

Avoiding Indoor Allergens

What are the symptoms caused by indoor allergens?

Unlike seasonal rhinitis, symptoms can occur throughout the year although symptom severity may vary from day to day and is normally worse in winter, when the house is closed up and where there is poor ventilation. You may improve abroad in a hot or very cold but dry place.

What are the main causes of indoor allergies?

House Dust Mites

House dust mites is present in nearly all houses and are the most prevalent of all allergens, causing allergic reactions in 85% of asthmatic children. The warmth and humidity in homes is an ideal breeding environment for them. They cannot survive in extremely dry or cold conditions. Like most living creatures, they require warmth, food and water and, as they cannot drink, they need to absorb moisture through their skin. Our beds provide the ideal environment, with a supply of our shed skin cells (their food source), water from our sweat, expired breath, and warmth. They also find skin cells and other proteins to eat in carpets, upholstered furniture, fabrics and furry toys. The allergen which triggers the immune system is mainly in the mite droppings, which are very dry and fragment into fine particles. These become airborne and are easily inhaled deep into our airways and lungs. The particles settle quickly into the depths of our pillows, mattresses, upholstery and carpets.

Animal Allergens

Animal allergens are the next most frequent cause of allergic reactions. The allergen that triggers allergic responses to animals is found in their saliva, skin and urine. When the animal grooms, the allergen coats the skin, fur or feathers, and is spread by shed skin cells (dander) as well as by licking. The particle size of the allergen is extremely small and therefore easily airborne and breathed in, causing respiratory symptoms, itchy eyes, sneezing and skin irritation. Cat allergen, particularly, may be found on walls and ceilings many months, or even years, after the animal has left the house. It can also be found on the clothes and shoe soles of people with a cat, so is easily spread. Feathers are rarely a cause of allergy although the dust in feather pillows can be a cause of symptoms, as the mites can grow in them.

Parrots and other birds are another common cause of allergic reactions to their feathers. Any animals, insect or creature can be a cause of allergic reactions. Even fish are not always the solution, as there are many allergenic proteins in fish food granules, and moulds can flourish in the damp environment.

Mould Spores

Allergy to mould spores is quite common and is often overlooked. Molds are present all year long,

and grow outdoors and indoors. Moulds are ubiquitous and present indoors for most of the year. Indoor plants, old books, bathrooms, and damp areas are common sources of indoor mold growth. Mould also prefer damp, warmer environments so are particularly found in bathrooms, kitchens, on refrigerator door seals, shower curtains and particularly in houses that have obvious damp patches and black mould on window frames. Due to the high level of humidity, they are also found in our beds. The water reservoirs of dehumidifiers can be a breeding ground for moulds. Spores are sometimes hidden underneath wallpaper and commonly present in the soil of houseplants. Houses built in areas of underlying water, and in river valleys, are often damp. Dead leaves and farm areas are common sources for outdoor molds.

Symptoms from mould allergy may be better in hot, dry weather and become troublesome on damp, cloudy and misty days.

Identifying the Causal Allergen

Allergy sufferers are rarely offered allergen diagnosis or advice. Identifying the causal allergen is an important step in taking control of your allergy, allowing you to reduce exposure to those substances that trigger your symptoms.

You should be referred to an Allergy Specialist with a special interest in allergies, for diagnosis. Your levels of specific IgE will be tested by skin prick testing. This, together with clinical history, symptoms and examination will enable the specialist to correctly diagnose your condition and plan your future management.

Skin prick testing is a painless procedure in which one drop of each allergen is placed on the skin (usually on the lower inner arm), pricked with a specially designed lancet and blotted. If you are allergic to that substance, a small wheal of approximately 3-6mm, surrounded by an inflamed area, will appear within 15 minutes. This will itch for a short time before fading.

Controlling Indoor Allergens

Housedust mite allergens

Most efforts at controlling dust mites should be aimed at areas of the home where you spend most of your time and where dust mite load is greatest, i.e. bedrooms and living areas

- Use allergen-proof barrier covers on all mattresses, duvets and pillows. These should be breathable and should completely enclose the item. Buy products that have been tested to make sure that they prevent the escape of housedust mite allergen.
- Wash all bedding that is not encased in barrier cover (e.g. sheets, blankets) every week. Washing at 60 degrees or above will kill mites. Housedust mite allergen dissolves in water so washing at lower temperatures will wash the allergen away temporarily, but the mites will survive and produce more allergen after a while.

