

# Allergies and Asthma

An **allergy** is when someone has a bad reaction to something in the environment that other people can tolerate. We get allergies when our bodies defence system hurts us instead of protecting us.

Allergies are increasing in South Africa and across the world. Allergic diseases include asthma, hay fever or sinus, eczema, urticaria or hives, and others.

Allergens are the substances that may cause these reactions. Examples are pollens from trees, grasses and weeds, animal allergens from cats or dogs, house dust mites, insect parts and insect stings, food and food additives, fungal spores and even certain medicines (such as aspirin or penicillin).

We make contact with allergens by breathing, eating and touching them. Once in the body, the allergens encounter special cells of the body's immune system. They live in the areas of our bodies that are in contact with the outside world: the skin, nose, lungs, and digestive systems.

The surface of some allergy cells are covered with a substance called IgE (Immunoglobulin E) which detects the allergen. When the IgE and allergen meet, a series of complex reactions occur, causing allergic damage (especially swelling and inflammation).

Certain occupations carry an increased risk for adult asthmatics because of exposure to allergens. These include bakers, veterinary surgeons, spray painters and woodworkers (see "SA Workers Guide to Occupational Asthma").



## HOW IS THE DIAGNOSIS OF AN ALLERGY MADE?

To find out whether a person with asthma is allergic, your doctor will take a careful history. They may also do blood tests for allergies in general (an IgE level or a phadiotop test) or blood or skin prick tests for reactivity to specific allergens.

## WHAT CAN BE DONE ABOUT ALLERGIES AND ASTHMA?

People must avoid all things known to trigger their asthma. This may differ from person to person. Viral infections are the most common precipitants of acute asthmatic attacks in allergic people. Non-allergic triggers (such as cigarette smoke, or preservatives such as sulphur dioxide) are also common triggers. People with asthma should also know what they are allergic to. The common allergens include house-dust mites, dogs or cats, grasses, and cockroaches. A rarer trigger in very young children may be certain foods such as cow's milk (see "Risk factors for Asthma and Triggers for Asthma Attacks").

Your doctor will be able to provide you with excellent advice about avoidance programs.

# Allergies and Asthma

Printed guidelines are widely available through the Allergy Society of South Africa (<https://allsa.org/>) and you should request these from your doctor.

In addition to avoidance procedures, there are very effective medicines to treat asthma. In the vast majority of cases, people who have asthma are able to lead a normal, active, and happy life with full involvement in sport and all other activities (see “Keeping Asthma Under Control”).

## INDOOR ALLERGIES

The most common indoor allergens in South Africa are animal dander, moulds, house-dust mites, and cockroaches.

### Animal Dander

These are minute portions of saliva, skin or hair of cats, dogs, rabbits, hamsters or even mice! They are harmless in themselves but, unfortunately, they are strong allergens.

If you are allergic to these, contact with an allergen will result in an allergic reaction, asthma or hay fever. If you can avoid contact, you will get better. If you are allergic to animals, you should not own them and, if you visit friends who own pets, always take your reliever medication with you. If pets are already part of your family, you must try and keep them outdoors. In particular, keep them out of your bedroom and carpeted, upholstered living rooms, where their hair and fur may collect in large amounts. See that they are bathed and brushed regularly!



Vacuum carpets and curtains regularly. Clean floors with a damp cloth and clean air-conditioning ducts. Remember to take your allergy medicine 30 minutes prior to visiting a home with a pet.

Wash your hands after touching or feeding pets and wash pet and human bedding regularly in hot water (over 55°C).

### Mould

Moulds like dark, damp places. You will often see mould growing in showers and dank basements; look carefully and you may find them in pot plant soil, in mattresses, behind cupboards and under carpets laid on concrete floors. If you are allergic to moulds, they should be removed as far as possible and clothes and cupboards must be aired.

Remove visible mould by cleaning with bleach. Ensure adequate ventilation, including extractor fans. Seal leaks in bathrooms and roofs. Clean gutters and underfloor vents. Dry or remove wet carpets. Avoid compost heaps.

# Allergies and Asthma

## House-dust mites

These are microscopic, busy, innocuous creatures which live mainly in our mattresses, bedding, and in carpet dust. They love warm, humid settings. Hundreds can be found in just a pinch of house dust. They harmlessly feed off the scales of our skin which we shed continuously. However, not only are their body parts strong allergens, their minute droppings can also cause allergic sensitisation. Large amounts can cause serious allergic attacks. Mites grow more readily where humidity is high, so larger amounts are found in coastal regions and houses situated in humid areas.

