



PATIENT EDUCATION HANDOUTS

Environmental Control and Asthma

Children with asthma have unusually sensitive airways. Asthma symptoms can be triggered by many things in the environment. These triggers are unique to each child. Some common environmental triggers of asthma symptoms are cigarette smoke, pollens, house dust, molds, animal dander, perfume, strong odors, and cold air. Climate and weather changes can also affect asthma.

Try to limit your child's contact with these triggers, especially in places where your child spends a lot of time, such as at home and school.

Smoking

Pipe, cigarette, and cigar smoke are harmful to children and adults in general, but the smoke poses a special problem for all children with asthma. Even the smell of smoke on clothes can trigger asthma symptoms in a child with sensitive airways. No one should smoke in the home where an asthmatic child lives- even when the child is not present. Do not allow smoking in any cars that children ride in.

Pollens

Pollens are small airborne particles from plants such as trees, grasses, weeds. The amount of pollen in the air outdoors will vary with the season and the time of day. Pollen and mold concentrations tend to be less in the early morning, and more in the midday and afternoon.

Pollens from grasses, weeds, and some trees are light and can be carried in the air for miles. These pollens land in the eyes, nose, and airways, causing the symptoms of asthma. Flower pollens are heavier and are carried from plant to plant by insects rather than the wind. As a result, they rarely cause allergies. Although it is difficult to avoid pollens totally, some suggestions are:

- Keep your child's bedroom windows shut and use central air conditioning during spring, summer, and fall pollen seasons. If a room air conditioner is used, recirculate the indoor air rather than pulling outside air indoors. Air purifiers can be helpful if filters are kept clean. HEPA (high efficiency particulate air) filters are best. Wash or change air filters once a month.
- After working or playing outside during allergy season, your child should shower and change clothes immediately. Dirty clothes should be kept outside the bedroom.
- Mow the lawn often. This limits the amount of pollen released. Your child should not be in the immediate area when the lawn is being mowed.

Molds

Molds are found year-round throughout the house, outdoors, and in certain foods. They are especially found in areas with a lot of moisture. Molds make lightweight spores that can travel a long way in the air both outdoors and in the house.

Bathrooms and damp basements are two common areas for mold growth. Other common places include swamp coolers, humidifiers, and the refrigerator drip pan and crisper. Here are some suggestions to decrease mold growth:

- Light and ventilation prevent mold growth. In the bathroom, thoroughly clean under plumbing fixtures, and the tile, floors, shower curtain, and tub surround regularly. Use a diluted household bleach (1 cup of bleach to 10 cups of water).
- Enamel paint stops mold growth better than latex paint. An antifungal substance can be added to paints to keep mold from growing.
- Keep the humidity in the house to less than 50%. Buy a dehumidifier to take moisture out of the air if you live in a humid climate. Dehumidifiers can help keep mold from growing in damp areas such as basements. Areas that get damp after hard rains are places where mold can grow and should be fixed.
- Evaporative coolers, vaporizers, and humidifiers with a reservoir are places where mold and bacteria grow. When these appliances are in use, molds and bacteria can be sprayed throughout the house. In general, these appliances are not recommended. If you do use one, then empty the reservoir daily, clean and dry it thoroughly. Refill the reservoir just before use.
- Greenhouses, compost piles, and houseplants also frequently have molds. Cover the potting soil of houseplants with foil to decrease spreading of mold spores.
- Foam pillows and mattresses can be sites for mold growth. Replace foam pillows with washable polyester ones. Cover pillows and mattresses with allergen-proof covers.

House Dust

House dust is made of many things, including dirt, insect debris, dust mites, dead skin, food crumbs, bacteria, and fungi. Dust collects on every item in the home, including mattresses, couches, clothes, rugs, drapes, and stuffed animals.

It is very difficult to avoid house dust, but the following ideas will help:

- Avoid clutter and dust catchers, especially in the bedroom. These include wall decorations (pictures, pennants, and fabric wall coverings), drapes, and blinds.
- Give your child washable, "nonallergenic" stuffed toys when possible. For children who want to sleep with soft toys, keep only one or two soft toys in the bed, and wash them every week in hot water (at least 130° F). Store toys, dolls, and play equipment outside the bedroom or in the closet.
- Keep the bedroom closet door closed. Vacuum the closet floor often. Store only in-season clothes in the closet.
- Bare floors are best. Replace carpets with linoleum or wood flooring, especially in bedrooms. If you have carpet, vacuum frequently and thoroughly. Change vacuum cleaner filters often. Vacuum and dust early in the day to let dust settle before nap or bedtime. It is best to vacuum when your child is not home or to keep your child in another area of your home for 30 to 60 minutes after you vacuum. Be sure to clean under the furniture and in the closet.
- Mattresses, box springs, and pillows should be in allergen-proof coverings. Use only polyester pillows and wash them several times a year. Bed linens and covers should be washable cotton or synthetic fibers. Avoid using feather, wool, kapok, or foam products.
- Forced-air furnaces and air conditioners should have a dust-filtering system. Filters should be changed every 2 to 4 weeks. Filters can be cut to cover room vents if the central furnace filters are not changed every 2 weeks. Have cold and warm air ducts professionally cleaned at least every 4 to 5 years.

Animals

A substance in animal saliva, dander, and urine causes allergic reactions in many people. Children may be more sensitive to one type of animal (such as cats) than another. All furred animals have the potential to

cause allergic reactions. Cold-blooded reptiles, such as snakes, turtles, lizards, and fish, do not cause problems.

Removing a family pet is very difficult, but if your child is very sensitive to animal allergens, it may be necessary. Once the pet is removed from the house, animal residue may still be in the house for months. Thorough cleaning is essential. It is very important to clean stuffed furniture, wall surfaces, rugs, drapes, and the heating/cooling system.

If your child is sensitive to animals and has a pet, the pet should live outside and NEVER be in the child's bedroom. Keep pets out of family areas and rooms where people with asthma sleep at all times.

- Wash pets once or twice per week.
- Wash hands immediately after any contact with a pet.
- Have non-allergic family members brush or comb pets outdoors, or clean out animal cages, or litter boxes.
- Change furnace filters monthly.

Cockroaches

Cockroaches are an important source of allergic sensitization, and worsen asthma symptoms. To control cockroaches:

- Caulk and seal cracks in plaster work and flooring.
- Keep all food in sealed containers.
- Keep floors and kitchen cupboards clean.
- Store trash with food or food wrappers in containers with a tight fitting lid. If possible, remove trash from the home every day before bedtime.
- Use cockroach traps.

Air pollution

Different types of air pollutants can aggravate asthma, such as ozone, dust, smoke, paint fumes, and strong perfumes or odors. Weather conditions such as cold temperature and low humidity can make asthma worse, especially on high pollution days.

- Check news services for the daily pollution index (and pollen count).
- Avoid unnecessary physical activity outdoors.
- Try to stay indoors in a clean air environment.
- Ask your healthcare provider if your child should use a rescue inhaler before going outdoors on high pollution days.

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This content is reviewed periodically and is subject to change as new health information becomes available. The information is intended to inform and educate and is not a replacement for medical evaluation, advice, diagnosis or treatment by a healthcare professional.

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