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Reducing Your Child's Asthma using Integrated Pest Management: A Practical Home Guide for Parents

Casey's Parents Find Her Asthma Trigger

Nine-year-old Casey was an active child, especially gifted at swimming and gymnastics, who loved school.

Two weeks into fourth grade, Casey had a severe asthma attack, sending her to the hospital. Two days after returning to school, Casey again started wheezing and coughing. Her symptoms became so unbearable that she missed both swimming and gymnastics lessons.

Casey's parents kept her home from school and her asthma symptoms cleared up. Her mother met with the principal to express concerns that something in the school was triggering Casey's asthma. With professional assistance, they inspected Casey's classroom for mold, aerosols and chemicals – common asthma triggers – but none were found. Then Casey's mom noticed several dead cockroaches in the corner of the art supplies closet.

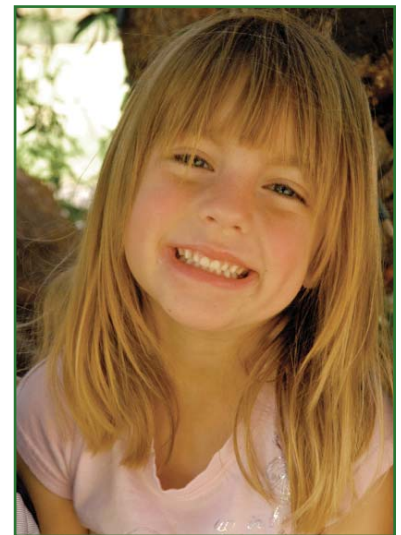
School staff immediately cleaned the rest of the closet, finding a horde of cockroaches, cockroach feces and cast-off skins. Art supplies, including pasta and flour, were put into sealed containers. The entire classroom was cleaned and monitoring traps were laid out. Follow-up inspections in the room found no additional cockroaches.

A week later, Casey was healthy and back in swimming and gymnastics. Casey's mom reported that she was breathing comfortably at school thanks to the removal of her asthma trigger. Kids like Casey deserve an

environment where they can be the best student, athlete, musician, artist and most importantly, the happiest, healthiest child they can be.

Starting at Home

Asthma triggers can be found anywhere. Look in and around your home. What do you see? Dust? Cockroaches? Allergenic trees and plants? Pesticides? Maybe a pet cat? Anyone of those could be playing a role in triggering your child's asthma.



Supporting Your Student

In a single school year, asthma accounts for more than 12.8 million missed school days, making it the leading cause of school absenteeism (Akimbami 2006). Students with persistent symptoms and asthma related absences achieve lower test scores and overall academic achievement (Moonie *et al.* 2008). By eliminating asthma triggers from your child's environment, you are giving them a better chance to succeed in school.



Asthma in Children

Asthma is a health condition that causes inflammation of the lungs and airways. The inflammation and contraction of respiratory muscles cause a variety of symptoms.

Symptoms to look for:

- ▶ Difficulty breathing
- ▶ Wheezing during exhaling
- ▶ Dry coughing
- ▶ Feeling of tightness in the chest
- ▶ Agitation
- ▶ Itching neck, throat and ears

Serious symptoms requiring immediate medical attention include:

- ▶ Inability to speak
- ▶ Exhaustion
- ▶ Rapid heart-beat
- ▶ Sweating
- ▶ Blue lips, fingers and feet



Image: chrisroll / FreeDigitalPhotos.net

Childhood Asthma is on the Rise...

- ▶ Asthma rates rose by 75% between 1980 and 1994, and by 160% for those under four years of age (Pew Environmental Health Commission 2000).
- ▶ An estimated 9.6 million children (13.1%) of the U.S. population under the age of 18 have asthma (Centers for Disease Control 2007).

Integrated Pest Management Combats Asthma

Integrated pest management (IPM) is common sense!

- ▶ Find pest problems early.
- ▶ Improve sanitation to reduce food, water, and clutter that attract pests.
- ▶ Pest-proof buildings to eliminate entry points and hiding places for pests.
- ▶ Use low-risk options when a pesticide is needed.

