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# Environmental control as part of asthma management

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Environmental control should be an integral part of asthma management. Learning about which factors (often referred to as allergens, triggers and irritants) in your daily surroundings may make your asthma worse, and understanding how to avoid those factors, is the basis of environmental control.

## **What are these environmental factors?**

Allergens that can worsen your asthma include airborne pollens, animal dander (dead skin flakes), house dust mites, cockroach droppings and indoor moulds. If your asthma is triggered by any of these allergens, it is important to do your best to avoid exposure to them.

Some substances do not trigger asthma, but can nonetheless make it worse. These substances, called irritants, include the following: air pollutants, such as tobacco smoke; fumes from cooking and external air pollution; chemicals; strong odours, such as perfumes; household cleaners, paints or varnishes; and changing weather conditions, such as changes in temperature and humidity, which act by increasing pollution and allergen concentrations. All of these irritants can aggravate asthma and should be avoided, if possible.

## **Why is it important to control environmental factors?**

Environmental control should always be initiated along with taking your prescribed asthma medications. If exposure to allergens and irritants is reduced or avoided, then less medication is usually required to control asthma symptoms.

## **How are these triggers recognized?**

It is not always easy to identify which allergens or irritants are making your asthma worse. You may often get some idea by maintaining an asthma diary, in which you keep a daily record of your symptoms. In this way, you can determine whether your symptoms are worse on certain days and whether you were exposed to any particular factors that day – for example, after eating certain foods or when visiting friends who have pets.

Your doctor or nurse educator can also help you to determine which factors you are allergic to by carefully reviewing your history, along with your asthma diary, and by performing specific skin prick tests to see which allergens you react to. These tests are relatively painless, and can be done in most physicians' rooms or asthma clinics. Your doctor or nurse educator will then be able to recommend control measures to help you avoid the allergens that you are allergic to.

Some people are exposed to certain allergens, vapours, dust, gases or fumes in their work environment. These can often worsen symptoms in people with pre-existing asthma, and can sometimes trigger asthma for the first time; sometimes they may be recognized by daily wheezing that improves on weekends or during vacations. It is important that you review any potential occupational exposures to such factors with your doctor. He or she will then be able to determine whether these are contributing to your asthma.

## How can environmental factors be controlled?

It is sometimes impossible to eliminate entirely exposure to all, or even some, of the factors that you are allergic to. However, by following a careful program of environmental control, it is usually possible to at least substantially reduce exposure to most of them. The following examples provide a guide to the sort of environmental control that can be achieved by most patients with asthma.

### Dust mites

One of the common allergies that patients with asthma have is to household dust mites, which are small parasites that live off the dead skin that we shed. Dust mites exist in house dust, and in warm places such as mattresses, comforters and pillows. The following measures can be effective in decreasing exposure to dust mites.

- The humidity at home, including the bedroom, should be kept below 50% because house dust mites require greater than 50% humidity to survive.
- Enclose mattress, box spring, pillow and comforter in mite-impermeable covers (available at most retail stores).
- Launder bed linen in hot (55°C) water once a week.
- Remove thick carpeting, where possible.

### Household pets

Pets (particularly cats) are a common source of allergies that can worsen asthma symptoms in many people. Although removal of the pet from the home is the most effective approach to reducing exposure, most families are unwilling to do this, but the following suggestions may help patients to reduce exposure to the family pet.

- Exclude the pet from the bedroom – certainly do not let the pet sleep on the bed.
- Use a high efficiency particulate air room cleaner, which is capable of removing over 90% of all pollen, animal dander, dust mites and smoke particles that pass through the air cleaner.
- Washing your pet may temporarily reduce the allergic factors released from their fur, but this should not be done by the person with asthma.

### Pollens

It may be necessary to avoid outside activities (including camping and gardening) during times of high pollen counts. Pollen counts are usually higher in the spring and summer, during hot, dry and/or windy weather, and between 04:00 and 10:00. Electronic air filters can reduce indoor pollen counts.

### Cigarette smoke

Several studies have reported an increased incidence of asthma in children whose mothers smoke. No smoking should be allowed at any time in the home of someone with asthma.

### Occupational exposures

Generally, if your asthma is definitely triggered by exposure to chemicals, fumes or particles at work, you should move from the area, and measures should be taken to reduce your allergen exposure; if necessary, this may require action by a union health representative or the local Ministry of Labour official. The topic of occupational asthma will be featured in a future “Information for Patients” page.

### Conclusion

Proper environmental control measures will allow you to avoid or minimize your exposure to factors that trigger your asthma symptoms or flare-ups. This will result in fewer asthma symptoms, a reduced need for asthma medication and a better quality of life.

### **Sources of information on asthma treatment**

Several Web sites provide information on asthma treatment, including the following:

- Canadian Lung Association – [www.lung.ca/asthma](http://www.lung.ca/asthma)
  - American Academy of Allergy, Asthma & Immunology – [www.aaaai.org](http://www.aaaai.org)
  - British Lung Foundation – [www.lunguk.org](http://www.lunguk.org)
  - American Lung Association – [www.lungusa.org/asthma](http://www.lungusa.org/asthma)
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