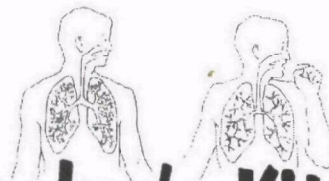




United States
Environmental
Protection Agency

EPA/402-B-01-002
January 2001



Asthma Speaker's Kit

Introduction to Asthma



Indoor Environments Division
Environmental Protection Agency

Introduce yourself.

Explain that the presentation is about 1 hour in length and indicate whether or not you are open to receive questions during your presentation.

Preparation Suggestions

Materials Needed

- Markers
- Flip Chart
- Slide Projector
- Drinking Straws (one for each participant)

Handouts

Order the following handouts by calling EPA's National Service Center for Environmental Publications at (800) 490-9198

Clear Your Home of Asthma Triggers: Your Children Will Breathe Easier

EPA document number 402-F-99-005 Will also become available in Spanish, Chinese, Korean, and Vietnamese in 2001

Secondhand Smoke & Children

EPA document number 402-F-98-011(English) and 402-F-98-011A(Spanish)

Indoor Air Quality Tools For Schools Kit

EPA document number 402-K-95-001

Topics Covered

What is asthma?

Who is most at risk to get asthma?

What does the indoor environment have to do with asthma?

How can you reduce exposure to indoor asthma triggers?

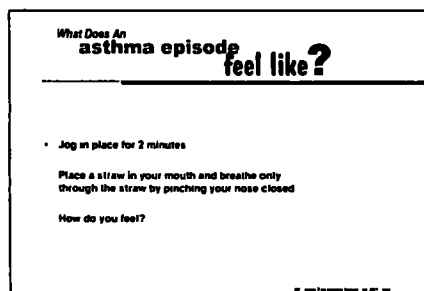
What can I do to help educate others about indoor asthma triggers?

The presentation will include general information on asthma, as well as more specific information about how our indoor environments relate to asthma. The audience will come away with easy, effective ways for people to avoid asthma triggers indoors.

Note

This presentation does not discuss medical interventions for asthma (see page 10 of the notes for more detailed explanation) You can modify and expand the information presented to include the medical aspects of managing asthma

Not contagious



This exercise demonstrates how an asthma attack might feel.

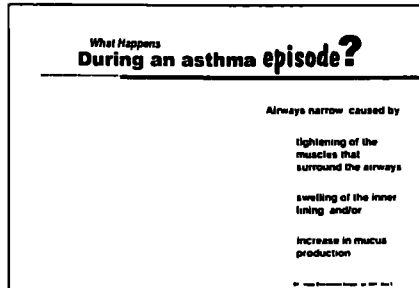
You will need one straw per person in the audience.

Asthmatics or other persons with respiratory conditions should not participate in this exercise, and anyone experiencing discomfort should discontinue the exercise.

After handing out the straws, ask your participants to stand up and move in place for 2 minutes by jogging, walking, or doing jumping jacks (depending on fitness level).

Then ask people to breathe through their straws while pinching their noses closed.

At the end of the exercise, ask your participants how they felt during the exercise.

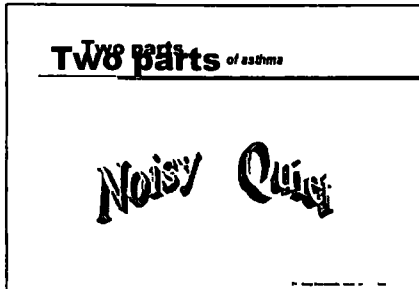


Airways are the passages that carry air to the lungs. As the airways progress through the lungs, they become smaller and smaller, like branches of a tree.

When asthma is under control, as in the person on the left, the airways are clear, and air flows easily in and out. When asthma is not under control, as in the person on the right, the sides of the airways in the lungs become narrow, and less air can pass in and out of the lungs.