Asthma Triggers

Most asthma symptoms are caused by environmental triggers including allergens and irritants. The more a child is exposed to a trigger the greater the risk for an asthma attack (Pennsylvania IPM Program undated).

Allergens:

- ▶ Cockroaches
- ▶ Dust mites
- ▶ Pollen
- ▶ Rodents
- ▶ Mold
- ▶ Cats, dogs and other pets

Irritants:

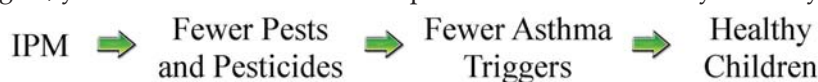
- ▶ Pesticides
- ▶ Cleaning products
- ▶ Aerosols
- ▶ Smoke

Why does IPM Alleviate Asthma Symptoms?

Some pests and certain pesticides can trigger asthma attacks in sensitive children. By using IPM to reduce common triggers, your child will live a healthier and happier life!

IPM is much more effective at managing pests compared with routine application of pesticides. Many pest problems can be completely avoided by excluding pests and correcting the conditions that attract and support pests. IPM reduces exposure to both pests and pesticides (Gouge *et al.* 2006) and has been shown to lower asthma six times more than conventional treatments (Nalyanya *et al.* 2009). The Centers for Disease Control and Prevention recommends IPM to address asthma (Centers for Disease Control 2010).

When using IPM fewer pest problems develop into infestations and fewer pesticide applications are necessary. By eliminating asthma triggers, your home can be a healthier place for the entire family even if you are not asthmatic.





How Can You Reduce Triggers in Your Home?

Follow these steps:

Cockroaches

- ▶ Regularly clean counters, sinks, dishes, cabinets and floors to eliminate pest access to food.
- ▶ Eliminate sources of water including dripping faucets and leaking pipes.
- ▶ Store trash in containers with lids and empty regularly.



Copyright © 2007 David Monniaux
German cockroach (1/2 inch)



Turkestan and Oriental
cockroaches (1-1.75 inches)

Dust Mites

- ▶ Vacuum weekly using a HEPA filter, vacuum furniture, rugs, and drapes as well as carpets.
- ▶ Wash bed sheets, blankets and stuffed toys weekly and fully dry before returning to the bed.
- ▶ Place mite-proof covers on mattresses and pillows.

Rodents

- ▶ Seal rodent entry ways under doors, around pipes and other openings.
- ▶ Keep all food in air tight containers and remove sources of water.
- ▶ Fix leaks to remove access to water.
- ▶ Set multiple snap traps in places where rodents are active. Keep them from children by placing them in locked rodent boxes. Check and reset traps daily until captures stop.



Image: George Shuklin, 2008

Pollen

- ▶ Avoid planting highly allergenic plants around the house including ash, birch, hickory, oak, juniper, pecan, privet, willow trees and ornamental Ficus trees.
- ▶ Mow the lawn before weeds flower to greatly reduce allergens.

Mold

- ▶ Clean any signs of mold with hot soapy water.
- ▶ Remove any sources of water and fix leaking pipes.
- ▶ Use exhaust fans and open windows to dry out air in damp kitchens and bathrooms.

Pets

- ▶ Vacuum floors and furniture regularly, using a HEPA filtered vacuum.
- ▶ Keep pets outside when appropriate.
- ▶ If inside, keep pets off of furniture and out of bedrooms.
- ▶ Clean fish tanks to avoid mold growth.
- ▶ Use low-dust media and bedding in reptile and small animal enclosures.
- ▶ Wash cats and dogs regularly.



