

# Pulling The Plug On Triggers: How To Send Asthma Allergens And Irritants Down The Drain

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## Abstract

It doesn't grab headlines. It is not associated with violence or moral decay. Yet it has a daily impact on our schools, costs our country billions of dollars each year, and affects the quality of life of almost 15 million Americans. It is the growing problem of asthma, and it warrants our attention.

Years ago, relatively few people had this chronic disease. Those that did have asthma were categorized as sickly and little attention was paid to them, especially during gym class. Start asking around today, though. Talk to young mothers, teachers, church members, hospital workers. It doesn't take long to find someone who knows someone who has asthma. One-third of the nation's 14.5 million asthmatics are children, and asthma is the number one reason for school absences. Although rates of asthma are rising in general, the largest increases in the U.S. have been among the poor and minority populations living in urban areas.

A specific cure for asthma is still unknown, however, much has been learned about how to prevent asthma attacks. Knowledge of the disease and an asthma management plan can go a long way toward reducing the impact of asthma on individuals and their families.

## WHAT IS ASTHMA?

Asthma is a condition in which the air passages in the lungs, called bronchial tubes, are very sensitive to certain substances and are prone to becoming inflamed. When a person with asthma is exposed to one of these substances, several things happen. The inside walls of the bronchial tubes get inflamed and swell. Muscles that surround the tubes contract, squeezing them even tighter. And mucus is produced in greater amounts within the tubes. This sticky material adds to the clogging. The result is wheezing, coughing, increased difficulty in breathing, and tightness of the chest. These symptoms vary and can appear suddenly or

after hours or even days of warning signs. The disease has nothing to do with a person's physical strength or mental toughness. And if you think people with asthma are wimps, try a few minutes of vigorous exercise and then breathing through a straw. The lack of available oxygen is downright scary.

## WHAT CAUSES ASTHMA?

It is important to identify triggers that can cause an asthma episode. They include allergens (substances that a person has an allergic reaction to) and irritants. Here are some of the typical allergens that people react to:

Those with persistent asthma and exposure to allergens will find it helpful to see an allergy specialist to determine what specific substances they are allergic to. That way they will know where their efforts should be focused.

Irritants that can affect asthmatics are:

Being exposed to a single trigger does not necessarily bring on an asthma attack. But as exposures mount up, they cause the physical reactions to occur and a person becomes more susceptible. That is why it is so important to reduce exposures to a variety of known triggers. It is a means of reducing risk. Other means include using prescribed medications, monitoring lung function (which is a strong indicator of a person's daily wellness), and developing a preventive maintenance and emergency situation plan for asthma. But the most important thing to remember about triggers is that those within the home can be controlled by the family. By working together to eliminate household triggers, family members can help reduce asthma's impact on the affected individual's and the family's quality of life. So, where to begin?

First, you must develop a sense of perspective related to the

task. Tackling the types of activities needed to reduce triggers in the home can sometimes seem overwhelming, like a call for a complete lifestyle change. You need to assess the options and decide what actions will be the most successful. A realistic look at how much money and time you and your family can afford to invest should be weighed against the severity of the affected individual's asthma and its effect on the family. And remember, reducing even some triggers is better than none.

### **HOUSE DUST MITES**

These creatures are microscopic-sized eight-legged insects that are found in almost every home in areas of high humidity. They are not generally found at high altitudes or in arid areas unless moisture is added to the indoor air. They live in the dust accumulated in carpets and upholstered furniture, on bedding, and in fabrics. They eat tiny shed scales of human skin and need moisture in order to survive. Keeping mites (and the dust that carries them) away from asthmatics requires a dedicated cleaning routine, as well as some basic changes in the home. One of the most effective means of reducing exposure to mites during sleeping hours is to place a mite-proof cover on the bed pillow, mattress, and spring. These are called encasements and have zippers so the bedding can be inserted and then zipped up. Mites are too big to pass through the material, which is fabric covered and comes in different textures. Encasements can be purchased from a variety of medical and allergy supply stores. They are expensive, but those purchased from a reputable supply store generally carry a lifetime guarantee. The cost to outfit a twin bed can range from \$45 to \$60 depending on fabric.