If you are allergic to house-dust mites, you should try and reduce the amount in your home. You can decrease numbers by vacuuming with a special vacuum cleaner (with a HEPA filter), cleaning with damp cloths instead of feather dusting, and mopping instead of sweeping weekly. The most important thing is to cover mattresses and pillows with special mite-proof covers. Washing sheets and bedding in very hot water (over 55°C) also kills them. Avoid extra pillows and blankets or blankets that cannot be regularly washed. Fluffy toys should be removed or washed in a hot wash(55°C) on a weekly basis. Hot water kills mites and removes the allergen. Tumble dryers kills the mites but does not remove the allergen. Cold water does not kill the mites. Deep carpets should be removed. Consider blinds or washable curtains. Aim for a dry and well-ventilated home. Special mite sprays are available and may complement the measures outlined above. They should, however, not be used alone.



## Cockroaches

Did you know that cockroach eggs, droppings and bodies are all common allergens? If you are allergic to them and live in a house where cockroaches are found, they should be exterminated.

## OUTDOOR ALLERGENS

South Africa has one of the largest floral kingdoms in the world. All plants produce pollen at different times of the year and the levels of pollen in the air depend on the season and wind.

## Pollen

Not all pollens cause allergic symptoms. People with a pollen allergy will get asthma attacks when exposed to pollens. These patients typically present with seasonal asthma and hay fever, particularly in spring, when a particular grass, weed, or tree is flowering.

## Which pollens are important?

The pollens that are wind dispersed are often allergenic, whereas the sticky heavier pollens, produced by bright coloured flowers and dispersed by insects or birds, are often not allergenic. The grass pollens are by far the most important pollens. Because they are small, they are able to be breathed into the airways of the lungs. Because the grass flowering

# Allergies and Asthma

seasons in South Africa are very long (from August to April), grass allergic patients may have symptoms almost the whole year round. Tree pollens, by contrast, are released for short periods (usually only a few weeks in the year in early spring, i.e. August to September) and typically cause well defined seasonal asthma.



## How does one test for a pollen allergy?

Pollen allergies can be diagnosed the same way as indoor allergens, by either skin prick tests or by blood tests for IgE. These tests are very reliable for the identification of the grass, tree, or weed sensitive patient. It is important, however, that antihistamine medicines be discontinued a few days before skin tests are performed, since antihistamines can block the reaction of skin tests.

## What is the treatment for pollen allergies in asthmatics?

Avoidance is the most effective treatment strategy for a pollen allergy. Pollen allergens are difficult to avoid completely, but simple measures such as keeping windows closed, avoiding grass cuttings, and avoiding direct exposure to flowering trees or flowers, should be attempted.

Avoid going outdoors on windy days and after thunderstorms. Keep car windows closed. Wash face and hands or bathe after exposure to pollen. Dry bed linen indoors during pollen season. Wear a facemask or sun-glasses outdoors. Remove plants that are causing sensitivities.

## FOOD ALLERGENS

Foods, food additives and chemicals are not common triggers for asthma attacks. They rarely trigger asthma but may be part of a generalised reaction involving the gut and skin. If food or food additives are suspected as triggers for your asthma you need to be referred to an allergist.

Unless you have food allergies confirmed by a doctor, eliminating certain foods e.g. milk and wheat from your diet will unlikely improve your asthma.

**POLLEN EXPOSURE IS AN UNCOMMON TRIGGER FOR AN ASTHMA ATTACK BUT, IF ASTHMA IS TRIGGERED, THE TREATMENT IS THE SAME AS FOR ANY OTHER ASTHMA ATTACK.**

## Can allergies be cured?

Desensitisation to some allergens is safe and is recommended, if symptoms are predominantly those of hay fever. Pollen desensitisation for asthmatic subjects is a slightly more risky procedure and could induce an asthma attack. Some specialised allergy centres in South Africa will desensitise patients against pollens and house-dust mites.

Written by Dr Mike Levin (2012). Based on an original by Prof Eugene Weinberg, Dr Gloria Davis and Prof Paul Potter. Updated in 2019 by Dr Omolemo Kitchin.