Image: Carlos Porto / FreeDigitalPhotos.net

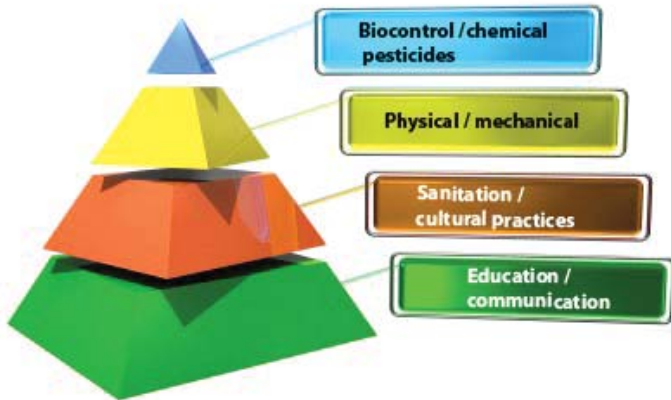
Indoor air quality (IAQ)

- ▶ Avoid using aerosols and chemical sprays, including pesticides.
- ▶ Use microfiber cleaning tools to prevent allergens from becoming airborne.
- ▶ Plan for ventilation when painting and using construction materials.
- ▶ Use exhaust fans and exterior vents to reduce nitrogen dioxide from appliances such as gas and kerosene stoves (Triggers in Your Home 2011).
- ▶ Avoid scented candles and plug-in.



Pesticides: A Trigger and a Cause

Traditional pest control methods can include regular application of pesticides, whether pests are present or not. Evidence suggests that pesticides, like pests, can both cause and trigger asthma (Salam *et al.* 2004, Field 2002). Therefore it is prudent to use only what is really needed.



What Pesticides are on Your Lawn?

Not all pesticides cause asthma or trigger attacks, but some over-the-counter products contain irritants known to trigger people with asthma. Of 30 commonly used lawn pesticides, 27 are irritants, meaning they have the potential to trigger asthma symptoms (Glaser 2005).

Tips and Tools

Shop smart. Live smart.

Read pesticide labels. If you decide to purchase a pesticide, read the label to help you choose the safest product that works for the specific pest you want to control.

Store pesticides in a safe place. If pesticides are stored in the home, store them in a locked cabinet at least 4 feet up and out of reach of children.

NEVER buy illegal pesticides. Only buy pesticides from a retail store that are in original, sealed containers. Other products are potentially very dangerous to your family.

What is the Air Quality Index?

Poor outdoor air quality can also trigger an asthma attack. To view the current air quality and pollen levels for your area, visit www.epa.gov/airnow or <http://www.pollen.com>.

IPM Action Steps for Parents

Safe pest management practices that can lessen your child's asthma symptoms

Three strikes and pests are out

Strike one: Keep out.

- ▶ Install door-sweeps and weather stripping on windows.
- ▶ Seal cracks, crevices and holes that may allow pest entry.
- ▶ Replace damaged window screens.

Strike two: Clear out.

- ▶ Get rid of things you don't need such as old clothes, newspapers and cardboard boxes.

- ▶ Do not leave dirty dishes or food out over night.
- ▶ Store pet foods in pest-proof containers at night.
- ▶ Use a trash can with trash-bag and lid, and empty trash regularly.
- ▶ Fix water leaks, wipe up spills and remove pet's water dishes at night.

Strike three: Watch out.

- ▶ Monitor the kitchen, basement and bathroom, all high-risk areas for pests.
- ▶ Use small sticky traps or glue boards to monitor for pests.



Resources

The American Lung Association offers tips for creating an asthma action plan, using an asthma checklist and advice on making treatment decisions. For more info, go to <http://www.lungusa.org/lung-disease/asthma/>

The United States Environmental Protection Agency provides web users with an interactive quiz, information on asthma awareness month and programs available to assist those with asthma. To learn more, visit <http://www.epa.gov/asthma/>

Additional Information About Green Cleaning can be found at <http://www.informedgreensolutions.org/> and <http://www.epa.gov/epp/pubs/cleaning.htm>

To Learn More about IPM Practices, visit <http://ipminstitute.org/faq.htm> and <http://www.epa.gov/opp00001/factsheets/ipm.htm>

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Authors

Prepared by Dawn Gouge, Thomas Green, Kelly Chambers, Janet Hurley, Tim Stock, Mark Shour, Carrie Foss, Lynn Braband, Fudd Graham, Kathy Murray, Sherry Glick, Zach Bruns and Matt Anderson. September 2011.

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