Why am I allergic?
Could I avoid problems with allergy?
How can I prevent an allergic attack?
Will my children become allergic?
How can allergies be diagnosed?
What treatments are available?

The aim of this brochure is to try and answer as many of your questions as possible using simple, easy to understand language. You will also find practical tips helping to make everyday life easier.
The UCB Institute of Allergy is pleased to be able to assist allergic patients and their families by providing them with more information.

In the field of allergy, a successful outcome to treatment is clearly linked to a thorough understanding of the disease.

Your doctor can provide more precise and appropriate information about your specific case.

The UCB INSTITUTE OF ALLERGY

A division of UCB Pharma SA, The UCB Institute of Allergy (IOA) is an independent and non-profit organization, created in 1987 to combat allergy.

In response to the international increasing prevalence of this disease, the Institute’s objective is to implement all the resources necessary to raise awareness of allergy as a major health issue amongst the general public, patients, healthcare professionals and public authorities.

Under the supervision of a Scientific Advisory Board made up of eminent European specialists in the field of allergy, the IOA has initiated many actions. These aim to inform and improve education in the field of allergy, to improve prevention, to promote research, to analyze the current situation and to define key actions to be taken over the coming years. Moreover the IOA promotes cooperation between various allergy related organizations. The Institute is present throughout Europe with more than 20 national sections.

The Institute’s web site (www.theucbinstituteofallergy.com or www.ucbioa.com) and central membership library provide members with current relevant information and publications about allergy.

For the general public, schools and children, the IOA has produced videos, educational games and other informational material. The IOA also organizes and holds meetings, symposia, conferences and workshops.

As a result of these activities, The UCB Institute of Allergy hopes to forestall the sobering prediction of certain epidemiologists: In 30 year’s time, everyone may be allergic... Unless we act now!
Approximately one person in four suffers from allergic problems during his or her lifetime. Moreover, allergies are on the increase and it is estimated that by 2015 fifty per cent of us will be allergic. Scientific research into allergies is making progress, but still has a long way to go.

Allergy sufferers should be encouraged to ask questions which may include:
- Why am I allergic?
- What can I do to avoid allergic problems?
- How can I prevent attacks?
- Will I pass the allergy on to my children?
- How can I prevent this?
- How can allergies be diagnosed?
- What treatments are there?

In this pamphlet, we will try to answer as many of your questions as we can. We would also like to familiarize you with the concepts and vocabulary of allergology (the scientific study of allergy). We hope this information will help you look at your environment from a fresh perspective, help you understand the causes of your allergies and how best to minimize their effects.

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Our immune system has a good memory
From the very first time that our body comes into contact with a foreign substance (antigen), the immune system learns how to recognise it and also memorizes it. It then prepares a specific response for each antigen. Production of antibodies specifically designed to match and fight only a specific antigen is part of this targeted immune response.

It takes a little longer, days or even weeks, to get a complete immune response the first time an allergen is encountered. However, thanks to the immune system’s memory, every time the same antigen appears in the body, the immune system recognises it and rapidly responds. This is why someone suffering from hay fever might have come into contact with the allergen several times without having any symptoms but once the pollen allergen has been memorised by the immune system and the body’s defences set, the person will react every time he comes into contact with that type of pollen.

Sensitisation
Being sensitised means that the immune system has come into contact with an allergen; committed it to its memory; synthesised IgE antibodies against it and is ready to launch a defence reaction when the allergen reappears. The time it takes to become sensitised to an allergen varies from person to person (from a few days to several years). Until the IgE triggers the attack against the allergen, sensitised persons will have no symptoms when in contact with the allergen. Therefore sensitisation, which is the first step in developing allergy, occurs silently, without you knowing that it happened. What
is interesting is that some people stop at this phase and never develop allergy symptoms even following long term exposure to allergens at high concentrations. These people have positive allergy tests but no evident allergic disease and therefore are considered to be healthy but at a higher risk for developing allergy than people who do not have any sensitisation. The fact that positive IgE tests occur in individuals without clinical disease means that such tests should never be done in isolation but only as part of a consultation with someone who is trained in allergy.

