

CONTROLLING ASTHMA TRIGGERS IN THE HOME

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■ Household Asthma Triggers

- ❖ Dust Mites
- ❖ Cockroaches
- ❖ Mold
- ❖ Animal Dander
- ❖ Tobacco Smoke
- ❖ Other Combustion Products

■ Control Strategies

- ❖ Create a bedroom safe space
- ❖ Reduce excess moisture
- ❖ Eliminate trigger sources
- ❖ Clean up triggers

Asthma Triggers are Things that Make Breathing Problems Worse for People with Asthma. There

are many different kinds of asthma triggers. They include air pollution, pollen, cold weather, colds and emotional stress.

Some of the strongest triggers are found in the home — dust mites, cockroaches, mold and tobacco smoke. Triggers can be things that people are allergic to — "allergens." Triggers can also be things that irritate the lungs — "irritants." Your doctor can help you figure out what asthma triggers may affect your family.

You can do a lot to reduce exposure to household asthma triggers. Eliminate the source of the trigger. Reduce excessive moisture in the house. Keep dust levels down. Make the bedroom a safe space.

This may require some repairs to the house and some changes of habit. Your home will be safer and more comfortable for everyone in the house. If asthma runs in your family, decreasing infant exposure to triggers may lessen the chance that your child will develop asthma.

HOUSEHOLD ASTHMA TRIGGERS

■ Dust Mites

Dust mites are invisible insects that eat dead skin. The dead skin collects on bedding and upholstered furniture. Dust mites are a normal part of life. Every house has them. However, many people with asthma are allergic to dust mite droppings.

Dust mites and their droppings collect on sheets, blankets, mattresses, pillows, rugs, fabric toys, upholstered furniture and also become part of the house dust.

Special allergen-proof covers for pillows,

mattresses and box springs keep dust mites from building up. Wash bedding frequently in hot water. See the section below *Creating a Bedroom Safe Space* for more specific information.

If possible, replace upholstered furniture with smooth-surfaced furniture, like vinyl, that reduces build up of dust mites.

Similarly, if possible, get rid of carpet and large rugs because hard surface floors reduce the build up of dust mites and can be more easily cleaned.

Dust mites thrive in a humid environment.

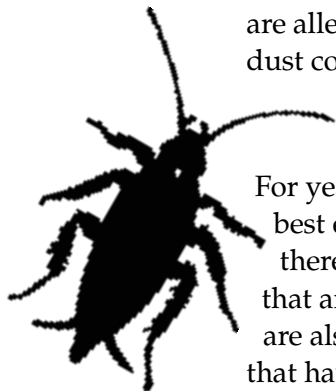
See *Reducing Moisture*.



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■ Cockroaches

Many houses have problems with cockroaches. And many people with asthma are allergic to cockroach dust. Cockroach dust comes from roach body parts and droppings. It is a very strong asthma trigger.



For years, cockroaches have defeated our best efforts to get rid of them. Now there are new methods and materials that are very effective. The new materials are also safer than the pesticide sprays that have been commonly used. The new roach control strategy is called integrated pest management (IPM). IPM can be used by pest control contractors, landlords, homeowners and tenants. See *Getting Rid of Roaches*.

Even after you get rid of the roaches, the roach dust is still around and is an allergen. Use a detergent and clean rinse water to cleanup roach body parts and droppings. See *Cleaning Asthma Triggers*.

■ Mold

Molds are tiny plants that can grow on moist surfaces in houses. They look like dark or discolored fuzzy areas and may have a musty odor. Many people are allergic to molds and they are common asthma triggers.



(A certain kind of mold may be associated with a serious infant lung disease. This mold can be found on wood, paper, wall board or similar material that has been soaked by leaks or flooding. Call your local health department for advice if there is an infant living in the house and you suspect this kind of mold is present.)

Throw out boxes, wallboard, newspapers and other porous material that has gotten soaked and has mold growing on it. Use a detergent solution to cleanup mold. See *Cleaning Asthma Triggers*. Paint over surfaces with a mold-retardant paint like

Permawhite™.

