

## Indoor Air Quality and Allergies

Allergy and asthma control begins at home. Many people with allergies stay indoors when outdoor air is full of pollen and spores. But dust mites, animal dander and even cockroaches can cause problems indoors.

Eight out of 10 people in the United States are exposed to house dust mites, and six out of 10 are exposed to cat or dog dander. Cockroaches cause allergic reactions among people who live in the inner cities or southern parts of the United States. Controlling the air quality in your home, office and car can reduce allergy and asthma symptoms. What Size Are Allergens? Allergens are substances that cause allergic reactions and trigger asthma symptoms in some people. Allergen particles are carried in the air, but they will settle onto furniture and floor surfaces. They vary in size and are measured in microns (also called micrometers). The larger the particles, the faster they will settle out of the air. Pollen, dust mite and cockroach debris are larger and settle out of the air more quickly than molds or animal allergens. Is Indoor Allergy Control Possible? With aggressive cleaning, you can improve indoor air quality and reduce allergy symptoms. First you need to remove the source of as many allergens that you are sensitive to as possible. This includes pets, carpets, overstuffed furniture, stuffed toys, non-encased mattresses and pillows and bedding not washable in hot water. There may be more allergens on surfaces than in the air. Surface allergens can be put into the air easily by disturbing them by sitting or dusting, for example. Will Air Cleaning Devices Help? The best way to improve symptoms is to eliminate the source of the allergen from the home whether that is the pet or a heavily mite-infested upholstered chair. The next best step is to take measures to decrease the exposure to the allergen. Other important measures are to increase the circulation of outdoor air into the home and to reduce the humidity as much as possible. Reducing humidity decreases dust mite and mold growth. Air conditioners help reduce the humidity as well as prevent the exposure of outdoor allergens. You can reduce the number of outdoor allergens such as pollen and mold from entering the home by keeping windows and doors closed and the air conditioner set on recirculate. Current research suggests that the role for freestanding indoor air cleaners is limited. Elimination of the source of the allergen is the most effective way to reduce symptoms. Many more allergens are in carpets and furnishings than in the air. If you decide to use an air cleaner, a HEPA (high efficiency particulate air) filter is recommended. It removes at least 99 percent of the dust, dander, pollens, tobacco smoke and bacteria particles that are 0.3 microns or larger. Electronic air cleaners contain negative ion generators that charge the airborne particles. The particles are then attracted to charged metal plates or household surfaces. This type of air cleaner is less effective even at the beginning and can rapidly lose its efficiency unless regularly maintained. Hybrid filters are air cleaners that are a combination of the other types of air cleaners. Some air cleaners called ozone generators create ozone through an electrical charge. Ozone can be dangerous for persons with lung disease such as asthma and therefore ozone generators are not recommended. What Can I Do to Reduce Indoor Allergens?

- Control dust mites. Keep surfaces in the home clean and uncluttered. Bare floors and walls are best, particularly in the bedroom where you spend one-third of your time. If you must have carpet, throw rugs that can be washed or low-pile carpets are better.

The single most important method is to put zippered allergen impermeable or plastic covers on all pillows, mattresses and box springs. Encasing mattresses works better than air cleaners to reduce allergy symptoms. Every week, wash bedding, uncovered pillows and stuffed toys in hot water (130 degree F.) to kill mites.

- Vacuum once or twice weekly. Keep in mind, though, that vacuuming will not get to dust mites deep in carpets and mattresses. Vacuuming also puts dust in the air. Use a vacuum with a HEPA filter or special double filter bags if possible. If you have allergies, wear a dust mask while doing housework. Use a damp or treated cloth for dusting. Leave the house for several hours after cleaning it.

- Prevent animal dander. Most doctors suggest that people allergic to animal dander not keep household pets with feathers or fur.

To test the affect of pets on your allergies, go on a long vacation away from areas where pets have been. This is preferable since pet dander can stay around a home for months even after the pet is gone. If that is not possible, remove the pets from your home for at least two months and thoroughly clean all surfaces including walls and woodwork. Monitor your symptoms. If you still want pets, bring a pet into the house, measure the change in your symptoms, then decide if keeping the pet is worthwhile.

If you decide to keep a pet, bar it from the bedroom and keep the door closed. Cover vents with dense material like cheesecloth. Because animal allergens are sticky, you need to remove the animal's favorite furniture and replace wall-to-wall carpet with bare floors or at least a low pile carpet. A better option is to choose a pet without fur or feathers. Some people, though, also have been known to be allergic to lizards such as the iguana.

- Prevent entry of pollen by keeping windows and doors closed. Air conditioning in warm weather is best and also helps control dust mites by reducing humidity. Change filters often in window units.

- Avoid mold spores. Reduce moisture around the bathroom, kitchen and other water areas of the home. Dehumidifiers will help reduce both mold and dust mites. Limit yourself to a few house plants. Fix all leaks and other causes of damp areas. Clean moldy surfaces. Rid the yard of moldy firewood and piles of leaves and weeds.

- Control cockroaches. Do not leave food or garbage uncovered. Use poison baits, boric acid and traps rather than chemical agents that can irritate rhinitis and asthma. What Tips Should I Remember?

- If you have allergies, use aggressive cleaning to get rid of the allergen sources.

- In particular, rid the bedroom of as many allergen sources as possible.