



# Asthma: Avoiding Environmental Triggers

Asthma is often triggered by exposure to substances, such as allergens or air pollutants, which children breathe in. Allergens cause allergic reactions, while pollutants irritate the lungs directly. Both indoors and out, it makes sense for children with asthma to avoid these substances when possible. Here are some pointers.

## Indoor Exposures

Controlling indoor exposures to allergens and pollutants is especially important, since children spend the majority of their lives indoors. Luckily, we can control many exposures indoors. Indoor *pollutants* include second-hand smoke and exhaust from gas stoves or fireplaces. Indoor *allergens* include dust mites, animals with fur, mold, rodents, and cockroaches.

### Indoor irritants and pollutants

- Smokers should smoke outdoors and even change their clothes when returning indoors.
- Open the window or use the exhaust fan when cooking with a stove.
- Avoid using perfumes or scented candles.
- A "HEPA" air purifier may help. They cost from \$40 to \$140, and they reduce particulate concentrations in the air. These particulates include cigarette smoke, cooking exhaust from the stove, dust from sweeping, and even outdoor pollens which find their way into the house.

### Dust Mites

Dust mite allergens, common triggers of allergy and asthma symptoms, are found throughout the house, but thrive in bedding and soft furnishings. Because so much time is spent in the bedroom, it is most important to reduce dust mite levels there.

- Encase mattresses, box springs and pillows in special allergen-proof fabric covers or airtight, zippered plastic covers.
- Bedding should be washed weekly in hot water (130° F) and dried in a hot dryer.
- Cover comforters and pillows that can't be regularly washed with allergen-proof covers.
- Keep humidity low by using a dehumidifier or air conditioner.
- Remove all stuffed animals, especially from your child's bedroom.
- Wall-to-wall carpeting should be removed as much as possible. Instead, you may use throw rugs if they can be regularly washed or dry cleaned.
- Vacuum regularly. Invest in a HEPA (high-efficiency particulate) vacuum cleaner to improve both dust and pollen removal. Hoover HEPA and Eureka BOSS are both excellent and affordable HEPA vacuum cleaners (\$100-140). Or use a double-layered vacuum bag if a HEPA vacuum is not available.
- When you are sweeping your house, have your child be somewhere else, and open the windows. Mop hard-surface floors. Use a damp cloth – with warm, soapy water – to dust baseboards, windowsills, blinds and shades.

### Indoor Molds

Mildew and indoor molds need moisture to grow – such as dampness often found in basements, bathrooms or anywhere with leaks.

- Use an air conditioner, and avoid humidifiers, to reduce mold in the house.
- Clean up mold growth on hard surfaces with water, detergent and, if necessary, 5% bleach (do not mix with other cleaners). Then dry the area completely. If mold covers an area more than 10 square feet, consider hiring an indoor environmental professional.
- For clothing, wash with soap and water. If moldy items cannot be cleaned and dried, throw them away.
- Promptly repair and seal leaking roofs or pipes.



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- Using dehumidifiers in damp basements may be helpful, but empty the water and clean units regularly to prevent mildew from forming.
- All rooms, especially basements, bathrooms and kitchens, require ventilation and cleaning to deter mold and mildew growth.
- Avoid carpeting on concrete or damp floors, and avoid storing items in damp areas.

### Pet Allergens

People are not allergic to an animal's hair, but to an allergen found in the saliva, dander (dead skin flakes) or urine of an animal with fur.

- There are no "hypoallergenic" breeds of cats or dogs. The same is true for any animal with fur, so if you are highly allergic, it's best to avoid having a pet in the home and avoid contact.
- Keep pets outside to reduce animal dander. But keeping an animal outdoors is only a partial solution, since homes with pets in the yard still have higher concentrations of animal allergens.
- If you can't avoid exposure completely, try to minimize contact with pets, and keep the pet out of the bedroom and other rooms where you spend a great deal of time. While dander and saliva are the source of cat and dog allergens, urine is the source of allergens from rabbits, hamsters, mice and guinea pigs; so ask a non-allergic family member to clean the animal's cage.
- Vacuum carpets frequently, or replace carpeting with a hardwood floor, tile or linoleum. Some studies have found that using a HEPA air cleaner may reduce exposure to animal allergens.

### Cockroaches

An allergen in cockroach droppings is a common trigger of asthma symptoms, especially for children living in densely populated, urban neighborhoods

- Seal all areas where roaches might enter the home, including crevices, wall cracks and windows.
- Cockroaches need water to survive, so fix and seal all leaky faucets and pipes.
- Keep food in lidded containers and put pet food dishes away after your pets are done eating.
- Vacuum and sweep the floor after meals, and take out garbage and recyclables.
- Use lidded garbage containers in the kitchen, and dispose of trash promptly.
- Wash dishes immediately after use and clean under stoves, refrigerators or toasters where crumbs can accumulate.
- Wipe off the stove and other kitchen surfaces and cupboards regularly.
- Consider having an exterminator go through the house when your family and pets are gone to eliminate any remaining roaches.

### Outdoor Exposures

Outdoor exposures are mostly *environmental allergens*. These include grasses, trees, and weed pollens, which vary in concentration by season. (Spring: tree pollen; Summer: grass pollen; Fall: weed pollen) For patients with asthma linked to a particular season, we recommend the following:

- [www.Pollen.com](http://www.Pollen.com) is an excellent website to track pollen concentrations.
- When pollen counts are high, stay indoors as much as possible while keeping windows and doors closed.
- If possible, use air conditioning – it cleans, cools and dries the air.
- Use a HEPA air filter.
- Keep your shoes at the door, to avoid tracking pollen into the house.
- Take a shower before bed, to avoid getting pollens into your bed.
- Avoid exposure when mowing lawns or raking leaves, since this stirs up pollens and molds.
- Avoid hanging sheets or clothes outside to dry.

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