

## The Indoor Environment & Asthma

### This factfile covers:

- What triggers are present in the indoor environment?
- Can any products reduce asthma symptoms?
- What types of product are available and how are they likely to help?
- Where can I get more information?

Making your home environment asthma-friendly is an important part in making sure your asthma is well controlled.

### What triggers are present in the indoor environment?

#### House-dust mites

Many people with asthma are sensitive to the droppings of house-dust mites. These are tiny creatures that live in the dust that builds up around the house – in carpets, bedding, soft furnishings and soft toys. If you know house-dust mites trigger your asthma, you may be able to reduce some symptoms by following all the recommendations below:

- Use complete barrier covering systems on your mattress, duvet and pillow.
- Remove all carpets and replace with hard flooring.
- Vacuum all areas frequently. Use a vacuum cleaner that has good suction and a filtered exhaust that does not scatter dust. Change and replace the filter bag of the vacuum cleaner regularly. Damp dust all surfaces or use an attachment on your vacuum cleaner
- Remove all soft toys from beds. Put them in a bag in the freezer for a minimum of six hours every one to two weeks to kill house-dust mites.
- Hot wash (at 60°C) sheets, duvet covers and pillowcases once a week. Although some people are allergic to feathers there is no conclusive evidence to show that synthetic hypo-allergenic pillows are any better.
- Use a dehumidifier to dry the air, as this makes it more difficult for the house-dust mites to survive.
- Ask someone else to vacuum while you stay out of the room. Remain out of the room for about two hours after to allow the dust to settle.

#### Carpets and furnishings

- Furniture, flooring and shelving made from chipboard or MDF may trigger asthma symptoms in some people. This is because it contains formaldehyde resin, which gives off a pungent, colourless gas that can irritate the airways.
- Carpets can also be a source of formaldehyde gas. If you are buying a new carpet you should ask the shop if they could unroll and air it before you bring it home.
- People who are allergic to latex should avoid carpet with a foam underlay.
- Some people report that their asthma is triggered by the smell of new sofas and soft furnishings. Try airing new furniture before bringing it into the house and keep the windows open for a few days.
- Those allergic to pets may continue to have symptoms for many months after a cat last lived in the house. This is because pet allergens can linger for a long time on furniture and in carpets and are very difficult to remove without resorting to a rigorous cleaning measure, such as steam cleaning. When moving house it is wise to check whether the previous homeowners had pets.



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### **Heating and cooking**

Dampness in housing has been linked with asthma in some people. Research has also shown that asthma symptoms were harder to control in people with homes without central heating. There is no type of heating that is best for everyone with asthma.

### **Wood and coal fires**

Wood and coal fires without adequate flues can cause mild worsening of breathing problems, compared with central heating. However, if the flues are fine, wood and coal fires are less house-dust mite friendly.

### **Cleaning, decorating, building work and repairs**

In everyday life a wide assortment of domestic products and solvents are used around the home, many of which release chemicals that can cause breathing difficulties in some people with asthma. These chemicals are known as volatile organic compounds (VOCs). Many household and DIY products such as cleaning fluids, varnishes, glues and paints contain VOCs.

#### **Cleaning**

Furniture polish, air fresheners, carpet cleaners, oven cleaners and dry-cleaned clothes can all trigger asthma because they contain VOCs.

- Use solid or liquid alternatives rather than sprays where possible.
- Use as little of the product as possible and open windows.

#### **Decorating**

There has been little medical research on the many chemicals used in renovating or decorating a home.

- Wet paint can cause problems as it gives off chemicals that can trigger asthma symptoms in some people. There is no one type of paint that can be guaranteed as safe for everyone with asthma.
- New low-odour, water-based gloss paints are now available that may be slightly better for some people with asthma. These paints are available at most large DIY outlets and manufacturers' details can be obtained by contacting the Paintmakers Association.
- Stripping wallpaper can unsettle dust so wash down wallpaper before starting as this may help to dampen down the dust. Ensure there is plenty of ventilation.
- Some people prefer to wear a mask during decorating and even during everyday cleaning, but no special masks have been shown in trials to reduce symptoms.