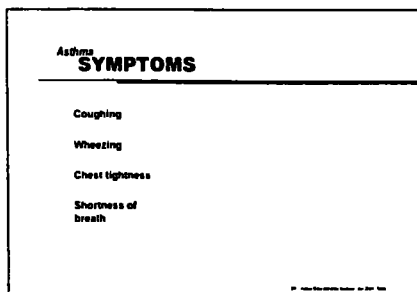
Asthma causes breathing difficulties because of three reasons. First, the muscles around each air passage constricts or tightens, making the airways smaller. Second, the lining of the lungs are irritated and get inflamed and swollen, much like your skin would when you get a sunburn or a rash. Finally, the airways produce more mucus than normal, and anyone who has had a stuffy nose knows that mucus can also inhibit air passage.

Asthma can develop quickly, and it can range from being a mild discomfort to a life-threatening attack if breathing stops completely. Asthma episodes are often separated by symptom-free periods.



Often, when we think of asthma, we think of a person who is coughing and wheezing. These are part of the noisy part of asthma.

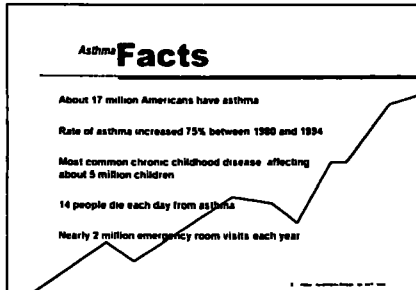
However, there is another part of asthma which is also very important, and that is the quiet part of asthma. As we discussed in the previous slide, the lining of the airways become inflamed during an asthma episode. The inflammation can be present without a person having outward symptoms of asthma. The inflammation also requires medical treatment.



Here are some typical asthma symptoms. Which symptoms listed are part of the noisy part of asthma? The quiet part of asthma? [ALL symptoms listed are part of the noisy part of asthma]

Many of these symptoms can be caused by reasons other than asthma. On the other hand, a person's asthma could also be asymptomatic, meaning that the person is not experiencing any symptoms.

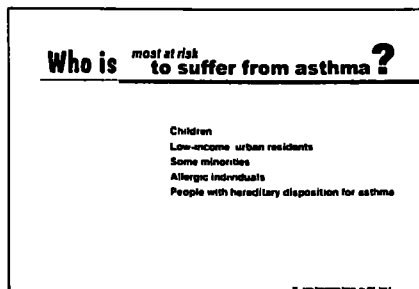
A person should consult a physician to accurately determine whether they have asthma and to learn how to detect when their asthma requires treatment.



Asthma is a significant health problem in this country, and it is on the rise.

Ask your audience: How many people know someone who has asthma?
(probably most people will raise their hands!)

Children are particularly affected by asthma, and yes, asthma can and 'does cause death.



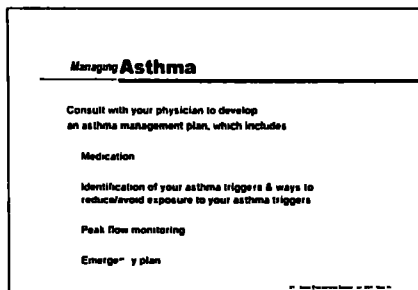
About 5 million American children have asthma, or about 7.3% of children under 18. Asthma is the leading chronic childhood illness and the leading cause of school days missed due to chronic illness.

The most severe cases of asthma are found in urban areas. This is likely caused by higher poverty rates, exposure to higher levels of some substances which can trigger asthma, and limited access to information and medical care.

African-American children are four times more likely to die from asthma than Caucasian children of the same age. The prevalence of asthma for some Hispanic populations is much higher than for non-Hispanic Whites. (For example, the prevalence of asthma is 11.2% among Puerto Ricans, as opposed to 3.3% for non-Hispanic Whites.)

As mentioned earlier, the inherited tendency to have allergies is also a risk factor for asthma.

Children with one asthmatic parent have a 25% greater chance of developing asthma than children of non-asthmatics. The difference goes up to 50% when both parents have asthma.



Fortunately, asthma is a manageable disease. There are two parts to managing asthma: preventing asthma attacks and treating asthma episodes when they do occur. Your doctor or health care provider is an important person in helping you develop an effective asthma management plan. Have a written asthma management plan, and make sure that the plan includes both medical and environmental management. By following your plan, an asthmatic can lead a full and active life and significantly reduce, or even prevent, asthma attacks.

