

WHAT IS VENTILATION AND WHY DOES IT MATTER?



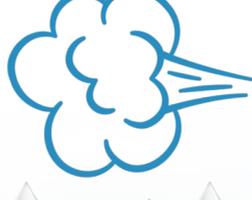
VENTILATION

is the movement of air in and out of spaces.

Good air movement and quality are important to **reduce the spread of germs.**

To understand the difference between good and poor ventilation, let's look at how respiratory droplets travel.

When we breathe out, we exhale respiratory droplets. While some fall to ground or land on surfaces, others stay in the air.



Now, let's imagine this respiratory droplet as food coloring.

An area with good ventilation, is similar to adding this drop of food coloring into the ocean.



A drop is little compared to the **LARGE OCEAN** so the ocean doesn't turn a different color.

You can only see where the drop was for a few seconds, as the ocean quickly carries it away. This is similar to the respiratory droplets we breathe outdoors. You worry less about these droplets because they are carried away quickly and essentially disappear.



An area with poor ventilation is similar to adding one drop of food coloring into a glass of water.

The glass is full of water that is not moving in or out.

Once a drop is added, the whole glass turns the color of the drop.

Similarly, when a sick person exhales in a room with poor ventilation, the **virus carried by the respiratory droplets will stay for a while because the air has nowhere to go.**



Let's use the example of someone **microwaving fish in the break room.**

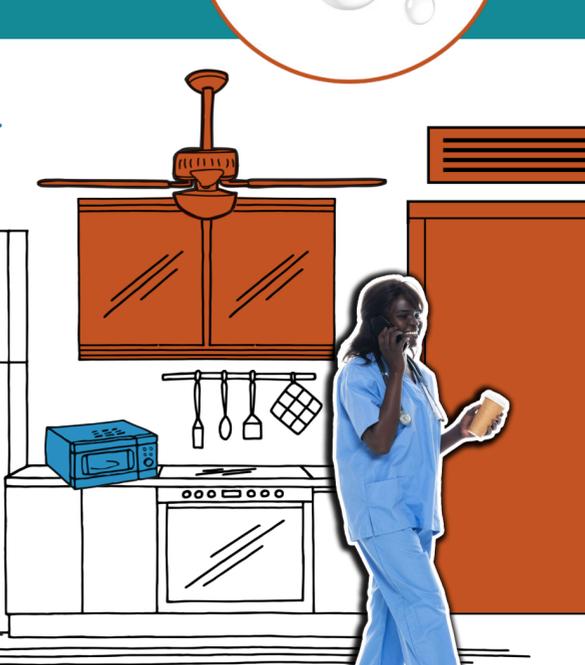
To eliminate the fishy smell you could:

TURN ON A FAN.

OPEN A WINDOW to clean the air.

ALLOW FILTERS.

OR AVOID THE AREA until the smell is gone.



But why does ventilation matter in healthcare?

Clean air can reduce the spread of germs among your patients and co-workers.

In healthcare settings, nearly every room has a recommended number of **air exchanges**, usually measured by hours.



An air exchange

is the time it takes for a room's old air to be nearly or completely replaced with new air.



This time tells you

how long you should wait after a person leaves, before you enter without a respirator or other personal protective equipment (PPE).



WITH PPE

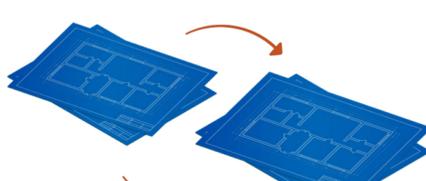
You can enter a room before the air has exchanged and while the patient is there.

WITHOUT PPE

It is recommend to wait for the air to exchange before entering.

NOTE:
Increasing air ventilation in healthcare settings is **NOT** as simple as ventilating a smelly break room.

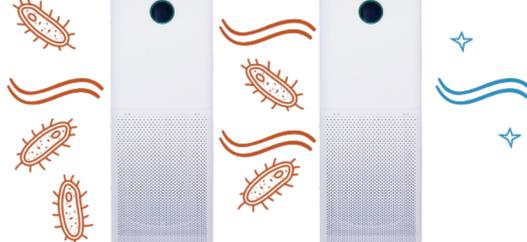
Opening a window or using the room's fan can change the balance of air across the facility.



Any actions done in one room affect another. So work with your building's engineer or maintenance staff to ensure ventilation is done correctly.

Ventilation is one of many strategies to keeping germs from spreading.

The fewer germs in the air, the less likely people are to breathe them in or touch surfaces where they land.



Use this knowledge to improve ventilation and air quality for yourself and others!

For more information on topics like this, visit [cdc.gov/projectfirstline](https://www.cdc.gov/projectfirstline). See all of NNPHI's Project Firstline **interactive learning experiences.**

