▶ After being touching high contact areas and surfaces indoors in a public place



# To learn more...

- ▶ Visit the COVID-19 Resources Page on the website of the Maine Indoor Air Quality Council. Click here: [COVID-19 Resources Page - Maine Indoor Air Quality Council](#)

- ▶ Contact:

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# Knowledge Check:

The strategies individuals can personally implement to reduce their exposure to COVID-19 are \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

A \_\_\_\_\_ reduces the number of virus particles both infected people breathe out into indoor spaces and the number of virus particles non infected people breathe in.

\_\_\_\_\_ and \_\_\_\_\_ will inactivate (kill) virus particles?

# Knowledge Check: Answers

The strategies individuals can personally implement to reduce their exposure to COVID-19 are **wear a mask, practice physical distancing, and washing hands.**

A **mask** reduces the number of virus particles both infected people breathe out into indoor spaces and the number of virus particles non infected people breathe in.

**Hand washing and hand sanitizing** will inactivate (kill) virus particles?

# Congratulations!

You made it to the end of Module Two of Managing indoor spaces to reduce exposure to COVID-19 indoors.

Your next step is to start learning about the role of ventilation to reduce exposure to COVID-19 indoors.