**Atopy versus allergy**

Very often allergy sufferers are said to be atopic. So what does this mean? Is it the same thing as allergy? The answer is not simply yes or no.

*Atopy* is the *genetic predisposition* of an individual to produce high quantities of IgE in response to allergens in the environment (pollens, house dust mites, moulds, cat dander, foods etc). *Heredity* is very important in atopy i.e. you inherit this predisposition to produce IgE from your mother, your father, or maybe both. So atopy represents the background for sensitisation: only atopic people (those with genetic predisposition) develop sensitisation to one or more allergens. Atopy is silent; atopic people do not necessarily display symptoms when they come across allergens. A person might suspect that he or she could be atopic if they have relatives who suffer from allergies. The only way to identify atopy is through allergy tests which measure IgE for various allergens. So atopy is a condition for the development of allergy but is not itself allergy!

*Allergy*, in medical terms, means that the person develops symptoms upon contact with allergens to which he/she is sensitised. So you need to be atopic to become allergic but if you are atopic you will not necessarily progress to an allergic state (not all atopic people start developing allergy symptoms). It is not clear what causes atopic people to behave differently. It might be that some environmental factors added to atopy (the genetic predisposition to allergy) stimulate the progression towards allergy or, as suggested by some new research data, it might be that expressing allergy requires an atopic predisposition and also other inherited genetic factors not related to production of IgE.

**Heredity in allergy**

A child without a parent who suffers from allergy has a 15% chance of becoming allergic; if the mother is allergic the risk increases to 60% and if both parents are allergic the risk is 80%. However, sometimes allergies can jump a generation so the fact that none of your close relatives suffer from allergy doesn’t mean that you have no allergy genes.

**Pseudo-allergies**

In addition to allergic diseases there are the so called *pseudo-allergies*. These maladies have similar symptoms with allergies (i.e. skin rash, itching, sneezing, runny nose, coughing, wheezing etc.). The difference from a real allergy is that they are not caused by IgE. Very often pseudo-allergies occur in non-atopic people (there is no history of disease in their family).
Different kinds of allergies

How are allergies classified?

Allergies can manifest in a variety of ways and affect different organs. They are often classified according to the organ in which they produce symptoms: skin, respiratory tract (nose, bronchi, etc.), or by their causes: insect stings, foods, drugs.

- Respiratory allergies
- Eye allergies
- Food allergies
- Drug allergies
- Insect sting allergies
- Skin allergies and other skin reactions

Respiratory allergies

Allergy can affect the nose or the bronchi. Nasal allergy is called allergic rhinitis while bronchial allergy is termed allergic asthma.

Some causes of respiratory allergy

Respiratory allergy is usually caused by allergens present in the air we breathe – airborne or inhaled allergens. When inhaled, these allergens land on the lining of the nose or of the bronchi. In non-atopic people, this has no consequences. However, in atopic individuals (those in whom the immune system is genetically programmed to produce IgE against such allergens) when the allergens come into contact with the lining of the nose or the bronchi it triggers an allergic response that causes unpleasant symptoms.

Pollens

Pollen is the male seed of plants and trees. It is made up of tiny grains with a wide variety of shapes, depending on the plant species. Some pollen grains have prickles, others holes or slits. The average size is about 0.05 mm across which means that they are invisible to the naked eye. Pollen grains contain a large number of allergenic proteins.

Plants differ in the way they disperse the pollen in the air.