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**Asthma UK does not endorse any specific products.**

### **Building work and repairs**

- There is a link between poor housing conditions and asthma. It is important to ensure that housing problems such as damp, poor ventilation and inadequate heating are resolved as quickly as possible.
- Major renovation or structural repair can cause a lot of dust and other irritant triggers. Problems can arise when treating a house for woodworm, damp and dry rot. You can also ask your local council's environmental health department for advice.
- Some insulation materials contain formalin and formaldehyde. It is important that the skin containing the insulation is not cracked, as this can leak fumes into the house. If you are having cavity wall insulation installed check with the builder or contractor exactly what they intend to use. Micafil is free of these chemicals.
- If you are contemplating any building work within your home it is worth seeing your doctor or nurse to check if a temporary increase in medicine is needed. Or you might like to consider staying with friends or family while the work is being carried out.

### **Can any products reduce asthma symptoms?**

There are many different types of products that claim to prevent or relieve asthma symptoms in the home. Asthma UK does not endorse any specific products. This is because we base our advice on objective scientific research. For the vast majority of products no such research exists.

Research in sales literature that claims certain products are successful at completing specific tasks (eg removing allergens) will have often been conducted by the manufacturer and should be treated with caution. Although it can be shown that a product can remove an allergen, this is not the same as showing that it reduces the frequency of symptoms in a person using it.

### **What types of products are available and how are they likely to help?**

#### **Vacuum cleaners**

- *Health Which?* magazine (December 1997) found that some 'ordinary' vacuum cleaners worked just as well as those with special filters. In general, it found upright vacuum cleaners performed better at picking up allergens than cylinder vacuum cleaners. On the other hand, cylinders were more efficient at cleaning up to the edges of the room. No single brand was found to be the clear winner in the survey.

#### **Bedding**

- Recent research has shown that barrier bedding on its own does not seem to reduce exposure to house-dust mites enough to improve asthma symptoms. They may reduce symptoms from house-dust mites if used in conjunction with all the measures outlined at the beginning of this factfile.



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If your house is in need of repair or you need to be re-housed because of your asthma see the Asthma UK factfile *Solving Housing Problems*.

### Ionisers

- Ionisers aim to clean the air through the use of electrostatic charges. Although there is some evidence that they reduce allergens, other research shows that they can increase symptoms such as night-time cough in children. Asthma UK does not recommend their use.

### Air filters

- Several studies have shown that modern air filters can capture allergens, but evidence that they are capable of reducing symptoms is less clear.
- Most studies that show any benefit at all suggest that air filters are only effective if used alongside other allergen control measures.
- If you are considering buying an air filter, check what type of allergens it can capture. Some allergens, such as cat allergens, attach themselves to very small dust particles that can pass through all but the finest filters.
- It is also important to clean and replace filters when necessary (as recommended by the manufacturer)

Many allergens are not airborne most of the time and attach themselves to carpets, bedding and soft furnishing. One study has shown that air filters only significantly reduced cat allergens in houses without carpets.

On the whole, air filters cannot be recommended on the basis of existing research.

### Ventilation

- Good ventilation benefits people with asthma. It reduces humidity, which reduces the number of house-dust mites and moulds. It also helps to disperse gases produced by heating and cooking.
- Opening the window generates a significant amount of air exchange.
- Free-standing fans or extractor fans that are placed so that they aid air flow to and from the outside environment, without blowing allergens around within the room may help.
- Air conditioning and ventilation in buildings with no windows is more controversial. Some researchers suggest that they merely re-circulate allergens and mould spores, especially if they are not properly ventilated. There is no need to have air conditioning in addition to windows and vents.

### Where can I get more information?

Paintmakers Association  
British Coatings Federation  
James House  
Bridge Street  
Leatherhead  
Surrey KT22 7EP  
01372 360660 (10am–12 noon and 2pm–3pm, Monday–Friday)



### **Asthma UK Adviceline**

Ask an asthma  
nurse specialist

**0800 121 62 44**

**[asthma.org.uk/adviceline](http://asthma.org.uk/adviceline)**

### **Asthma UK website**

Read the latest independent  
advice and news on asthma

**[asthma.org.uk](http://asthma.org.uk)**

### **Asthma UK publications**

Request booklets, factfiles  
and other materials with  
independent, specialist  
information on every  
aspect of asthma

**0800 121 62 55**

**[info@asthma.org.uk](mailto:info@asthma.org.uk)**

### **Asthma UK membership**

Become a member of  
Asthma UK and receive  
*Asthma Magazine* four times  
a year

**0800 121 62 55**

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