In this presentation, we will not cover asthma medications, emergency plans, or peak flow monitoring. Your doctor or health care provider can and should assist you in these areas. This presentation will discuss the most common indoor asthma triggers in detail, but will not cover how to identify which triggers are problems for you. Again, your doctor or health care provider can provide you assistance.

Common asthmaTriggers	
Allergens molds, dust mites, cockroaches, animal dander, pollens, foods	Other Viral respiratory infections Changes in weather (cold air, wind, humidity) Exercise Medication Endocrine factors (menstrual period, pregnancy, thyroid disease)
Irritants secondhand smoke, strong odors, aerosols, volatile organic compounds, ozone, particulate matter	
5 major indoor asthma triggers	

Asthma episodes can be caused by something that bothers or irritates your lungs, which are called asthma triggers. Not all the asthma triggers affect every person with asthma. Not all asthma triggers are listed here.

There are many asthma triggers. Two major categories of asthma triggers are allergens and irritants.

Optional Exercise

Before you show this slide, ask your audience to brainstorm asthma triggers. Record their responses on a flipchart.

Allergens are substances that can trigger an allergic reaction in some people. During an allergy attack, your body releases chemicals called mediators. These mediators can trigger asthma episodes.

Irritants can also trigger asthma, probably by stimulating irritant receptors in the respiratory tract. These receptors, in turn, cause the muscles surrounding the airway to constrict, resulting in an asthma episode.

How many of the allergens and irritants listed here are found inside homes, schools, and childcare settings? [Answer: ALL]

Again, it is important that each asthmatic find out which triggers are a problem for them.

What does the
Indoor Environment
Have to do with **Asthma?**

All of the common asthma triggers are found indoors

Americans spend about 90% time indoors

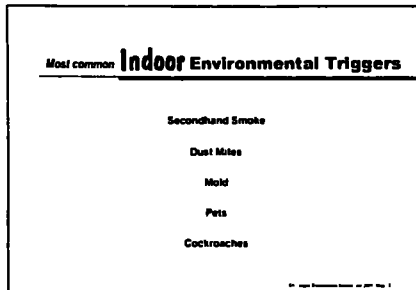
Reducing exposure to indoor allergens and irritants can reduce asthma symptoms

Prevention is an important asthma management tool

Let's consider the fact that many allergens and irritants are found indoors. Add to that the fact that Americans spend up to 90% of their time indoors. Therefore, it is not surprising that exposure to indoor asthma triggers is a significant contributor to the asthma problem.

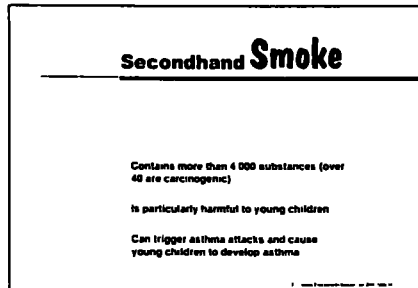
Conversely, controlled studies show reducing exposure to indoor allergens can reduce asthma symptoms

Therefore, avoiding indoor asthma triggers is important to helping avoid asthma attacks. Also, when asthma episodes do happen, they could be less severe. However, many people are still focusing only on treating asthma once an episode has already started. Let's see if we can learn about how to keep these asthma attacks from starting in the first place.



Asthma may be triggered by allergens and irritants which are common in our own homes, schools, and daycare settings.

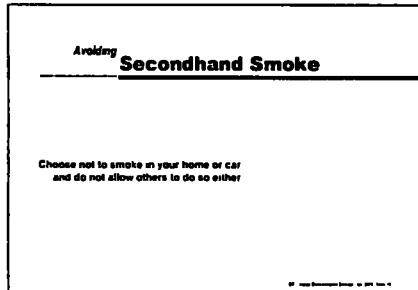
The following slides show what you can do to help control five major indoor triggers of asthma. Some of the most common indoor triggers include: secondhand smoke, dust mites, pet dander, molds, and cockroaches.



Secondhand smoke is also known as Environmental Tobacco Smoke. Secondhand smoke includes both exhaled mainstream smoke from smokers and sidestream smoke from the end of a cigarette, cigar, or pipe. It contains more than 4,000 substances, including over 40 that are linked to cancer. Many of the compounds in tobacco smoke are released at higher rates in sidestream smoke than in mainstream smoke.

