

Tips for Reducing Asthma Triggers in Indoor Environments

The goal of parents who have children with asthma and allergies is to reduce the frequency and severity of asthma and allergy attacks for these children in order to not interfere with their normal activities.

Control begins with learning which trigger factors affect your child. Since no two children are alike, it is important that an individualized evaluation be made of your child to determine his or her trigger factors. Allergic reactions to certain allergens are common triggers for asthma. Some common allergens in the indoor environment are: pollen, mold, animal dander, feathers, dust, food, and cockroaches. If your child can avoid being exposed to trigger factors, he or she may still have asthma, but the severity will likely be lessened. There are three basic strategies for controlling allergens in the indoor environment. These methods are listed below in order of effectiveness.

1. Source Control

Source control is the most effective strategy for controlling allergens. Find out what causes the allergen or pollutant, where it is located, what it consists of, and reduce or eliminate the source.

- Tobacco Smoke or Wood Smoke – Do not allow smoking inside your home. Declare your home a smoke-free zone. Wood-burning fireplaces may be a trigger for some children. If so, you may not be able to utilize the fireplace.
- Excessive Moisture – Use an exhaust fan over the range to remove moisture,

sulfur oxides, nitrogen oxides, and cooking odors.

- Dust Mites – Clean regularly. Wash bedding materials weekly or more often if needed. Vacuum and wet mop hard-surface flooring often to reduce dust mites and pollen. If dust mites are an allergen for your child, carpet, stuffed animals, open shelves, and other dust-collecting items may have to be removed from the child's sleeping area.
- Dust – Clean blinds, ceiling fans, and filters on a regular basis.
- Sanitize to kill bacteria.
- Pollen – Keep washable rugs at all entrances. Wash them weekly. Keep windows closed during high pollen seasons.
- Excessive Moisture and Mold – Control moisture to control mold growth. Keep humidity levels low (40–50 percent relative humidity). Repair all leaks and drips.
- Pets – If you have pets, wash and brush them weekly to remove pollen, animal dander, hair, dust, etc. Keep pets away from where children sleep. It may be necessary to keep pets outdoors if the child's asthma is triggered by them.
- Strong Odors or Fumes – Cleaning products and pesticides can add pollutants to the indoor air. Keep your home well ventilated when using these

products. Consider using less toxic products.

- Keep foods “in the kitchen” for easier cleaning. Clean up spills and crumbs daily to control pests.
- Take the garbage out frequently, and store it in a tightly covered container to help control pests.

2. Ventilation

Good ventilation can help reduce some allergens in the indoor air.

Buildings need to have a sufficient amount of outdoor air to dilute and remove pollutants and moisture that are produced indoors and to supply combustion devices (and occupants) with oxygen. However, outside air may have pollutants in it, such as pollen. One also must consider the cost of heating or cooling the outside air when bringing it into the building.

Leave doors between rooms open most of the time for better air circulation. Open windows when possible to allow for a good supply of outdoor air. Install exhaust fans in bathrooms to remove moisture and chemicals from the building. Fit your gas range with a hood fan that exhausts the air outside. Use the fan, or open a window when cooking to remove gas fumes.

3. Air-Cleaning Devices

According to Dr. Joseph Ponessa at Rutgers Cooperative Extension in New Jersey, there is little research evidence that directly links the use of air cleaners to improved health. However, if the indoor air is still a problem after doing everything you can to control the source and ventilate, you may choose to try an air cleaner. The American Lung Association gives these points to consider if you plan to buy an air-cleaning device.

- Efficiency – Look for mechanical filters, such as HEPA filters, and electronic air cleaners that can effectively trap particles.
- Clean Air Delivery Rate (CADR) – The overall effectiveness of an air-cleaning device depends on the amount of air drawn through it, in addition to its efficiency. The label on the box will give the room size for which that the filter is designed.
- Air Discharge Patterns – The flow of air produced by the air-cleaning device affects the general effectiveness of the device.
- Ozone Production – The American Lung Association suggests that ozone generators not be used.
- Price – Consider the cost of replacement filters and maintenance, in addition to the initial purchase price.

This fact sheet developed by Janie Harris, Texas AgriLife Extension Service Specialist, Housing and Environment, December 2007.