Home Air Cleaners

What are home air cleaners?

Air cleaners may be whole-house filtration systems or portable devices designed to remove odors and particles from the air.

Air cleaning is one of several strategies one can use to improve home air quality. Eliminating sources of pollution and increasing ventilation are two other effective ways to reduce indoor air pollution. Before purchasing an air cleaner, you should consider whether indoor pollution can be effectively controlled by either or both of these means.

How do air cleaners work?

Air cleaners may operate using different methods:

- **Filtration:** Air is drawn through a filter that collects dust and particulates. A common furnace filter works this way.

- **Electrostatic precipitation:** These devices use two charged metal plates to generate an electrical field. As air is drawn through the device, charged particles are collected on the plates.

- **Ion generation:** These devices act by charging particles in the air so that they are attracted to floors, drapes, walls and other room surfaces.

Some air cleaners may use more than one of these methods to increase the range of particles that may be collected. In addition, some air cleaners contain activated carbon and other absorbent materials that are able to remove odors.

Will air cleaning improve my health?

No air cleaner will remove all hazards associated with air pollution or particles. In certain situations, air cleaners can help reduce indoor air pollution and provide relief from allergens and odors.

Air cleaners can do an adequate job in removing small particles, such as tobacco smoke, which can be suspended in room air. The ability to remove these small particles depends on the amount of air drawn through the filter. Air filters are less effective in

removing large particles, such as pollens and house dusts because the particles are not suspended in the air for long times. In some cases, using an air cleaner may cause settled particles to be re-suspended, actually increasing the amount of pollution in the air.

Air cleaners strictly designed to remove particles will have no effect on pollutant gases, which are responsible for many home air quality problems. Air cleaners perform best when the filters and adsorbents are replaced as recommended by the manufacturer. Keep these considerations in mind if you decide to buy an air cleaner for your home.

Air cleaners employing electrostatic precipitation or ion generation may produce *ozone*, a gas that can irritate the lungs. Production of ozone may be particularly high if the air cleaning system has been improperly installed or maintained. The Department of Health and Family Services (DHS) does not recommend using air cleaning machines that operate by producing ozone.

For more information about ozone precautions, visit the EPA website: www.epa.gov/iaq/pubs/ozonegen.html

What should I look for in evaluating residential air cleaners?

Factors to be considered include:

- The types of contaminants which can be removed by the system.
- The costs to purchase and maintain the system.
- The efficiency of the system (that is, the percent of air pollution that is removed by the system).
- The amount of air that can be handled by the system.
- The volume of air which is to be cleaned.
- Avoid devices that operate primarily by ozone production.
- Certification of the system by the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE), Standard 52-76 (in-duct systems) or the Association of Home Appliance Manufacturers (AHAM), Standard AC-1-1988 (portable devices).

For more information

- Wisconsin Division of Public Health, Bureau of Environmental Health, PO Box 2659, Madison, WI 53701-2659, (608) 266-1120.

- For internet resources, visit www.dhs.wisconsin.gov/eh

Developed by the Wisconsin Division of Public Health,
Bureau of Environmental Health, 1 West Wilson St., Madison, WI 53701
P- (revised 11/02)