Young children and babies are especially vulnerable to secondhand smoke, and up to 1 million asthmatic children have their condition made worse by exposure to secondhand smoke. Secondhand smoke can also cause young children to develop asthma.

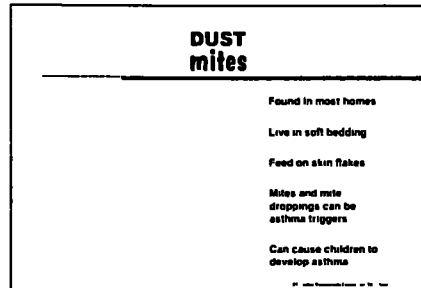
In addition, children exposed to secondhand smoke are more likely to suffer from pneumonia, bronchitis, and other lung diseases, and be more likely to have ear infections.



Given the adverse health effects of secondhand smoke, it is important to avoid smoking in your home or car. Until you can quit smoking, you should smoke outside.

Never smoke in the presence of asthmatics or children, who are particularly susceptible to the effects of secondhand smoke.

Do not allow babysitters or others who work in your home to smoke in the house or near your children.



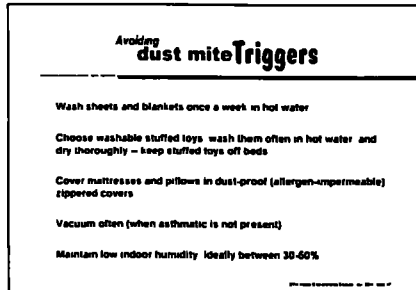
Dust mites are tiny, spider-like animals which are too small to be seen.

Dust mites feed on skin flakes and like to live in warm, humid places. Therefore, ideal places for mites to live are mattresses, pillows, carpets, fabric-covered furniture, bedcovers, clothes, and stuffed toys, where there is high humidity and an ample food source.

Both the dust mites themselves, and their feces or droppings, are allergens and can trigger asthma.

On average, a double-sized bed can easily contain 2,000,000 dust mites, with each mite producing 10-20 waste particles (feces) per day.

As with secondhand smoke, dust mite exposure can also cause young children to develop asthma.



When avoiding dust mite triggers, try to both kill dust mites and clean to remove mites and their droppings.

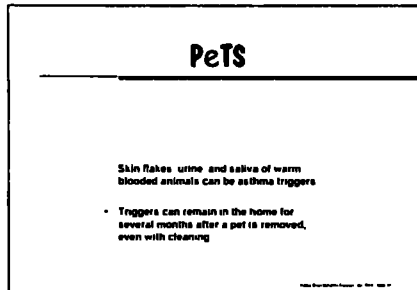
Wash bedding once a week in hot water, which has been shown to reduce mites.

Stuffed toys are often overlooked as a reservoir for mites. Choose washable stuffed toys and wash them regularly. Keep them off beds to reduce the exposure received during long hours of sleep.

Zippered mattresses and pillow covers which do not allow the mites to pass through appear to be effective in reducing the amount of exposure

Vacuum floors and/or remove dust often, which may help reduce exposure to dust mite allergens. Avoid vacuuming when the person with asthma is in the room.

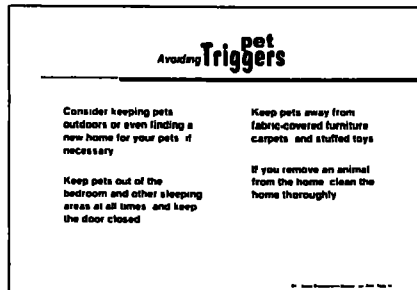
As you know, mites like to live in high humidity. Keeping humidity levels low, between 30-50% relative humidity, can be effective in lowering mite populations. Humidity levels can be measured by hygrometers which are available at local hardware stores.



Every one probably knows someone who is allergic to animals. Contrary to popular belief, people are not allergic to the fur on pets, but to the animals' skin flakes, saliva, and urine.

