Allergies

What is an allergy?

The human body has a complex immune system, which helps it to fight infection. When infection attacks the body, the immune system is triggered to produce antibodies. These antibodies have an individual key to fit each individual infection. This means that once the body has been exposed to a specific bacteria or virus it will always have a key to fit that infection. This protects the body from repeated infection from the same bacteria or virus.

Some people react in this way to non-infectious substances. The immune system can overreact to a substance that would normally be considered harmless, and this is known as an allergic response. The substance that causes the reaction is called an allergen and is usually a protein.

When the body first comes into contact with an allergen it becomes sensitised to it. The immune system will then memorise the allergen, and every time that the body comes into contact with it, an anti-body known as IgE will be produced, and an allergic response will be triggered.

Who gets allergies?

Some people are particularly sensitive to this type of reaction and their condition is known as atopy. They have an increased risk of diseases such as eczema, asthma and hay fever. These diseases can occur together or singly and at different stages of a person's life. Atopy runs in families, though not always in a direct parent to child line. A child who has one parent who has allergies has a 30% chance of developing an allergy. In a child who has both parents who have allergies there is a 60% chance of that child developing an allergy.

As well as a person's genetic make-up, their environment can also have an effect on whether or not they develop an allergy. There is some research to suggest that atopic babies born in the spring have a greater chance of developing hay fever. Also, Swedish people are more likely to be allergic to salmon, (they eat a lot of it) and Americans are more likely to have an allergic reaction to peanuts, due to the large amounts of peanut butter eaten in the United States. Exposure to cigarette smoke in the early years of life may also make allergies more likely.

Allergic reactions can also affect those who have no sign of atopic disease, such as those who have severe reactions to peanuts and bee stings. Some people also develop allergies to things within their environment that they come into contact with, such as nickel, medicines, ingredients within cosmetic products, and even 'natural' products such as latex. Sensitivities to these types of substances can build up very quickly and any skin reaction can spread to other parts of the body

What can cause an allergic response?

An allergic response can be triggered either by insects, such as bees and wasps that can inject their poison into the body, by foods such as peanuts, by medicines or by substances that actually come into contact with the skin. Allergens such as bee stings, peanuts and latex can case a very severe reaction in a small minority of people. This condition is known as anaphylaxis.

In a person who is atopic the most common allergens are dusts and foods. Dusts are inhaled into the lungs, foods are eaten and their proteins dissolve into the mucus membranes of the gut, lungs, nose or mouth. People can also have an allergic reaction to something that comes into direct contact with the skin. Some of the most common allergens, which act as a trigger for eczema, are listed below, however many different foods and substances can cause an allergic reaction.

- Dust
- Foods, dairy products, eggs, wheat, fish, shellfish, soya, peanuts and tree nuts
- House dust might droppings
- Animal dander (dead skin)
- Moulds
- Pollen

How do I find out if I have an allergy?

The first thing that a doctor will want to know is a detailed history. This may include any family history of allergy, the symptoms of the condition, how long the reaction lasted and in some cases what you do for a living. One of the best ways to determine whether you are experiencing an allergic reaction, and what may be causing it is to keep an accurate diary. This might include what you have eaten, where you have been, what the weather has been like and any specific changes in your environment or circumstances. You would also need to note whether the skin reaction was worse or better, whether it had spread and where the original reaction began. This does not apply to allergic reactions that are severe (anaphylaxis), and involve any swelling of the face or throat and any difficulty in breathing, as these types of reaction require immediate medical attention.

If a detailed history does not highlight the allergen, then further testing might be required. Your doctor can arrange for testing at your local hospital outpatient department. Most of these tests are also available privately, through a dermatologist or private clinic.

Patch testing

This type of testing is used for people who have skin reactions to allergens in their environment, such as metals, cosmetics and toiletries. The test is looking for a delayed reaction to an allergen.

The allergen, mixed with either paraffin or water, is placed on the skin, covered and then left for 48-72 hours. Several different allergens can be tested at once and the solutions are applied in strips, usually on a clear area of skin and usually on the person's back. Some of these strips can be related to occupation, for example, a hairdresser's, baker's and printer strip. Once the strips are removed the results are analysed. Some testing centres may look at the skin again after another 48 hours for any further reaction.

The skin prick test

This test, along with the RAST test, is used to discover whether a person is allergic to any of the airborne or food related allergens. It detects the amount of IgE anti-bodies produced in response to certain allergens. A small amount of an allergen, in solution, is placed on the surface of the skin and then the skin is pricked with a needle through the drop. This is generally done on the forearm or the back. After about 15 minutes the skin is then examined and if a raised red area is seen then this would generally show that a person is allergic to that particular substance. The reaction should only last for a couple of hours and then it will go down. This type of testing should be performed with a doctor present in case of a severe reaction. Most people can be tested in this way, though the tests can sometimes be more difficult to see in babies and children under the age of three, as it takes time for an antibody response to build up.

The RAST test

This stands for the Radioallergosorbent test. This test is a blood test that measures the amount of anti-body produced against specific allergens. The reactions are graded from 1 to 6, with 6 being the most positive. The different types of allergy testing can be very useful tools. However, none of the tests are 100% accurate and at times can give false results, particularly in young children. The person's skin type, where the tests are performed on the body, whether antihistamines have been taken previously and the quality of the tests themselves can all affect the results.

