



## Asthma – Avoiding Environmental Triggers

**A**sthma is frequently triggered by exposure to substances that children breathe in, including both allergens and pollutants. Allergens are substances which cause an allergic reaction, and pollutants are substances which irritate the lungs directly. It makes sense to try to avoid these substances, both indoors and outdoors.

### Indoor Exposures

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

#### • Controlling indoor irritants and pollutants

- Smokers should smoke outdoors and change their clothes when returning indoors.
- Open the window or use the exhaust fan when cooking with a stove.
- Avoid using scented candles or perfumes
- A “HEPA” air purifier may help. These air purifiers are not terribly expensive (\$40-140), and they reduce particulate concentrations in the air. These particulates include cooking exhaust from the stove, cigarette smoke, re-suspended dust from sweeping, and even outdoor pollens which find their way into the house.

#### • Controlling Dust Mites

Dust mite allergens – the most common trigger 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 essential 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 conditioning.
- Remove all stuffed animals, especially from your child's bedroom.
- Wall-to-wall carpeting should be removed as much as possible. Instead, throw rugs may be used if they are 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 unavailable.
- When the home is being swept, have the child be somewhere else, and open the windows. Mop hard-surface floors, and dust baseboards, windowsills, blinds and shades with a damp cloth with warm, soapy water.

#### • Controlling Indoor Molds

Indoor molds and mildew need dampness to grow, such as found in basements, bathrooms or anywhere with leaks.

- Use the 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, washing with soap and water is best. If moldy items cannot be cleaned and dried, throw them away.
- Promptly repair and seal leaking roofs or pipes.

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

• **Controlling 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.

- o There are no "hypoallergenic" breeds of cats or dogs. The same is true for any animal with fur, so it's best to avoid having a pet in the home and avoid contact, if you're highly allergic.
- o 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.
- o If you cannot avoid exposure, try to minimize contact 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; ask a non-allergic family member to clean the animal's cage.
- o As with dust mites, vacuum carpets often or replace carpet with a hardwood floor, tile or linoleum. Some studies have found that using a HEPA air cleaner may reduce animal allergen exposure.

• **Controlling Cockroaches**

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

- o Seal all areas where roaches could enter the home, including crevices, wall cracks and windows.
- o Cockroaches need water to survive, so fix and seal all leaky faucets and pipes.
- o Keep food in lidded containers and put pet food dishes away after your pets are done eating.
- o Vacuum and sweep the floor after meals, and take out garbage and recyclables.
- o Use lidded garbage containers in the kitchen, and dispose of trash promptly.
- o Wash dishes immediately after use and clean under stoves, refrigerators or toasters where crumbs can accumulate.
- o Wipe off the stove and other kitchen surfaces and cupboards regularly.
- o 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 mainly environmental allergens. These include trees, grass, 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 pollen season, we recommend the following:

- Pollen.com and 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, which 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 off clothes and 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