Here, pets refers only to warm-blooded animals such as dogs and cats. For most asthmatics, owning fish and turtles or other reptiles should not be a problem for their asthma.

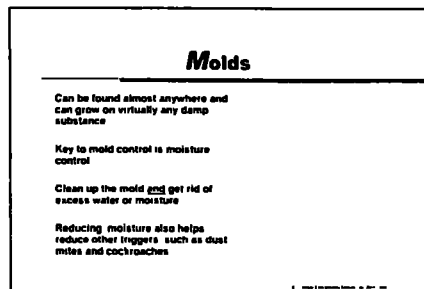
Most people don't realize that pet allergens can actually stay in a room long after a pet has been removed.



Because pets and people move around in a home, it can be difficult to contain pet allergens in any home where there is a pet. If an asthmatic is allergic to animals, it is best not to have a pet at all. Consider keeping the pet outdoors or finding a new home for the pet.

As we saw in the previous slide, pet allergens can remain long after a pet has been removed. Therefore, if you remove a pet, be sure to clean very thoroughly to remove the pet allergens. Clean the floors, walls, and especially the carpets and upholstered furniture.

Some asthmatics may find that isolating the pet is sufficiently effective in helping to keep their asthma under control. If so, be sure to keep the animal out of sleeping areas at all times, and keep the animal away from upholstered furniture, carpets, and stuffed toys.

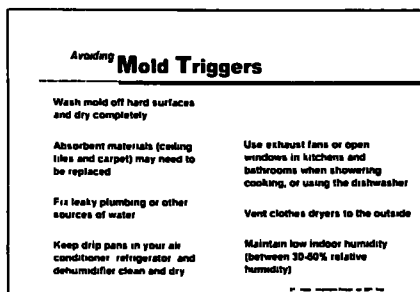


Mold can also trigger asthma attacks. Molds can be found almost anywhere; they can grow on virtually any substance when moisture is present.

Molds produce tiny spores that reproduce, just as plants produce seeds. Mold spores waft through the indoor and outdoor air continually. When mold spores land on a damp spot, they may begin growing and digesting whatever they are growing on in order to survive. Molds can grow on wood, paper, carpet, and food.

When excessive moisture or water accumulates indoors, mold growth will often occur, particularly if the moisture problem remains undiscovered or unaddressed.

There is no practical way to eliminate all mold and mold spores in the indoor environment. Keeping that in mind, it is possible to control indoor mold growth, and that is by controlling moisture. Remember that when tackling a mold problem, you need to both clean up the mold and correct any problems of excess moisture. Reducing moisture also has the benefit of helping to reduce other asthma triggers, such as dust mites and cockroaches.



There are a number of common places in the home where moisture and mold can be a problem, such as kitchens, bathrooms, and basements.

Fix any plumbing leaks immediately. If water damage occurs, you should dry water-damaged areas completely within 24 to 48 hours. In some cases, soaked materials such as carpeting may need to be replaced.

Check the various drip pans in your home and keep them clean and dry.

Use the exhaust fans in your bathrooms and kitchens when showering or cooking.

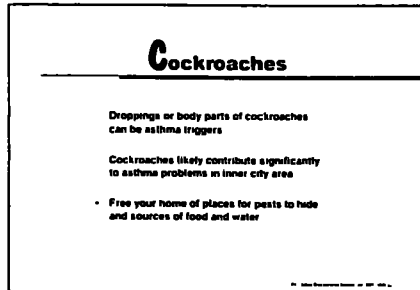
Make sure that your clothes dryer vents to the outside.

Keep the relative humidity in your home between 30 and 50% to maximize comfort and minimize asthma triggers. Using an air conditioner or dehumidifier can help to lower humidity when it is high.

Avoid installing carpet directly on concrete floors in the lowest level of your home.

Optional Exercise

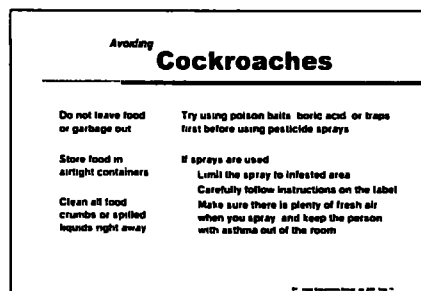
Before you show this slide, ask your audience to brainstorm a list of common locations for mold to grow in the home (such as shower curtains and window moldings). Record their responses on a flipchart.