Anemophilous pollens have small, pale coloured flowers and are dispersed by the wind. These pollens are produced and released in high quantities and because they are dry and very light they can be carried by the wind over very long distances. This is why some people suffer from allergic reactions to the pollen of plants that do not grow in their immediate neighbourhood. This type of pollen is the most allergenic, simply because it is produced in high quantities and can stay suspended in the air for a long time, increasing the chances of a person being exposed to it. The main culprits for pollen allergy are anemophilous plants that fall into three families: graminaceae (grasses), trees and herbaceous plants (weeds).
Peak pollen periods occur at different times in different parts of the world. Below you can find a calendar showing the pollen seasons of most of Europe’s allergenic plants. The seasons indicated cover the pollination period all over Europe. You should be able to get a similar calendar for your country which would give you more accurate information about the pollen seasons where you live. This is the best way to plan your defence against allergic attacks.

### Entomophilous pollens

are dispersed by insects and birds that feed on flowers of the plants that produce them. To attract insects, entomophilous plants have brightly coloured, sweet-smelling flowers. They produce small quantities of heavy sticky pollens that will not float in the air. Due to this characteristic, the chances of coming into frequent contact with this kind of pollen is very low. Therefore, entomophilous pollens are rarely involved in allergy.

**Don’t give away your beautiful flowers**

With rare exceptions, people allergic to pollens can keep and grow ornamental flowers without danger. “Beautiful flowers” produce entomophilous (insect-carried) pollens which usually are not allergenic.

**Beware of honey!** It might contain pollen which could set off an allergic attack.
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Herbaceous plants (weeds)

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Cut down your attacks! Check the pollen calendar.
You should check the pollen calendar for your part of the world and, as much as possible, avoid being outdoors during the pollen season of plants to which you are allergic.

Remember:
- the peak pollen season may be delayed by a month or more but is also shorter in mountainous regions.
- in different regions of the world, the pollen season of a given plant may be different. Therefore if you travel, don’t forget to check the pollination seasons in the countries that you are visiting. If your trip coincides with the peak pollen season, you should try to delay your trip. If you must go, remember to take your drugs with you.

Mowing short grass that is not in flower is usually not harmful. However, cutting long grasses (such as those you can find in the meadows in summer) is one of the most harmful practices for anyone allergic to grass pollen.

It used to be believed that tree pollens, being relatively heavy would not travel very far. However, photos from space showing the tree pollen cloud from Denmark crossing the North Sea have clearly shown that this is not the case.

The concentration of pollen in the air is not constant throughout the pollen season: weather conditions can influence it very much. Pollen release is maximal in hot, dry weather and wind helps to disperse it. So, under these weather conditions, there is a high risk of being exposed to large amounts of pollen. Rain, on the other hand, washes pollen out of the air, reducing the risk of allergy.

Pollen allergy sufferers experience an allergic attack when the concentration of pollen in the air reaches or surpasses a certain threshold. This usually is within the range of 20-30 grains/m³ but varies according to the species in question. At the beginning of the pollen season the threshold concentration
The number of allergy sufferers has been rising steadily over the past century. Recent studies have suggested that people living in urban areas suffer more than those in rural areas because pollen combines with pollutants to become even more allergenic. Research has indicated that climate change is having an effect on the severity of attacks. Long periods of hot and dry weather cause plants to produce more protein which makes the pollen more allergenic.

Avoiding the triggering allergen is the oldest treatment strategy in allergy. In most cases, this will not cure your disease but it can limit the harm. With pollen (as well as with most allergens) complete avoidance is virtually impossible, but still we can reduce our contact with them.

**Some basic precautions**
- Avoid picnics or camping holidays during the high pollen season
- Take your holidays at the seaside, where there is less pollen
- During the pollen season, keep your car windows shut
- Keep your windows closed in the early morning if you live in a green area or the countryside and in the evening if you live in an urban area
- Sleep with your bedroom windows shut
- Stay indoors as much as possible during hot, dry, windy days
- Take your treatment before the season starts and use it regularly throughout, even on days when you have no symptoms - it works better that way

**Symptoms:** Allergy to pollen is expressed mainly as allergic rhinitis, allergic conjunctivitis and, more rarely, as asthma. Symptoms are usually confined to the pollen season.

