

Stuck in a Healthier Home

Home Isolation Zone



The principles of “Home Isolation Zone” were originally shared as part of “Ventilation Tips for the Housebound” on March 31, 2020. They haven’t changed.

Some diseases are carried by small particles that travel in the air. If a person in your home is ill, you may be concerned about the air that the rest of the household is breathing. You can create an isolation zone within your home, reducing the air connection between that space and the rest of the home and ventilating that space to outside. The isolation zone is based on the simple principle that air flows from high pressure to low pressure. The goal is to decrease the pressure in the isolation zone compared to the rest of the home, and then vent that space to outside, not allowing any of its air to enter the home.

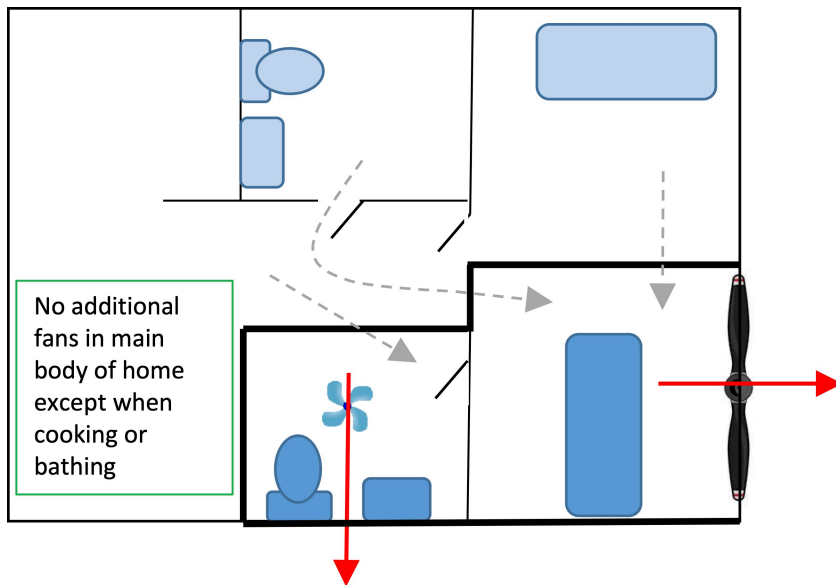
Some of the home components described here are shown in photos at the end of this document.

1) Separate a room.

- Choose the portion of the home you want to use as the isolation zone.
- Keep doors closed between the isolation zone and the rest of the home.
- Close off central-air system supply registers and return grilles (Photo1) in the isolation zone, so that air from that zone is not distributed through the whole house. Use tape, or tape plastic over the registers and grilles, in addition to closing the louvers (Photo2). Make sure to follow CDC personal protection guidance when closing off these registers and grilles.
 - If you do NOT have a central-air system, you don’t have to do anything else. For example, heating from radiators is fine because they do not distribute air.
- Door undercuts can be sealed with the same tape used for heating vents or stuffed with cloth.

2) Push air OUT of the isolation zone to outdoors.

- Turn on any exhaust fans (Photo3), like bathroom fans, in the isolation zone. This will lower the pressure in that zone.
- Do NOT increase exhaust ventilation, like bathroom and kitchen fans (Photo4), in other parts of the home (except when you are cooking or bathing). Those fans reduce pressure in the rest of the home, and draw air from the isolation zone in.
- Add more exhaust ventilation to the room. Standard exhaust fans do not move enough air to control the pressure, so mount a box fan in the window, blowing outward, and seal the rest of the window opening with plastic or cardboard (Photo5).



*Figure: Creating an **isolation zone**, marked with bold borders. Red arrows show air pushed from the isolation zone to outdoors, using a box fan. Bathroom and other exhaust fans in the zone should also be on. Gray arrows show how air will move from the rest of the home into the isolation zone, drawn in by the low pressure in the zone.*

3) Keep the occupant comfortable.

- A suite that includes bathroom facilities is ideal, if available. If not, choose the room with the shortest path to the bathroom.
- If you have shut off the central heating or air conditioning, you should consider alternative sources of space conditioning for the isolation zone.
 - If you use portable space heaters, be careful to use only models that shut off if they tip over, and keep all flammable materials away from them.
 - You can use either window or portable room air conditioners for cooling. Portable room air conditioners have a duct that can be installed in a window to remove the heat from the room.

