WILDFIRE SMOKE FACTSHEET:

Improving Indoor Air

When wildfire smoke gets inside your home it can make your indoor air unhealthy. There are steps you can take to protect your health and improve the air quality in your home.

1. Reduce your indoor particle emissions during smoke events to help compensate for the increased particles in the outdoor air.

Reduce indoor particle emissions: Avoid burning candles, smoking tobacco products, using aerosol products, and using a gas or wood-burning stove or fireplace.
Avoid re-suspending particles: Do not vacuum during a fire event, unless using a HEPA-filter equipped vacuum.

2. Make your inside space cleaner.

Stay inside: Staying inside with the doors and windows closed can usually reduce exposure to ambient air pollution by at least a third or more.
Create a clean room: People, especially at-risk individuals, who live in areas that are regularly affected by smoke from wildfires or who are in an area where the wildfire risk has been determined to be high, would be well advised to create a "clean room" in their home.
Explore indoor air filtration options: This factsheet outlines options and best practices for filtering the air in your home

CREATE A CLEAN AIR ROOM AT HOME

Designate a room in your home as a clean air room. A good choice is an interior room, with as few windows and doors as possible, such as a bedroom. Suggestions for maintaining a clean air room include:

• Pre-clean (vacuum and dust) your room. • During an event, keep windows and doors closed. • Run your air conditioner or central air system if you have one. If the air conditioner provides a fresh air option, keep the fresh-air intake closed to prevent smoke from getting inside. If you are using a central air system, run it continuously by switching the thermostat fan from "Auto" to "On". • If you don't have central air, set up a properly sized room air cleaner, and check to ensure maximum filter efficiency, specifically HEPA • During a wildfire smoke event, do not vacuum anywhere in the house, unless using a HEPA-filter equipped vacuum. • Do not smoke or burn anything anywhere in the house, including candles or incense.

If it is too warm to stay inside with the windows closed, or if you are very sensitive to smoke, seek shelter at alternate indoor spaces that have clean indoor air quality.

FILTRATION OPTIONS

There are two effective options for improving air filtration in the home: 1) upgrading the central air system filter, and 2) using high efficiency portable air cleaners, such as a HEPA filter. Keep windows closed while using these options. Before discussing filtration options, it is important to understand the basics of filter efficiency.

Filter Efficiency

The most common industry standard for filter efficiency is the Minimum Efficiency Reporting Value, or "MERV rating." The higher the MERV rating the more particles are captured as the air passes through the filter, including very small particles that can most affect health.

Central Air System Filter

The filter used in the central heating/cooling system of the home can effectively reduce indoor particle concentrations when the system is operating or when only the fan is turned on. Replacing this filter with a medium efficiency filter (MERV 5-8) can significantly improve the air quality in your home. A true high efficiency filter (MERV 13-16) can reduce indoor particles by as much as 95 percent. Filters with a High Efficiency Particulate Air (HEPA) rating, (or MERV 17-20) are the most efficient. You may need to consult with a local heating and air technician or the manufacturer of your central air system to confirm which (or if) high efficiency filters will work with your system. If you can't switch to a more efficient filter, running the system continuously by switching the thermostat fan from "Auto" to "On" has been shown to reduce particle concentrations by as much as 24 percent.

Most air conditioners are designed by default to re-circulate indoor air. **Systems that have settings for both "outdoor air" and "re-circulate" need to be set on "re-circulate" during wildfire and smoke events.**

Portable Air Cleaners

Portable air cleaners are self-contained air filtration appliances that can be used alone or with enhanced central air filtration to effectively remove particles. How well they reduce air particle concentrations depends on several factors such as the size of the air cleaner, the area to be cleaned, the filter efficiency, how frequently the unit is turned on and the fan speed. Portable air cleaners fitted with high efficiency filters can reduce indoor particle concentrations by as much as 85 percent. Furthermore, portables can be operated continuously at a lower cost compared to the continuous operation of a central system.

CHOOSING A PORTABLE AIR CLEANER

There are a wide variety of air cleaners on the market, ranging in price from about $50 to $3,000. When selecting a portable air cleaner, it is important that it is appropriate for the space being used in, the doors and windows are kept closed while it is being used, and it uses a HEPA filter.

Types of Portable Air Cleaners

Most portable air cleaners fall under two basic categories: 1) mechanical and 2) electronic. Mechanical air cleaners operate by pulling air through a filter that traps particles. Mechanical air cleaners are very reliable and do not produce ozone, an air pollutant that is a known health hazard. Filters in these devices need to be replaced according to the manufacturers' recommendations, or when the filter is dirty, and the air cleaner is not operating efficiently, typically every 4-8 months. Electronic air cleaners often use an electrical charge to charge particles and remove them from the air.

Generally, electronic air cleaners are NOT recommended because they may generate ozone and/or other potentially harmful chemical compounds. They are not currently regulated, except in California. A list of air cleaners that are certified as being ozone-safe can be found here: https://ww3.arb.ca.gov/research/indoor/aircleaners/certified.htm.

Size Rating of Portable Air Cleaner

When purchasing an air cleaner, check the square footage rating of the device to be sure that the air cleaner capacity is appropriate for the space it is intended to clean. This should be clearly marked on the box or product description. But, remember, the air cleaner will only work in this space if doors and windows are closed. A useful way to estimate the proper size device is the Clean Air Delivery Rate, or CADR, which is the removal efficiency for a specific size particle and volume of air delivered by an air cleaner in one minute. A useful tool to determine the appropriate air cleaner size for the intended space can be found at http://www.ahamdir.com.

Efficiency

For best results, the portable air cleaner you purchase should have a filter rated as "high efficiency" (high MERV) or HEPA. The filters for these devices may be more expensive but will do a much better job of cleaning the air than devices with cheaper, low efficiency filters.

DIY PORTABLE AIR CLEANER

A DIY air cleaner may be an easy and cost-effective way to make your home filter fan clean air. Information on how to construct a portable air cleaner and important safety tips to follow while using one of these fans can be found at Puget Sound Clean Air Agency's *DIY Air Filter* website: https://www.pscleanair.org/525/DIY-Air-Filter.

For more information on air cleaning devices:

- Washington Department of Health factsheet: https://www.doh.wa.gov/Portals/1/Documents/Pubs/333-208.pdf
- Learn more about certified air cleaning devices: https://www.epa.gov/indoor-air-quality-iaq/guide-air-cleaners-home

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