The key to reducing mold is getting rid of excessive moisture in the house. See *Reducing Excess Moisture*.

■ Animal Dander

Some people with asthma are allergic to the dander from pets in the house. Usually cats are the problem. Fewer people are allergic to dogs.

- ❖ If possible, get rid of the pet.
- ❖ Keep the pet outdoors.
- ❖ Do not allow the pet in the bedroom.
- ❖ The allergen clings to clothes and hands. Hand washing and change of clothes after contact with a pet or visiting a house with a pet may help.
- ❖ Bathe the pet frequently. (Check with vet.)
- ❖ Vacuum and clean pet sleeping and play areas frequently. (See vacuuming precautions in *Cleaning Asthma Triggers*.)

■ Tobacco Smoke

Tobacco smoke is a serious breathing irritant and a strong asthma trigger. In addition to asthma, there are other health worries from breathing tobacco smoke.

It is best for the smoker's health and the other people in the house to quit smoking. That can be a very hard thing to do. There are programs that can help. Call the American Lung Association (216/781-5656), the American Cancer Society (800/227-2345), or your health care provider.

- ❖ Do not allow smoking inside the house; have people smoke outside.
- ❖ Do not allow smoking in the car with a person with asthma.
- ❖ If smoking outside is not possible, limit smoking to one room that the person with asthma can stay out of. Keep the door closed.



■ Combustion Appliances

Combustion appliances are household equipment that burns fuel. The fuel could be natural gas, kerosene or wood. The appliances are furnaces, water heaters, stoves, space heaters and fireplaces. When fuel is burned, it produces gases and particles. These can be irritant triggers for asthma.

Carbon monoxide from faulty combustion appliances can be deadly. In addition, unvented and improperly vented combustion appliances can add large amounts of

moisture to the home environment.

- ❖ Install a carbon monoxide detector.
- ❖ Have the heating system inspected annually.
- ❖ Inspect and keep clear the chimney clean-out opening.
- ❖ Do not use unvented space heaters.
- ❖ Do not use stoves for heating.
- ❖ Do not use wood burning fireplaces.
- ❖ Use kitchen exhaust fans.
- ❖ Do not let the car idle in the garage.
- ❖ For attached garages, install a timed exhaust fan.

CLEANING ASTHMA TRIGGERS

After the asthma trigger sources have been controlled, the allergens that have built up in the household dust and that stick to floors and other surfaces need to be removed. Some of these allergens can remain potent for years.

The person with asthma should not be in the room being cleaned. The cleaning can stir up the allergens and trigger an attack.

Rugs and Carpets

Where possible, remove older carpets that are heavily soiled -- they are probably contaminated with allergens. It is best to use area rugs that can be washed frequently.

Carpet removal can release a great deal of dust that can go all over the house.

Removal needs to be done very carefully.

The person with asthma should not be in the room when carpet is removed.

- ❖ Seal off the room with plastic sheeting.
- ❖ Mist the carpet with water mixed with a small amount of dishwasher detergent.
- ❖ Cut the carpet into small sections, roll them up.
- ❖ Wrap the sections in plastic and seal with tape.
- ❖ Mop the floor as each section is rolled up and again when all the sections have

been removed.

It is especially important to not use carpets (or large rugs that cannot be washed frequently) in the basement, bathroom and kitchen. In these rooms, the rugs can get wet and mold can grow on them.

If you do have carpets, it is important that they are vacuumed frequently and safely. Do not vacuum when the person who has asthma is in the room. It is best to use special "HEPA" or "allergen" or "low emission" vacuums and bags that reduce the amount of allergen dust that gets in the air during vacuuming. You may be able to get allergen filter bags and special exhaust filters to up-grade your vacuum.

If you don't have the special bags or vacuums, it may help to use bags already 1/2 full -- a new empty bag lets too much dust out. When you put in a new bag, it may also help to clog the bag with flour or cornstarch. Pour a cup or two of flour or cornstarch on the floor and vacuum it up.

Try to vacuum weekly. Vacuum very slowly - about three times longer than usual - in order to pick up the allergen dust. A vacuum with a beater bar works best. A 'dirt finder' indicator light helps.



