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When wildfire smoke gets inside your home it can make your indoor air unhealthy, but there are steps you can take to protect your health and improve the air quality in your home. Reducing indoor sources of pollution is a major step toward lowering the concentrations of particles indoors. For example, avoid burning candles, smoking tobacco products, using aerosol products, and avoid using a gas or wood-burning stove or fireplace. Another step is air filtration. This fact sheet discusses effective options for filtering your home's indoor air to reduce indoor air pollution.

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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. Before discussing filtration options, it is important to understand the basics of filter efficiency.

### ***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. Most home systems use a low MERV (1-4) fiberglass filter that is 1" thick. Replacing this filter with a medium efficiency filter (MERV 5-8) can significantly improve the air quality in your home. Higher efficiency fi

# C a P ab A C a

There are a wide variety of air cleaners on the market, ranging in price from about \$50 to \$3,000. Air cleaners that cost less than about \$200 often do not clean the air as well and may not be helpful for wildfire smoke.

## Types of Air Cleaners

Most 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.

Electronic air cleaners often use an electrical charge to charge particles and remove them from the air.

The three main types of electronic air cleaners are electrostatic precipitators (ESPs), ionizers, and intentional ozone generators. ESPs have plates (collectors) that need to be cleaned when they get dirty. Ionizers work by making particles deposit on nearby materials.

Other types of

electronic air cleaners use ultraviolet (UV) bulbs and surface coatings like titanium dioxide to improve the removal of pollutants. However, these devices can emit ozone and some that are designed to remove chemicals actually emit volatile organic chemicals into the air. This includes devices that are sold as "hydroxyl" generators.

Electronic air cleaners are not currently regulated, except in California. Caution should be used when selecting an electronic air cleaner, as they may generate ozone and/or other potentially harmful chemical compounds. Air cleaners certified as being ozone-safe can be found on California's list of certified air cleaners at: <https://www.arb.ca.gov/research/indoor/aircleaners/certified.htm>.

## Size Rating of 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. 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>.

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