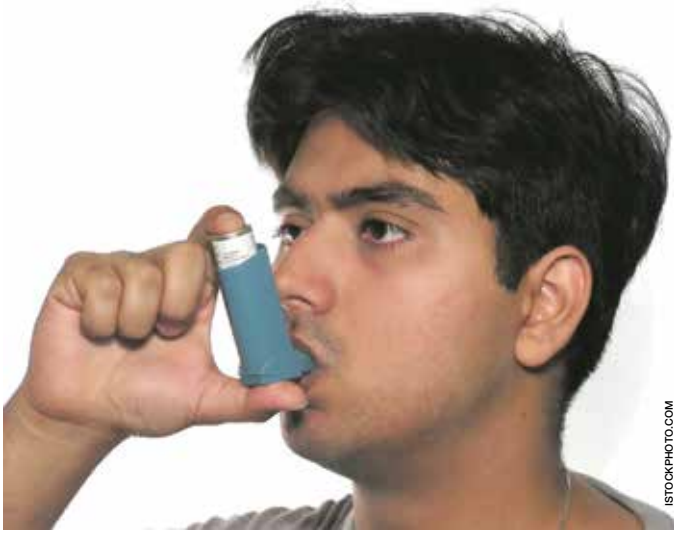
PA IPM FACT SHEET SERIES

Asthma, Pests, and Pesticides



Asthma

Asthma is a long-term condition that causes inflammation of the lungs' airways. Symptoms of asthma include wheezing, coughing, feeling of tightness in the chest, difficulty breathing, and itchy neck, throat, and ears. While the causes of asthma are not fully understood, a combination of genetic susceptibility and environmental factors are involved. Although we cannot control our genetic makeup, we can help prevent asthma attacks by paying attention to the environmental conditions that irritate lungs and set off an attack.

Why Be Concerned?

Approximately 20 million Americans have been diagnosed with asthma, and it is the most common chronic childhood disease—afflicting more than six million children nationally and more than 100,000 children in southeastern Pennsylvania. In Philadelphia, the asthma rates among school-aged children are more than twice the rates for Pennsylvania and the nation as a whole. African American and Hispanic/Latino children have asthma rates two to three times that of white or Asian children. Asthma is the leading cause of school absences. Parents, in turn, must miss work to stay home with their sick children. In Philadelphia, 16,000 children visit emergency rooms each year due to asthma. A bad asthma attack can be fatal.

Asthma Triggers

Asthma attacks are usually started by exposure to certain substances called triggers. Triggers are either allergens or lung irritants. Airborne allergens are substances such as pollen, animal dander, cigarette smoke, aerosols, or mold that cause an allergic reaction. Chemical lung irritants include pesticides, perfumes, air fresheners, and household and industrial cleaning products. Repeated exposure to allergens or irritants, such as cockroach and/or mouse allergens, can "sensitize" people, making them more likely to experience allergic reactions. Awareness of asthma triggers can help you take steps to reduce them, thereby preventing asthma symptoms or attacks.

Pests Trigger Asthma

Pests are unwanted creatures that invade our homes. Once they have gotten inside, some of these pests—notably, mice, rats, and cockroaches—can contribute to an asthma attack. In fact, research is under way to determine whether or not these pests can actually cause asthma to develop. The single major factor contributing to asthma in urban-dwelling children in the northeastern United States has been found to be exposure to cockroach allergens. Cockroaches shed skins, leave behind feces, and when they are dead, their bodies turn into dust—all things that can trigger an asthma attack. To make matters worse, when pesticide sprays or "bug bombs" are used to combat roaches, they can also irritate lungs and potentially cause an attack. Rodents, such as rats and mice, can trigger asthma as well. These rodents shed hair and produce waste products that can trigger attacks if someone with asthma breathes them in.

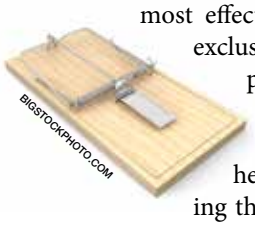
Pesticides, Asthma, and Human Health

Pesticides are substances designed to kill, control, or repel pests, including insects, rodents, weeds, and molds. The U.S. Environmental Protection Agency (EPA) lists pesticides as one of four environmental pollutants that may influence the induction and exacerbation of asthma symptoms. Pesticides do this by irritating the lungs as they are breathed in. Additionally, in laboratory tests with animals, commonly used pesticides have been linked to cancer, birth defects, reproductive disorders, and neurological, kidney, and liver damage. To be safe, it is important to limit children's exposures to toxins of all kinds, including pesticides.