Another step in getting rid of mites is to reduce the amount of overall dust to which the person with asthma is exposed. If possible, remove the carpeting from the bedroom and use only area rugs, which can be shaken out and washed frequently. Use wood, plastic, or leather chairs. If this cannot be done, then vigorous weekly vacuuming of carpeted areas and upholstered furniture can help.

Special vacuum cleaners equipped with HEPA (high-efficiency particulate arresting) filters can capture many more and smaller particles than regular vacuum cleaners and don't kick up dust in the air when being used. While they are highly effective in trapping allergens, they also carry a hefty price tag, from \$200 to \$600. If such a purchase is not within your budget, check out specially designed bags that can be used with regular vacuum cleaners. They are much stronger

and use special filtering material to trap small particles. These can be purchased at department or allergy supply stores and are fairly inexpensive (\$2 - \$3 a bag). The person with asthma should not do the weekly vacuuming chores, or even be in the room when vacuuming is being done.

You should also dust furniture weekly, and use a damp cloth to ensure the dust is picked up and not just spread around. Non-carpeted floors can be damp mopped. Pillowcases and bed sheets should be washed weekly in hot water. You should select blankets made out of material that can also be washed in hot water, and wash them every two weeks. The recommended water temperature is 130 degrees. This is higher than the normal water heating settings, so along with the benefits of reducing dust mites comes the risk of scalding from steaming hot water. You will have to decide, on the basis of your family's situation, if you want to raise the hot water temperature to this level.

To further reduce dust accumulation, you should remove stuffed animals and clutter from bedrooms and other rooms where the person with asthma spends a great deal of time. Stuffed animals that have become favorites for children and can't be discarded can be restuffed with washable material (like pantyhose) and cleaned frequently in hot water.

Having children with asthma help make these changes to their bedroom can help to ease their anxiety and even get them to enjoy the process. Melissa Myrick of Atlanta, Georgia, is the mother of Jay, age 6, and Andrew, age 4. Both have asthma and are allergic to dust mites. When she took action to control their exposure, the results were noticeable. "It's been a big help for us," she said. "We got the dust mite covers for the beds, pillows, and mattresses. We took down the curtains in their room and bought washable bedspreads instead of comforters. The kids took it in stride -- they thought it was fun because we got to redo their room. We went from a nursery to a big boy look, and they liked it." She says that the children have experienced fewer problems with their asthma since the changes in their bedroom.

The good news about taking these kinds of precautions for dust mites is that many of the same actions will help reduce other triggers such as pet dander and pollen. There are a few other triggers, however, that bear special consideration.

### **MOLD/MILDEW CONTROL**

Molds are microscopic-size fungi (plants with no chlorophyll, like mushrooms). Their spores move through

the air and they grow mildew when they come into contact with moist surfaces such as shower walls and curtains, kitchen counters, garbage cans, and exposed pipes. Refrigerator drip pans and gaskets often harbor mold. Carpet (especially if installed on a damp concrete floor or in a bathroom) is another hiding place.

There are several means to combat mold and mildew. You can reduce the humidity in your home by using air conditioners or dehumidifiers and by opening windows during sunny, dry days and closing them at night. For basements, the more you can increase air circulation and light and reduce humidity, the better. To test the level of humidity in your home, you can purchase a device called a thermohygrometer from an electronics or appliance store for about \$30. It measures both temperature and humidity and can be mounted on the wall permanently. Keeping the humidity level in your home below 50% will help keep mold (and dust mites!) at bay.