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**Keys, hand bag, mobile phone, money and….ah yes, the pollen forecast!**

During the pollen season, always check the pollen forecast if you go for a walk, if you schedule a trip outdoors or a holiday. The Internet is probably the best source, but you can also find information in newspapers, on television or radio.

**Beware of Hay fever**

From The Times  
May 27, 2006  
Pollen surge that could get right up your nose  
By Lewis Smith, Environment Reporter

Hay fever sufferers were advised yesterday to prepare for the highest pollen count in living memory.

A combination of wet and warm weather in the past few weeks has provided ideal conditions for the grasses that make early summer a misery for the 12 million people in Britain who suffer from hay fever.

Pollination has been slightly delayed by the recent rain but the country’s 150 species of grass are expected to create high pollen counts next month.

Pollen counts of 50 grains per cubic meter are considered high, but, last year, levels of more than 900 grains were recorded. Next month’s count could exceed 1,000 grains.
It’s even worse than the mite itself
For a house dust mite, skin scales (shed skin cells) are big and tough and therefore difficult to digest. So they’ve learned a trick: they ingest the scale, wrap it in a membrane together with digestive enzymes and void it outside their bodies, letting the enzymes make it tender and easily digestible. When the skin scales become tender, the mites open these digestion cocoons and re-ingest the skin; this time they can digest it. It is in fact the digestive enzymes in this cocoon that people with mite allergy are allergic to.

Household dust
Quantities of household dust vary enormously depending on where the house is located, the climate, altitude, the time of the year, etc. They also vary with the type of house (a farm is different from a city flat) and even within the same house (e.g. between the bathroom and bedroom).
There is however one thing that never varies: household dust is a complex reservoir of allergens, the most important being the house dust mite. Other allergens found in dust include animal allergens, moulds, cockroach and food allergens.

House Dust Mites
Mites (or acarids) are tiny spider-like creatures, only about 0.3 millimetres long that live and feed on substances present in the dust. Being so small, they are invisible to the naked eye. Two species living in household dust are very important in respiratory allergies: Dermatophagoides pteronyssinus and Dermatophagoides farinae.
Dermatophagoides mites feed on human skin cells that are shed from the skin (hence their complicated Greek names dermato = skin, phagos = to eat). They are found mainly in bedding (pillows, mattresses, etc.) because this is where we lose the most skin cells (our skin rubs against the sheets). Feeding on shed skin is not enough for these mites. They also feed on a microscopic fungus (mould) which mainly grows on mattresses.

You are not alone
Remember, your bed and your bedroom are the most important house dust reservoirs in your home but there are many more mites in your bed than on your bedroom floor:
One gram of dust from a mattress contains between 2000 to 15000 of them!

House dust mite allergens cause symptoms all year round; they are perennial allergens. However, the concentration of house dust mites and mite allergens is highest during the spring and autumn when the weather conditions (warm and humid) are ideal for their breeding.
A fundamental rule – start with your bedroom

Tip

Air your bed every day; don’t make the bed as soon as you get up.

A cool and dry bedroom is hostile to mites (warm, dry air dries out mucous membranes which aggravates rhinitis and asthma symptoms). Use a dehumidifying device.

Encase the mattress, pillows and quilts in impermeable covers and wipe them with a damp cloth each time the bed is changed. Wash bedding and clothing in hot water every 1 – 2 weeks.

Put cuddly toys in the freezer overnight once per week.

Symptoms: allergy to house dust mites is expressed mainly as asthma and rhinitis. It can also cause allergic conjunctivitis and atopic dermatitis (eczema). Flare-ups usually happen just after the sufferer wakes-up. Symptoms tend to be worse in spring and autumn when the air is moist and warm.

Since mites cause the symptoms in mite allergy sufferers, elimination of them would seem to be a very useful approach for reducing symptoms. Unfortunately, it is extremely difficult to eradicate mites completely. However, it is possible to reduce the allergen levels to below the threshold that triggers symptoms. Creating a virtually “mite-free” house is not easy; it requires diligent measures and 100% commitment. Going just “half way” will probably have no effect on your symptoms.