There are other types of testing available including analysis of hair samples and Vega testing. However, there is no evidence to suggest at the moment that these types of test are accurate at all and they should therefore be avoided.

Can allergies be prevented

Research seems to suggest that the earlier that a baby is exposed to allergens the more likely they are to develop atopic diseases such as eczema. It is now also thought that a baby can become sensitised to an allergen before they are born. Doctors now recommend that mothers breast feed their babies for the first few months of life. Whether it is the lack of the cow's milk protein present in formulas, or the protective properties of breast milk that make the difference is as yet unknown. If the mother has allergies herself, has another affected child, or is unable to breast feed her baby then either hydrolysed formula milks or soya milk can be tried. Your doctor or health visitor will be able to advise you. Breast-feeding will not give complete protection against a child developing allergies, but it will reduce the risks. If a child goes on to develop eczema, it is likely that the condition will be much less severe.

There is still no conclusive research to suggest that in most cases it would be helpful for a mother to change her diet to exclude the more common allergens, either during pregnancy, or whilst breast feeding. For those babies who are at very high risk of developing eczema, reducing or removing dairy products and eggs from the diet may be considered.

If a child is at great risk of developing allergies, then it is wise not to wean them until five months of age if possible. Weaning should be done with care and it is sensible to try and cut out the more common allergens, such as dairy products for at least a year and to avoid eggs and nuts for at least two years if possible. The best way to do this is by talking to a dietician.

Reducing allergens in the home environment during pregnancy and in the first years of a baby's life can also be helpful. Avoiding cigarette smoke and pets and reducing the numbers of the house dust mite in the early years of life is thought to reduce the risk of eczema

How can I treat my allergy?

Wherever possible, avoiding the allergen is usually the first step, and for many the only treatment necessary. In principle that sounds fairly easy, however in practice it can be more difficult to remove an allergen from the environment altogether. For example, a pet may be removed from the house (a sometimes difficult process in itself!) but the pet dander, or skin, which causes the allergic reaction, may still be present in the carpets, bedding and curtains throughout the house for a long time. f the allergen is something in the diet, then eliminating it can sometimes cause more problems than the allergy itself. Advice from a dietician should always be sought before changing a diet, particularly a child's, and following any strict diet can need a lot of careful thought. Any measures aimed at avoiding allergens may also need to be put into place at work and in schools, as well as in the home.

Many people have allergy problems with the house dust mite and it is sensible to use a thorough and regular cleaning routine in the home to cut down their numbers. If an allergy is mild, then treatment of the symptoms is usually enough.

For example, the use of a good skin care routine in the treatment of eczema is often enough to keep the condition under control. Antihistamines can be useful in hay fever and urticaria (a nettle rash type of allergic skin reaction). Antihistamines are sometimes used in a different way to help children with eczema to sleep. There is a wide range of different antihistamines available, many of which will not make you drowsy. These may help to ease the symptoms of allergy as well as allowing you to continue a normal life. In more severe cases of allergy, a steroid of some type may be needed. This can either be in the form of an application to the skin, a tablet, or an inhalation in the case of asthmatic medication. Steroids will dampen down the effects of the allergen, providing relief from a range of symptoms. In cases where a person has an anaphylactic reaction to a substance then they will require a special drug called adrenaline to carry with them at all times along with education on how and when to use it.

How can I treat my allergy?

Allergen immunotherapy switches off allergy. Although medications available for allergy are usually very effective, they do not cure people of allergies. Allergen immunotherapy is the closest thing we have for a cure for allergy, reducing the severity of symptoms and the need for medication for many allergy sufferers. Allergen immunotherapy involves the regular administration of gradually increasing doses of allergen extracts over a period of years. Immunotherapy can be given to patients as an injection or as tablets, sprays or drops under the tongue (sublingual).

Allergen immunotherapy changes the way the immune system reacts to allergens, by switching off allergy. The end result is that you become immune to the allergens, so that you can tolerate them with fewer or no symptoms. However, it is not a quick fix form of treatment. It usually requires at least 4-5 months before symptoms improve, sometimes longer, and you need to be committed to 3-5 years of treatment for it to work reduce the likelihood that your allergies will return. You also have to cooperate with your doctor to minimise the frequency of side effects.

Allergen immunotherapy is usually recommended for the treatment of potentially life threatening allergic reactions to stinging insects and is often recommended for treatment of allergic rhinitis and asthma when other treatments cause side effects or don't work and is only occasionally recommended for the treatment of atopic eczema as evidence of its effectiveness is limited, although recently published studies have shown good results in some patients. Evidence that food allergy can be controlled in this way is very limited, although research is ongoing.

The main disadvantage of this form of treatment is cost as more allergen needs to be swallowed than injected, resulting in the cost per allergen being more expensive than injected treatments. Some people also dislike the salty taste.

This information sheet is provided by the Eczema Association of Australasia Inc to give practical insights and help on eczema and its management for sufferers and carers. Information sheets are also part of our membership package.

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