For Surfaces that Can be Wet Cleaned

Clean thoroughly counters, cabinets, vinyl floors, woodwork, etc. with a household detergent. For small areas, use a paper towel or rag dipped in the detergent and water solution. After each area is cleaned, discard the towel/rag and use a clean one - don't dip the dirty towel/rag into the cleaning solution.

For large floor areas, use a detergent bucket and a rinse bucket. Rinse the mop each time before dipping back in the detergent bucket. Change the rinse water frequently. The idea is to pick up all the allergens and not just spread them around.

Cleaning with bleach may denature or destroy remaining allergens, so that they can no longer trigger an allergic reaction. Use about 3/4 of a cup of household bleach in a gallon of water. Wait several minutes to give the bleach time to work before rinsing the surface.

Never mix bleach with any other cleaning products - dangerous vapors can be produced. Make sure there is good ventilation - open a window and use a fan. Read and follow label precautions. Some people are sensitive to bleach vapors and they should not be in the area when cleaning with bleach is done.

REDUCE EXCESS MOISTURE

Too much moisture in a house may increase dust mites, mold and roaches.

The excess moisture can be from a variety of sources: roof and plumbing leaks, poor ventilation, flooding and sewer back-ups.



Moisture Control Strategies

❖ **Air Circulation** — Avoid keeping the house closed up too tight. Be sure the air can circulate throughout all the areas inside the house and that fresh air can get in and stale air can get out.

If you are tightening up your house for weatherization purposes, be sure to include ventilation fans in your plan that exhaust stale air and pull fresh air into the house.

❖ **Exhaust Fans** — Use kitchen and bathroom fans for ventilation of humid air. If there is no bathroom exhaust fan, keep the door open after showering.

❖ **Drying Clothes** — Hang clothes outdoors to dry or use a clothes dryer that is properly vented outdoors. Make sure the dryer does not vent into the basement or crawl space. Clothes line-dried

in basements and attics can create a humid environment.

❖ **Repair Leaks** — Repair plumbing or roof leaks. Mold on plaster, wallboard and wood or visible stains are clues to leaks and water damage.

❖ **Cleanup Standing Water** — Clean up flooded basements or other wet areas as soon as possible. Discard water-soaked material.

❖ **Humidifiers** — Do not use humidifiers. They will only contribute to the moisture that you do not want and they are a perfect habitat for mold growth.

❖ **Dehumidifiers** — Dehumidifiers may sometimes be needed in basements, however they must be emptied and cleaned regularly or they will be a site for bacteria and mold growth. It is best to use them with a hose connected to a drain.

❖ **Air Conditioners** — Air conditioners can be helpful to control seasonal humidity.

❖ **Basement** — Moisture problems in basements are usually related to problems with drains which need to be kept free of debris, damaged walls which



need to be repaired and problems of external water drainage addressed below.

- ❖ **Crawl Space** — A crawl space can be a big source of moisture. Clean junk out of the crawl space and make sure the surface is even. Then apply 6 mil plastic sheeting over all soil, lapping seams at least 1 foot and securing plastic 1 foot up exterior walls. This is an inexpensive procedure that works wonders.
- ❖ **External Water Drainage** — Your basement will be damp or wet if there is inadequate drainage outside.

- Slope soil around the house so that water drains away from the foundation.
- If there is a wet basement due to storm drain leakage, disconnect storm drain downspout from storm drain and run water at least 5 feet away from house. Do not let water affect your neighbor's house.
- Keep gutters clean and pitched toward downspout to assist water flow.

GET RID OF ROACHES

■ Integrated Pest Management (IPM)

IPM is a safer and more effective way to get rid of cockroaches. IPM does not use pesticide sprays, foggers or bombs. Those methods of application create too much exposure to pesticides that are toxic and may be asthma irritants.



IPM uses environmental controls and pesticide baits. The baits are roach food mixed with roach poison in a form that minimizes human exposure. Baits have a delayed-action pesticide that kills the roach after it gets back to the nest. Other roaches eat the dead roach and they are poisoned. Through this "domino effect" many roaches die for each one that eats the bait directly. Soon all the roaches are gone.