Making a virtually “mite-free” house means identifying and eliminating any places where mites could lurk and grow. In addition to the strict measures applied to your bedroom, attention needs to be paid to the rest of the house, particularly to floors and carpets, soft furnishings, cushions and curtains.

• Replace fitted (wall-to-wall) carpets and rugs with vinyl or parquet flooring; you will eliminate an important allergen reservoir and it will be also easier to keep clean.

• Reduce the number of “dust collectors”: intricate or bulky decorations, heavy drapes, double curtains, tapestries, cushions, thick rugs, woollen throws and animal skins etc.

• Use a vacuum cleaner, fitted with a HEPA filter, frequently throughout the house. (Vacuuming, even with the most efficient machines, stirs the dust up in the air and it will take a few hours for it to settle down again. It is therefore recommended that mite allergy sufferers should be out of the house for at least two hours when the cleaning is done).

Moulds

Moulds (fungi) are also a source of inhaled allergens. Moulds can be found outdoors (on rotting vegetation and in damp places) as well as indoors (in areas with high humidity such as bathrooms, basements, damp walls etc. and in as food storage rooms or garbage containers; places where rotting may occur in humid conditions).

When they grow, fungi release spores; small, invisible seeds through which they reproduce. It is these spores that cause allergy. Warm temperatures (usually between 18 - 30°C) and high humidity (above 65%) are ideal growing conditions for most moulds.

As with pollens, release of mould spores depends on weather conditions. Different types of mould may require different atmospheric conditions for spore release: in some, it depends on presence of free water in the air thus being maximal when
it rains or during damp weather, whilst in others, dry windy conditions are the most favourable. Some fungi can release their spores during thunderstorms.

**Symptoms:** Mould allergy presents mainly as asthma but can also cause rhinitis or allergic conjunctivitis. Mould allergens are perennial (even though their concentration may show significant variations across the year); consequently, the symptoms usually last all year long but they may get worse during the periods when the weather conditions are favourable for mould growth.

### How to avoid moulds

**Around the house:**
- Frequently ventilate places where mildew tends to grow
- Ventilate closed spaces (bathroom, kitchen, laundry, cellar, attics)
- Inspect your walls regularly for mould marks and remove them immediately using bleach.
- Fix problems of dampness (seeping water, rising damp, etc.)
- Reduce or completely get rid of indoor plants, especially aquatic plants (moulds can grow on soil or plants)
- Remove humidifiers from radiators
- Clean and disinfect air conditioning systems regularly
- Don’t leave kitchen waste lying around
- Remember that houses that people seldom live in are often rich in moulds so thoroughly air your summer/holiday house before settling in

**Outside the house:**
- Don’t walk in wooded or highly vegetated areas after rain, when it’s foggy or in warm, moist windy weather
- Don’t touch bags of dead leaves, especially if collected several days before
- Don’t do gardening work, especially during the autumn
- Don’t mow the lawns or stay close to fresh cut grass from a lawn or meadow (usually there are plenty of moulds growing on grass)

### Allergy to animals

This allergy is very common today; especially in westernized countries where having domestic pets has become very common.

**Pets** are the main cause of animal allergy but some people can get sensitised to animals they come in contact with at work or at school. Most people think that the allergy is caused by animal fur. In fact, it is mainly animal secretions which contaminate the fur that are the allergenic substance. The most important sources of animal allergens are:

- Saliva (cat, dog, horse, etc)
- Urine (cat, dog, mice, guinea-pigs, rats, rabbits etc.)
- Serum (part of the blood – this is mainly important for people working in animal laboratories where they regularly come in contact with animal blood)
- Skin cells/scales
- Excrement (mainly in birds)

Exposure to animal allergens can occur through direct contact with animal fur or secretions or through breathing in particles of dust containing dried animal droppings.
**Cats** are more likely to provoke an allergic reaction than any other pet. The main allergenic component is their saliva. Due to cat’s habit of cleaning their fur by licking it, the allergen is spread on the fur and subsequently on the objects the cat comes into contact with (such as carpets, soft furniture, clothes of the person playing with them etc.). Cat owners can carry allergens on their clothes (so you can have allergy symptoms in their company even if they didn’t bring the cat with them). Cat allergens are also found in schools and offices.