Another place to look for mold is a room humidifier. These machines have standing water and they disperse water into the air. If the water is laden with mold, it can irritate an asthmatic condition. Humidifiers should be drained frequently and cleaned to remove any mildew growth. People with asthma have to balance the need for enough humidity so that their nasal and bronchial passages aren't irritated by dry conditions, with the need to reduce mold, which thrives in a humid environment.

So how to clean away this persistent irritant? Fortunately, there are commercial products designed specifically to deal with mold and mildew, and household bleach is a good generic alternative. Disinfectant cleaners are also smart choices for cleaning mildew-prone zones. The goal is to eliminate any existing mold and mildew and to keep household areas clean, dry, well lit, and well ventilated. That will keep this asthma trigger from returning.

When using these mold and mildew cleaners, remember to open a window or door for ventilation -- the fumes can get quite strong. And don't mix products containing bleach with other cleaning products because the mixture could form a hazardous gas.

### **COCKROACHES**

Wherever there are food and water, there may be cockroaches. And since they are highly mobile and move through tiny cracks and crevices, they are harder to control in multiple-unit housing with shared walls and common

areas. The prevalence of cockroaches in inner-city urban housing has been regarded as one reason children living in these areas have a much higher rate of asthma than the general population. A recent article in the *New England Journal of Medicine* discussed the findings of the National Cooperative Inner City Asthma Study, which looked at more than 1500 children with asthma in 8 major inner-city areas. Fifty percent of dust samples from children's bedrooms showed high levels of cockroach allergens, and over 36% of the children tested were found to be allergic to this particular trigger.

Some of the recent thinking on getting rid of cockroaches focuses less on the use of pesticide-type sprays and more on environmentally friendlier tactics. After all, people with asthma can be affected by heavy sprays and chemicals and should not be exposed to them. Here again, home cleaning is a vital key to refusing the cockroaches food and water.

Kitchens can be breeding grounds for cockroaches because of the easy accessibility to food. You should get in the habit of cleaning up dirty dishes after every meal. Put away any leftovers in the refrigerator or in plastic containers or zippered plastic bags. Get rid of paper bags and newspapers that can provide a place for roaches to hide. Check underneath your sink for holes around pipes leading into the walls, and check for cracks along baseboards. These areas should be caulked to keep roaches out. Leaky faucets and pipes should be tightened to prevent moisture from accumulating (which helps reduce mold as well as deny roaches a source of water). Roach baits can be purchased for less than \$10 at most retail stores and should be placed in areas out of reach of children and pets. Garbage cans should be emptied frequently and bags tied off. People living in apartments or other multiple-unit dwellings should work with their landlords to clean up common areas, have garbage chutes steam cleaned, caulk and repair any holes in walls or doors, and educate their neighbors on the importance of cleaning their apartments and storing food properly in order to reduce cockroach infestations.

### **PETS**

Some people are allergic to the dander (dead skin flakes), saliva, and urine of warm-blooded animals. Those with asthma may find that their pets are a trigger for an attack. The simplest solution to this situation is, of course, to get rid of the pet. However, some pet owners may be too emotionally attached to their pets or unable to locate a safe new home for the animal. Fortunately, there are other steps

that can be taken to reduce the impact of pet allergens in the home.

At the very least, any animal causing an asthmatic reaction should not be allowed in the bedroom of the affected person. Pets such as cats and dogs should be kept outside as much as possible. Frequent vacuuming and dusting of the home will help to minimize the presence of the allergen. Use pet beds or blankets that are washable, and wash them weekly. If the veterinarian says it's OK, bathe the animal every week or two. If the doctor recommends it, the person with asthma may want to use a preventive medicine like an inhaler before playing with or walking the pet.