The IPM Strategy is Simple and Effective

- ❖ Use insecticide in bait form to safely attract and poison the roaches.
- ❖ Deny the roaches food, water, shelter and entry.
- ❖ Do not use insecticide sprays, foggers or bombs.

Here is how IPM works:

- ❖ Place bait stations near roach hiding

places and near food and water sources.

- ❖ Apply small dabs of gel bait with a syringe behind the stove, refrigerator and other areas roaches come to.
- ❖ Combat™ and other brands of roach bait can be purchased from pest control suppliers and from hardware, grocery and drugstores.
- ❖ Remove all food sources. Roaches like the bait, but they like cookie crumbs and potato chips better. Cleanup food debris from the floor, tables, counters and couches daily. Wash dirty dishes daily or at least put them in soapy water in the sink. Cover all food containers. Keep trash in a sealed container. Do not leave pet food out.
- ❖ Remove all sources of water. Fix leaks. Wipe up spills. Do not leave pet water out.
- ❖ Cockroaches like to live and hide in clutter. Get rid of clutter — bags, boxes, clothes and junk.
- ❖ Seal up roach living areas and entry points in walls and cabinets. Use caulk, steel wool, screens and foam to fill cracks and holes.

See Environmental Health Watch's *Roach Control Guide* for more information.

CREATE A BEDROOM SAFE SPACE

A good place to start your asthma trigger control efforts is the bedroom of the person with asthma. Even if you cannot reduce all the asthma triggers in the house, it is helpful to make their bedroom a safe space for the person with asthma.



The bed can be the place of most intense and longest exposure to asthma triggers. Dust mites, in particular, accumulate in bedding — mattress, pillow, sheets and blankets. Other allergens — roach dust, animal dander, molds — can also get onto the bed.

These allergens are transported to the bed on clothes and hands. The allergens may also be in dust that is stirred up as people move around the bedroom. Thus, when sleeping, the person with asthma may spend a long time in close contact with high concentrations of several allergens.

There are things that you can do to reduce this exposure.

- ❖ Use special allergen-proof covers for the pillow, mattress and box spring. The covers keep the dust mites and other allergens from building up.

■ Asthma: Indoor and Outdoor Pollution Hazards

- Opponents of strict air pollution regulation try to minimize the adverse health effects of outdoor air.
- They point to the role of indoor pollution in illnesses like asthma.
- But the significance of indoor hazards does not get outdoor pollution off the hook.
- Both indoor and outdoor pollutants increase breathing problems for asthma sufferers.
- We need to control both indoor and outdoor pollution.

- ❖ Wash sheets and pillow cases every two weeks in hot water. It is best if the water is 130 degrees. Beware, this temperature can burn skin! Ideally keep water at below 120 degrees and increase it to 130 degrees only when doing laundry. Dry bedding in a very hot dryer. Washing at a lower temperature may be helpful if done weekly.

- ❖ Use washable blankets and wash them every month in hot water or more frequently in cold water. Wash the allergen-proof pillow and mattress covers every couple of months.

- ❖ It is best to have bare floors. It is easier to keep them free of dust. See the section above on floor cleaning.

- ❖ Area rugs should be washed every month in hot water.

- ❖ Remove upholstered furniture, drapes and curtains. They collect dust.

- ❖ Remove as many other things that collect dust as possible — books, toys, clothes. Put these in drawers or covered boxes.

- ❖ Allergens collect on stuffed animals. Only keep a few stuffed animals and put those in the freezer for 24 hours once a week (to kill dust mites).



Vacuum thoroughly when taken from the freezer

- ❖ Do not use humidifiers or vaporizers.

- ❖ Keep the closet door and the bedroom door closed.

- ❖ Use a window air conditioner.

- ❖ Remove shoes at the door.

- ❖ Use a HEPA room air cleaner.

- ❖ No smoking, no pets, no plants.

- ❖ See *Cleaning Asthma Triggers*.