**Dogs** are equally allergenic regardless whether they have long or short hair. So if you are allergic to dogs don’t consider swapping a long-haired dog for a short-haired one.

**Guinea-pigs and horses** have some of the most potent of all animal allergens. Other modern pets such as dwarf rabbits, ferrets, mice or rats also produce allergenic substances and are a frequent cause of allergy.

Bird allergy can be caused by birds’ secretions or excreta but also by some microscopic mites that live in their feathers.

**Symptoms:** allergy to animals is expressed mainly as asthma, rhinitis and conjunctivitis. Less often, animal allergens may cause eczema or contact urticaria or even anaphylaxis.

The initial treatment is to try to avoid the allergen. Unlike other kind of allergies, complete allergen avoidance can be achieved if the animal is removed from the house. This can be an emotionally difficult decision. However, you must realise that the choice is between keeping your pet and preserving your health (if you keep your pet, your symptoms might worsen even if you follow the most potent anti-allergic treatment).

**Cat tracks**

Saliva droplets spread around the house by cats, dry into a very fine powder which can penetrate deeply into carpets, beds, sofas and chairs. This is why cat allergens continue to be present in the house many months after the cat has gone. Since this powder is very light it can be suspended in the air for very long time.

Removal of cat allergens requires thorough and repeated cleaning of all carpets and soft furniture.

If getting rid of your pet is impossible, you must keep it out of your bedroom and wash it regularly (weekly) to reduce the amount of allergen it produces.

**Allergic Rhinitis**

The term rhinitis defines diseases that are caused by an inflammation of the nasal membranes. In allergic rhinitis, this inflammation is the result of an allergic reaction triggered by airborne allergens landing on the lining of the nose during inhalation.

**No hay, no fever - so why hay fever?**

Allergic rhinitis caused by pollens is often known as *hay fever* which is a misnomer because in rhinitis there is no fever and the symptoms are not caused by hay but by grass pollens. It is therefore more correct to speak about allergic rhinitis or pollinosis.

**At what age?**

Typically, the onset of allergic rhinitis is between 8 - 35 years of age. However, today it’s becoming more common in younger children and in adults over 40.
The symptoms of allergic rhinitis

Allergic rhinitis attacks are characterised by outbursts of sneezing, itching of the nose, runny nose or nasal blockage. In prolonged attacks, the nasal mucosa becomes very swollen which makes breathing through the nose very difficult (sometimes even impossible). Some people also have headaches and an impaired sense of smell.

Not every sneeze is an allergy

Sneezing, nasal blockage or a runny nose can be protective reflexes and not necessarily a sign of allergy. When irritating substances enter the nose, we try to remove them by coating them with a watery mucus which drains them out (as watery secretion) or by violently expelling them (sneezing). Also, the nose becomes blocked to prevent nasal breathing and more irritant getting into the nose.

Common colds manifest through the same symptoms, but usually there is also a sore throat and sometimes fever. However, remember that a common cold rarely lasts longer than 1-2 weeks! However colds cause more problems in allergic patients, particularly if they are exposed to their allergen at the same time.

Some people can have symptoms for just a few days or weeks during the year (intermittent allergic rhinitis) either because they are exposed to the allergen for a short period of time (i.e. in case of pollen allergy) or because they have a mild form of the disease and the symptoms occur only when they come in contact with a high quantity of allergen. In others, the symptoms can be present all year round (persistent allergic rhinitis) particularly in people suffering from allergy to perennial allergens (such as house dust mites, animal allergens etc.).