### **WHERE THERE'S SMOKE, THERE'S TROUBLE**

If your household includes a person with asthma and a cigarette smoker, you have a real dilemma. Quitting cigarettes is never easy, but a smoke-free environment is a major factor in improving the health of those with asthma. If at all possible, the smoker should give up cigarettes altogether. He or she should at least not smoke in the same room as the asthmatic and preferably not in the house at all. The same goes for riding in cars -- people with asthma shouldn't be exposed to cigarette smoke while in the confines of an automobile. According to the American Lung Association, children who breathe second-hand smoke are more likely to develop asthma and other lung diseases, suffer from ear infections, and experience more asthma attacks. So, eliminating or at least minimizing tobacco smoke in your home should be a priority in your plan to reduce asthma triggers within your home.

### **WHERE DOES IT END?**

Wow! You may be thinking that you don't have time to even dust, much less improve your entire house-cleaning regime. Don't be discouraged or overwhelmed. Decide which changes you can make first and which ones can be added later. Start with something like changing bed sheets and washing bedding weekly and vacuuming with a micro-filtration vacuum cleaner bag. You can also switch to damp mopping and dusting with damp cloths, which are quicker and more efficient than pushing the dirt around with dry sweeping and dusting. Add some other changes once you have integrated the first ones into your regular routine. When it comes to eliminating asthma triggers, every little bit helps.

### **WILL IT MAKE A DIFFERENCE?**

Evidence from studies of asthma patients' interactions with triggers indicates that taking steps to reduce their exposure

will help them better manage the disease. A report, "Guidelines for the Diagnosis and Management of Asthma," was published in 1997 by the National Asthma Education and Prevention Program Expert Panel, under the auspices of the National Heart, Lung and Blood Institute. In discussing how to control factors that contribute to asthma severity, the report stated that the first and most important step in controlling allergen-induced asthma is to reduce exposure to indoor and outdoor allergens.

Dr. David M. Mannino, a pulmonary medicine specialist and medical epidemiologist with the Centers for Disease Control and Prevention says, "There are no simple answers with asthma. Patients who know how to manage their asthma by avoiding triggers that make their symptoms worse usually do better. I had one patient whose asthma was triggered by agents at her worksite. She ultimately had to change jobs, which greatly improved her symptoms." Fortunately, you won't have to take such drastic measures to control indoor home allergens. By cleaning and re-arranging some of your daily routines, you can minimize the effect of asthma triggers in your home.

### **FOR MORE INFORMATION**

When dealing with asthma, you are not alone. Support groups at the local and national level exist to help families better understand and manage this disease. You should check with your doctor, local hospital, or state health agency to see what is available in your area. Some excellent national asthma organizations include the Allergy and Asthma Network-Mothers of Asthmatics, Inc. (800-878-4403, [www.aanma.org](http://www.aanma.org)) and the Asthma and Allergy Foundation of America (800-7ASTHMA, [www.aafa.org](http://www.aafa.org)). Your local American Lung Association chapter (800-LUNGUSA, [www.lungusa.org](http://www.lungusa.org)) is also a great source of information.

The link between maintaining the indoor home environment and reducing asthma triggers is getting notice beyond health care circles. The Soap and Detergent Association (SDA) is developing a program for community educators to teach consumers about methods of combating allergy and asthma triggers in their home through effective cleaning measures. Jane Meyer, Education Director for SDA, said that a recent survey showed there was little information available to the public about cleaning to help control allergies and asthma. "As the cleaning experts, we should be filling that void," she said. In an effort to do so, the SDA has developed a unique community education program that focuses on how families can control allergens in their homes through simple lifestyle

strategies and cleaning practices. Consumers can receive a free pamphlet, "Cleaning Tips for Controlling Allergies and Asthma," by requesting it from SDA, 475 Park Avenue South, New York, NY, 10016. You can also fax the request to (212) 213-0685 or visit the SDA web site at [www.sdahq.org](http://www.sdahq.org).

An asthma attack can be a frightening experience, both for the person involved and his or her loved ones. The worst part of this disease is the feeling of not being in control of your life. Focusing on maintaining your indoor environment gives you back some of that control and makes the extra time you spend well worth the effort.

## **References**

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