

Asthma, your child, and the environment—and how you can make for easier breathing

Asthma is a serious respiratory disease that is more and more common around the world. About 20 million people in the United States have asthma—twice as many as had the disease in 1980. Among children, asthma is the number one chronic health condition and the leading cause of hospitalization. According to a California study, among children who are hospitalized for asthma, the chance of becoming seriously ill or dying has doubled over the past 20 years.

We do not know why more people are getting asthma, nor do we know how to prevent it, but we are learning much more about how exposure to certain things in the environment can cause the disease or make it worse. This guide discusses those exposures and describes what you can do to help reduce your child's risk of asthma or, if you've just found out that your child suffers from asthma, to help prevent attacks.

What is asthma?

Asthma is both an inflammation (swelling) and constriction (tightening) of the small airways of the lungs. Its symptoms include coughing, wheezing, and shortness of breath.

Genetics and asthma

Many children with asthma also have allergies. Allergies often run in families. Nearly one of every three children whose mother has asthma also has the disease—compared to one of every 10 children of mothers who do not have asthma. If you know that there is asthma in your family, be sure to tell your pediatrician and other health-care professionals who work with you and your child.

Breastfeeding and asthma

Breastfed infants are less likely to develop asthma and allergies than babies who have been fed infant formula. Scientists believe that substances in breast milk can help the infant's immune system develop in a way that decreases the risk of getting allergies. Breastfeeding is a good way to help prevent asthma.

Viral infections and asthma

Viral respiratory (lungs, windpipe, nose) infections, such as the common cold, can be far more severe in children with asthma. Some viruses may even cause asthma in infants who did not have the disease previously. Viral infections can trigger wheezing in children with asthma. To help prevent infections, make sure that everyone in the family washes his or her hands often and gets a flu shot.

Asthma and the indoor environment

Secondhand cigarette smoke may cause asthma or make it worse in children who are exposed to smoke either before or after they are born. Also, a study of California school children found that those who lived in a home with a humidifier had a 70% higher risk of developing asthma.

Children with asthma may wheeze when exposed to cockroaches, animal dander, dust mites, pollen, and common molds. Reducing the level of dust mites or other allergens in the home can decrease the severity of respiratory symptoms in some asthmatics. Here's how you can help prevent attacks:

- Do not smoke in the house or the car, or allow others to do so.
- If you smoke, quit—and get help quitting if you can't do it alone.

- Do not keep furry pets if they seem to make your child's asthma worse.
- Do not use a humidifier unless recommended by a physician.
- Use a vacuum cleaner with a high-efficiency particulate air (HEPA) filter to reduce pollen, mold, and dust mites. Use mattress and pillow covers to reduce exposure to dust mites, and wash bedding in hot water to kill mites.
- Make sure there is no water damage or mold growth in your house or basement.
- Control cockroaches by sealing cracks, not leaving food out on kitchen counters or other surfaces, and using baits (such as Roach Motel) if necessary. (Avoid spraying your home with pesticides, which can cause or aggravate asthma!)

Asthma and the outdoor environment

Asthma is more common in urban areas, particularly among children living along a busy road or a trucking route. Ozone (a major pollutant in smog) and heavy exposure to traffic may cause asthma in previously healthy children and may trigger asthma attacks in children who already have asthma. California school children who play several outdoor sports and live in areas where there is an ozone smog problem, for example, have been found to be three times as likely to develop asthma as children in those communities who don't play sports. Outdoor sports are not associated with asthma in less smoggy areas.

Many substances in outdoor air besides ozone and diesel exhaust can trigger an asthma attack: pollen, mold, smoke, soot, and vehicle exhaust from nondiesel engines, to name a few. Air pollutants such as nitrogen oxides and sulfur dioxide can irritate the respiratory system, causing airway constriction, chest tightness, and asthma symptoms. To help prevent asthma attacks:

- Keep your child inside on days when air pollution warnings are in effect.
- Check pollen and mold spore levels throughout the allergy season, and keep your child inside on high-pollen or mold days.
- Support efforts to reduce air pollution, such as improving mass transportation services.

Asthma and chemicals

Chemicals in the home or the workplace can cause asthma or make it worse. They include chemicals present in:

- Sprayable polyurethane foams or coatings, paints, shellacs, and varnishes
- Epoxy resins and photographic fluids
- Cement used in home hobbies, orthopedic surgery, and dentistry
- Latex, grain dusts, and wood dusts.

Although children are not usually exposed to these substances, they may come in contact with the chemicals in home hobby materials or dust that parents bring home from the workplace on their clothing.

Some researchers believe that volatile organic compounds (VOCs) may have a role in asthma. VOCs are irritating chemicals with a strong smell. They may be released from building materials, carpets, furniture, glues, paints, pesticides, cleaning products, and fragrances.

Several pesticides can cause allergic reactions or airway constriction. They include some that are widely used to control cockroaches.

Here's how you can reduce the risk of asthma from chemical exposures:

- Use household chemicals and pesticides cautiously; if you must use them, keep children away from them, and use them in a well-ventilated area
- Do not use non-water-based glues, paints, and varnishes at home
- If you come in contact with chemicals at work, change your clothes and shoes before entering the house to make sure that no residues come home with you

For more information

For additional advice on preventing asthma and asthma attacks, speak with the pediatrician. You'll also find information at the following Web sites:

www.lungusa.org/asthma

The American Lung Association's asthma home page

www.epa.gov/airnow

The Environmental Protection Agency's AirNow Web site, containing local outdoor air quality information and ozone maps

www.aaaai.org/nab/index.cfm?p=pollen

The American Academy of Allergy, Asthma, and Immunology Web site, containing information about local pollen and mold spore counts