

Air Filters

What Do I Need to Know About Air Filters? When we think of air pollution, we usually associate it with outdoor air. But with the growing epidemic of asthma in the United States in the last 20 years, especially among infants and children who spend most of their time inside, much attention has been given to indoor air. In fact, in 1990 the United States Environmental Protection Agency (EPA) ranked indoor air pollution as "a high priority public health risk." The EPA recommends three strategies for reducing indoor air pollution:

- Controlling sources of pollution,
- Ventilating adequately and
- Cleaning indoor air.

Before you make any changes to your indoor home environment or purchase any air filtration products, make sure to speak with a doctor who knows your personal medical history and current condition. Will Air Filters Really Help my Asthma or Allergies? Although the EPA recommends air filtration, controlling the sources of allergy-causing pollution and ventilation are more important. Air filters are worth considering, but not as a solution to your asthma or allergy problems by themselves. In fact, research studies disagree on whether or not filters give much added relief in a clean and well-ventilated home. While many allergens and irritants are suspended in household air, there are far more resting on surfaces like rugs, furniture and countertops. Keeping these areas clean is an important step in controlling your allergy and asthma triggers. However, the most effective step is to eliminate the source of these allergens and irritants in the first place. Can Air Filters Protect Me from Secondhand Smoke? The only effective way to eliminate environmental tobacco smoke (ETS) -- also called "secondhand" smoke -- is to eliminate the source of smoke: get smokers in your family to quit smoking. Some air cleaners may help to reduce secondhand smoke to a limited degree, but no air filtration or air purification system can completely eliminate all the harmful constituents of secondhand smoke. The U.S. Surgeon General has determined secondhand smoke to cause heart disease, lung cancer, and respiratory illness. Also, a simple reduction of secondhand smoke does not protect against the disease and death caused by exposure to secondhand smoke. Are There National Health Standards for Air Filter Performance?

No. The Food and Drug Administration (FDA) has asked groups of experts to recommend national standards, but no Federal standards have yet been adopted. So far they have concluded there isn't enough research data on the relationship between air filtration and actual health improvement to recommend national standards. When you shop for air filters, you will find several rating systems that compare filters. But these are not health-related rating systems. They are standards used by manufacturers or manufacturers' organizations, and provide little guidance for the health-conscious shopper. How Can I Find a Quality Air Filter? Although the FDA has no health-related standards, it does consider some portable air filtration systems to be Class II medical devices. In the United States, nothing can claim this status without FDA approval. To get approval, a manufacturer must show two things: (1) that the device is safe, usually indicated by the Underwriters Laboratory (UL) seal, and (2) that it has a medical benefit. Look for both the UL seal and a statement of the FDA's Class II approval. If no FDA statement is available with the device, check the FDA's medical device listing before buying and always ask your doctor for guidance. What is 'Ozone' vs. 'Ozone Byproduct'? Most air filters have a normal "ozone byproduct." In fact, many of products already in your home make an ozone byproduct -- kitchen mixers, ceiling fans, hair dryers, computers, TVs, copiers, and more. An acceptable level for ozone byproduct for certain household devices has been set in the Code of Federal Regulations (CFR) at a maximum 50 parts per billion (ppb), or lower*. This maximum has also been voluntarily adopted by most air filter manufacturers and makers of other household electronics. However, machines called "ozone generators" directly produce ozone (O₃) molecules -- not as a byproduct, but as a direct product -- and blows it into the room to "clean" the air. Unfortunately these "ozone generator" machines can produce ozone up to 10-times more than the acceptable standard shown above. Therefore, AAFA and other groups recommend that you do not use "ozone generator" machines in your home.* This standard for acceptable levels of ozone byproduct are found in section 21:801.415 of the Code of Federal Regulations (CFR) and Underwriters Laboratory (UL) standard 867. Are there Different Kinds of Air Filters? Yes. Many homes have whole-house air filtration, but there are also several types of single-room air filters on the market. Here are five basic types of room air filters: Mechanical filters (fan-driven HEPA filters, for example). These force air through a special mesh that traps particles including allergens like pollen, pet dander and dust mites. They also capture irritant particles like tobacco smoke. The fans in these types of devices produce ozone byproduct and are usually within the acceptable level. Make sure to ask for proof from the manufacturer that their product is within the acceptable level of ozone byproduct. Electronic filters (ion-type cleaners, for example). These use electrical charges to attract and deposit allergens and irritants. If the device contains collecting plates, the particles are captured within the system. The ion-chargers in these types of filters produce ozone byproduct, more than fans in mechanical filters but may still be within the acceptable level. Make sure to ask for proof from the manufacturer that their product is within the acceptable level of ozone byproduct. Hybrid filters. These contain the elements of both mechanical and electronic filters. Gas phase filters. These remove odors and non-particulate pollution like cooking gas, gasses given off by paint or building materials, and perfume. They cannot remove allergenic particles. Ozone generators [not recommended - these types of "filters" are not reliable since their ozone levels usually exceed acceptable levels]. Although ozone technically clears the air of some particles, most groups do not recommend these. (Note: these are not ion-type filters; see "Electronic Filters" above.) These devices all exceed the acceptable level for ozone. If you have concerns about any air filter you own or are planning to buy, remember to talk to your doctor first, to find out if air filtration -- and what type -- is best for you. What is a 'HEPA' filter? A 'HEPA' filter is a kind of mechanical filter that means it's a "high-efficiency particulate air" filter. HEPA was invented during World War II to prevent the escape of radioactive particles

from laboratories. To qualify as a true HEPA filter, it must be able to capture at least 99.97% percent of all particles 0.3 microns in diameter, or larger, that enter it. What Else Should I Consider Before Buying an Air Filtration System?

If your home is heated or air conditioned through ducts, it may be possible to build filters into your air handling system. This has the advantage of the great force with which air will pass through the filter. And it eliminates a space-consuming appliance and an additional sound in your home. On the other hand, the filters may be more expensive and more difficult to handle; and they may need to be changed more often. Consult your doctor and your heating service on this alternative to a portable system. Questions to Ask Before Purchasing an Air Filter

- What substances will the cleaner remove from the air in my home? What substances will it not?
- What is the efficiency rating of the cleaner in relation to the "true HEPA" standard?
- Will the unit clean the air in a room the size of my bedroom?
- How easy/difficult is it to change the filter? (Ask for demonstration.) How often does it have to be changed? How much do filters cost? Are they readily available throughout the year?
- How much noise does the unit make? Is it quiet enough to run while I sleep? (Turn it on and try it, even though you will probably be in a noisy place.)