Interacting outside the isolation zone

Ill people may need to leave the isolation zone to eat, to use the toilet, or just for sanity. At these times, the separation from the rest of the home will be broken. Here are some ideas to keep the rest of the home as safe as possible.

- Even when the ill person is not in the isolation zone, close the door and leave the exhaust fans on in the isolation zone.
- When an ill person has to interact directly with others, they should both wear masks.
- When someone else has to enter a space where the ill person has recently been, such as a bathroom or kitchen, the surfaces should be cleaned first.



The isolation zone is designed to isolate ill people from the rest of the house. Air from the remainder of the home is likely to travel into the isolation zone. If you want to isolate a sensitive person from people who might be infectious in the remainder of the house, please see “The Sheltered Zone” instead.

Disclaimer: The isolation zone reduces the probability of airborne transmission from the isolation zone to the rest of the home. No single action can guarantee that people won’t become infected. The information provided here is intended to supplement, not replace, CDC recommendations. You should continue to follow CDC guidelines on wearing masks, wearing gloves, hand washing, and rigorously cleaning surfaces.

CDC = Centers for Disease Control and Prevention, www.cdc.gov/coronavirus/2019-ncov/

More resources for a healthier home:

English <http://www.humanenvironments.org/sphere/resources>

Español <http://www.humanenvironments.org/sphere/recursos>

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Photos that Illustrate Home Components



Photo 1. Return grille.

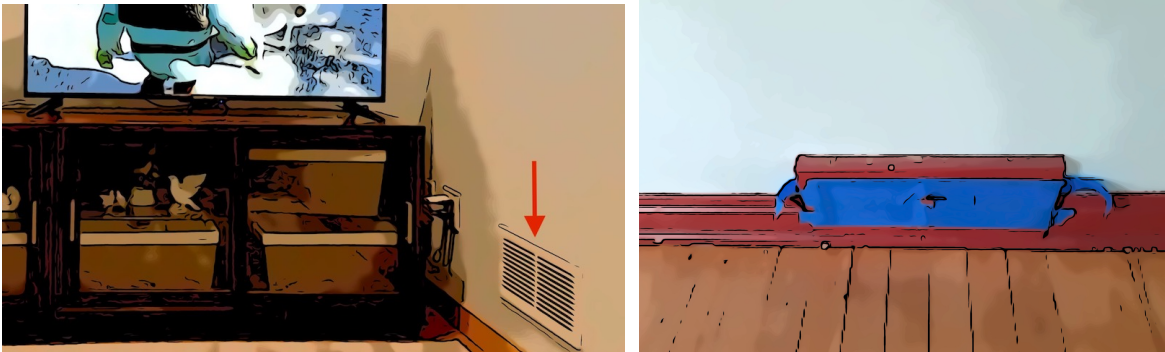


Photo 2. Heating or cooling register. Left: Open. Right: Sealed.

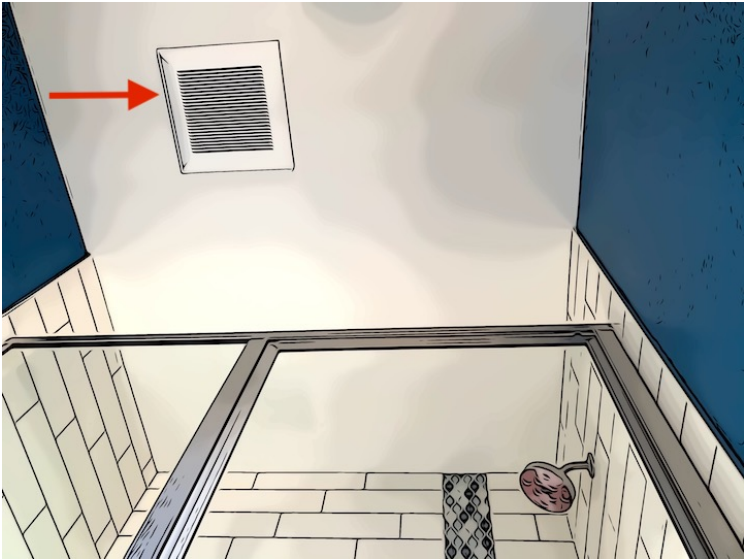


Photo 3. Bath fan



Photo 4. Kitchen range hood, showing duct to outdoors. Range hoods without a duct do not increase ventilation.



Photo 5. Fan mounted in window to blow outdoor air into the room, with window sealed except where the fan is.

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