- If possible remove all carpeting in the bedroom. Vacuum hard floors regularly with a high-filtration vacuum cleaner.
- Remove all carpeting from concrete floors. Such floors trap moisture allowing dust mites and mould spores to thrive.
- Damp-wipe all surfaces each week (pelmet tops, window sills, tops of cupboards and so forth).
- Use light washable cotton curtains, and wash them frequently. Reduce unnecessary soft furnishings.
- Vacuum all surfaces of upholstered furniture at least twice a week.
- Washable stuffed toys should be washed as frequently and at the same temperature as bedding. Alternatively, if the toy cannot be washed at 60 degrees place it in a plastic bag in the freezer for at least 12 hours once a month and then wash at the recommended temperature.
- Reduce humidity by increasing ventilation. Use trickle-vents in double-glazing, or open windows. Use extract fans in bathrooms and kitchens.
- If necessary use a dehumidifier to keep indoor humidity under 50% (but over 30%)

Animal Allergens

If you have a proven allergy to your pets then the best advice is to remove them from your home. After your pets are removed you should do the following;

- Vacuum all surfaces to remove pet hair; also wash all walls and floors.
- Steam clean all carpets and upholstery. Run your heating or air conditioning system to help quickly dry these surfaces and prevent mite or mould growth.
- Wash all bedding and draperies, even if your pet was not directly in contact with them.

Reducing animal allergens

- Do not obtain any new pets.
- Animals should not be allowed in the living area and **never** in the bedroom.
- Wash cats and dogs 1-2 times a week.
- Groom dogs regularly outside.
- Wash all bedding and soft furnishings on which an animal has layed.
- Wash everything, including walls, if you have a cat.
- Allergic children should not play on carpets where animals have been

Mould Allergens

- Avoid damp basements, compost piles, fallen leaves, cut grass, barns and wooded areas - or wear a face mask if these places or things are unavoidable.
- Tackle any damp areas on walls (due to blocked / leaking gutters etc). Pay particular attention to walls behind kitchen units and cupboards; the lack of ventilation often means that excess mould grows in these areas. Tackle condensation.
- Use a dehumidifier to keep indoor humidity at 50% or less. Empty and clean the reservoir regularly
- When showering or cooking, keep internal doors closed to prevent damp air spreading through the house. Use extract fans and cooker hoods vented outside.
- Make sure that your tumble dryer is vented outside during use, or use a condenser-dryer. Try not to dry damp clothing indoors.
- Do not let food decay and clean and thoroughly dry problem areas such as refrigerator seals.
- Do not hang clothes in damp cupboards or pack clothes too tightly in wardrobes. Leave wardrobe doors ajar to ventilate the clothes
- Get rid of old foam pillows and mattresses.
- Strip wallpaper from damp walls.
- Keep houseplants to a minimum and change the soil regularly
- Do not use humidifiers.
- Avoid using paraffin heaters and bottled gas heaters - they generate large amounts of moisture

Other Considerations

- Allergic people may be likely to develop other allergies over time, so all allergy sufferers should follow these guidelines for allergen reduction.
- Inflammation & symptoms develop over a long time so benefit may not be immediate.
- Cigarette smoke makes all allergic conditions worse because of the aggravation of already inflamed skin and membranes. Nobody should smoke in the house of an allergy sufferer.
- Early exposure of babies to allergens and smoke is associated with later development of allergic disease.
- People with sensitive airways and skin should avoid all unnecessary chemicals, such as air fresheners and most commercial cleaning materials.
- Diagnosis by alternative methods is not recommended.

- Allergy test results should be interpreted by an allergy expert in conjunction with clinical history.

Recent evidence suggests that it is probably necessary to rigorously carry out several allergen avoidance measures in order to see an improvement in symptoms. Just doing one or two things half-heartedly may not make any difference.