Cockroaches, or, more accurately, their body parts and droppings, can trigger asthma symptoms.

Because of higher cockroach populations in inner cities, cockroaches are probably a more significant factor for asthmatics in inner city areas.

The key to controlling cockroaches is to keep them from entering your home, and keep your home free of sources of food and water.



There are a number of ways to make your home attractive to humans but unattractive to pests.

- Do not leave out any food or garbage
- Store food in airtight containers
- Clean all food crumbs or spilled liquids right away
- Wash dishes when you are done using them, and do not leave dirty dishes in the sink, especially overnight
- Keep counters, sinks, and tables clean and clear of clutter
- Fix plumbing leaks and other moisture problems
- Remove piles of boxes, newspapers, and other items where cockroaches may hide
- Make sure trash in your home is properly stored in containers with lids that close securely, and remove trash daily

If pests still continue to be a problem, then try using poison baits, boric acid, or traps first before using pesticide sprays. Keep in mind that pesticides are toxic for people as well, so try to use the least toxic methods for pest control first. If you must use sprays, do the following:

- Limit the spray to the infested area
- Do not spray where you prepare or store food, or where young children play, crawl, or sleep
- Carefully follow instructions on the label
- Make sure there is plenty of fresh air when you spray, and keep the person with asthma out of the room

Resources
and Information

Environmental Protection Agency Asthma Website
www.epa.gov/asthma
 (800) 128-4210

EPA Indoor Air Quality Information Clearinghouse
 (800) 575-1463 www.epa.gov

Allergy and Asthma Network/Workshop of Asthma
 (800) 522-2762 www.aanet.org

American Academy of Allergy, Asthma and Immunology
 (800) 551-2762 www.aaaai.org

American Lung Association
 (800) 558-4156 www.lungusa.org

Asthma and Allergy Foundation of America
 (800) 7-A-S-THMA www.aafa.org

REPORTS

Report on the Role of Allergens and Indoor Air Exposure, National Academy of Sciences
<http://www.nas.edu>
 (202) 337-1000

Guidelines for the Diagnosis and Management of Asthma, 1991 National Asthma Education and Prevention Program
 (202) 337-1000

There are quite a number of places you can go to to get additional information about asthma. Here are just a few.

[Provide your own sources here as well.]

Getting Others To Take Action

Take the recommended actions and encourage others to do so too
Smoke-Free Home Pledge (800) 513-1157
Indoor Air Quality Tools For Schools (800) 438-4318
Secondhand Smoke Community Action Kit (800) 438-4318
ALA Open Airways for schools (800) LUNG-USA
ALA A is for Asthma in local Headstart or daycare center
AAFA Childcare training

End by encouraging your audience to take action against asthma! First, take the actions recommended in EPA's brochure "Clear Your Home of Asthma Triggers," then encourage others to do so by using the many resources available to talk with friends and family, schools, child care providers, etc.

These are some things that you can do in your community to help spread the word about asthma and asthma triggers.

EPA has a Smoke-Free Home program. You can take the pledge yourself and call the hotline number to receive your kit. You can also encourage others to join you in taking the pledge by ordering and passing out the informational brochure.

Launch a Secondhand Smoke campaign in your community. Order EPA's *Secondhand Smoke Community Action Kit* to get you started.

Encourage your schools to improve their indoor air quality. Call and order an *IAQ Tools for Schools* kit, or check out the kit on the EPA website.

Open Airways is an ALA program to help children with asthma manage their asthma better. Encourage your schools to implement this program. *A is for Asthma* is a program that ALA has developed for younger children. Encourage daycare centers in your area to implement this program.

The Asthma and Allergy Foundation of America offer a CEU-based training course for licensed child care providers on appropriate asthma and allergy management, including environmental controls, in their child care settings. The program, *Asthma and Allergy Essential for Child Care Providers*, is co-sponsored by the Indoor Environments Division of the Environmental Protection Agency. Contact your local AAFA Chapter to co-sponsor a training for child care providers in your area.