The Pennsylvania IPM Program is a collaboration between The Pennsylvania State University and the Pennsylvania Department of Agriculture.

What Can You Do to Safely Control Pests?

Integrated pest management (IPM) uses information about the pest in order to choose methods of control that are safest and most effective. IPM methods include pest prevention, exclusion, and nonchemical tools first. If chemical pesticides are needed, products are chosen that pose the least risk to human health. With IPM, you start by asking, "Why is this pest here?" and try to remove the conditions allowing the pest to enter and live. This approach solves pest problems rather than just treating the symptoms. It also reduces the need to use pesticides repeatedly.



Pest Prevention

These methods are at the heart of an IPM program:

- ***Keeping watch:*** Certain areas of the house are more susceptible to pests, such as the kitchen, basement, or bathroom. Small sticky traps or glue boards can be used in these areas as an "early warning" system. The goal is to quickly find any pests and determine how they are getting in before they become a big problem.
- ***Preventing pest access:*** Caulk the cracks and crevices that pests may use to move or hide in. For larger holes, use stainless steel or copper mesh to plug the holes, and then use a silicone caulk to seal it. Pay special attention to areas where pipes and wires come in through the wall. Make sure to use window screens that are in good repair.
- ***Preventing shelter:*** Reduce clutter—get rid of the things you do not need, such as old clothes, newspapers, magazines, and cardboard boxes, where pests can easily hide.
- ***Preventing food sources:*** Store food in plastic or glass containers with tight-fitting lids to prevent pests from eating it. Use a trash can with a tight-fitting lid and empty it regularly. Try not to leave dirty dishes in the sink overnight, but if necessary put them in soapy water so that pests cannot eat the scraps. Eat only in designated areas, not all over the house. Clean thoroughly, paying particular attention to the floor under the refrigerator, stove/oven, and other places where food crumbs and spills may be collecting. Remove and store pet food in pest-proof containers at night.
- ***Preventing water sources:*** Fix any water leaks, wipe up spills, and remove pets' water dishes at night.

Physical Controls

Sticky traps for insects and snap traps for rodents are safe and good tools for catching the occasional invader. Be sure they are placed correctly for maximum benefit. Roaches and rodents run along the wall in concealed spaces, so make sure the traps are flush with the wall, out of the reach of children. Snap traps should snap toward the wall.

Chemical Controls—Less-Risky Pesticides

After using all the above methods, you may need to consider using a pesticide. Select products that limit human exposures. Rodent baits in pellets, aerosols, liquid sprays, mothballs, and "bug bombs" all pose more risk of chemical exposure by being ingested, touched, or inhaled. Instead, look for pesticides in tamper-resistant bait stations or a "gel" formula. Boric acid dust or diatomaceous earth can be used, if carefully puffed gently and in small amounts behind wall voids and socket covers to eliminate insects hiding behind these areas. Avoid spreading any kind of pesticidal dust in and around the open rooms of the home.

Safety First

Always read the entire label on any pesticide product before you buy and use them in your home. Ask yourself: Does this product control the pest I have? Can I use this product without exposing myself and/or my family to the pesticide? If pesticides are stored in the home, keep them in a locked cabinet at least 4 feet up and out of the reach of children. Never buy pesticides in unmarked containers or that do not have an EPA registration number on the container. These products are illegal and potentially very dangerous to your family.

Need More Help?

- PA IPM Program Problem Solver:
  extension.psu.edu/ipm/resources/pestproblemsolver
- New York State IPM Program:
  nysipm.cornell.edu/publications/roach/default.asp
  nysipm.cornell.edu/publications/evictmice/default.asp

If you suspect that a child has been accidentally exposed to chemicals, immediately call the Poison Control Center at 1-800-222-1222.

For More Information

Pennsylvania IPM Program at Penn State
Phone: 814-865-2839
Email: paipm@psu.edu
extension.psu.edu/ipm

Pennsylvania IPM Program in Philadelphia
Phone: 215-471-2200, ext. 109
Email: pscip@psu.edu
extension.psu.edu/ipm/resources/urbanphilly

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