In both situations the symptoms can be mild, causing almost no problems, or very severe, with effects on breathing and many other aspects of a person’s life.

By affecting breathing, which is a vital function, allergic rhinitis can have a negative impact on the functioning of the whole body. Very often people suffering from allergic rhinitis complain of sleep disturbances (disturbed breathing causes troubled sleep) which makes them feel tired during the day and unable to concentrate properly.

Rhinitis is very often associated with asthma, sinusitis and otitis.

Up to 50% of people with allergic rhinitis also have asthma.

Very often, people say that when their allergic rhinitis is bad, their asthma gets worse. If you suffer from one of these conditions and they don’t get better despite the fact that you are following your treatment, it might be because your rhinitis is not being treated properly. If this could be the case, it’s time to pay a visit to your doctor.

Practical advice for rhinitis sufferers

- Try to stay away from the allergens that cause your problems as much as possible.
- Avoid irritant substances such as tobacco smoke, strong perfumes or chemical fumes, especially during rhinitis flare-ups.

Irritants don’t cause allergy but they do make it worse

Irritant substances make rhinitis symptoms (particularly nasal blockage) worse. This is because they are toxic and when
breathed in they cause inflammation of the nasal membranes. This happens in all people, but in allergic rhinitis it adds to the inflammation caused by the allergen making it more severe.

- Regardless of the severity of allergic rhinitis symptoms, consult a doctor. Untreated mild rhinitis will probably get worse.
- If you want to feel well, take your treatment every day and for as long as your doctor has recommended.

**Rhinitis doesn’t go away in just one week**
Although your drugs may provide instant relief you still need weeks of treatment to manage your condition properly. Your symptoms will quickly return if you stop the treatment too early.

- Make sure that you know how to administer your medication correctly.

**Allergic asthma**
Asthma is a disease characterised by intermittent narrowing of the airways (bronchi) which makes breathing difficult. Asthmatic bronchi have two specific features:

- A general over-sensitivity (bronchial hyperreactivity); probably genetic in origin, that makes them prone to narrowing.
- An inflammation usually caused by airborne allergens. Usually allergic inflammation worsens the bronchial hyperreactivity making the bronchi even more sensitive to narrowing.

Constriction of the bronchi (that causes asthma attacks) can be provoked by a large variety of factors.

**Specific factors**
True allergic asthma results from bronchial hyperreactivity plus allergic hypersensitivity. Allergens are the specific triggers of allergic asthma attacks, the most common being inhaled allergens such as house dust mites, animal allergens, moulds and pollens. Chemical substances which cause allergy at the work place can also be a cause of allergic asthma. However, asthma attacks can also occur in people allergic to foods, insect venoms or drugs (in these cases, allergens do not reach the bronchi from the outside but through the blood that irrigates them).

**Non-specific factors**
All asthmatics have bronchial hyperreactivity but not all asthmatics are allergic. Bronchial hyperreactivity also occurs in rhinitis patients who do not have asthma. Non-specific factors can trigger asthma attacks in all people with asthma, however, allergens can only trigger attacks in those with allergic asthma.

Non-specific factors irritate the bronchi, causing their narrowing in people with hyperreactivity thus provoking an asthma attack. They are not allergens and they trigger bronchi narrowing via a different mechanism than the allergens do. The commonest non-specific irritants include cigarette smoke, car exhaust gases, industrial fumes, strong perfumes, cold air. In addition exercise, strong emotions and stress are also frequent triggers of asthma attacks.

**Common colds are never simple in asthma**
Viruses, i.e. those that cause common colds and flu, are one of the most frequent non-specific triggers of asthma attacks.
Symptoms of asthma

When an attack happens, the asthmatic bronchi become obstructed due to:

• **spasm**: involuntary contraction of the smooth muscles lining the bronchi
• **oedema**: swelling of the bronchi caused by accumulation of liquid in the bronchial mucous membrane
• **excessive mucus production**: accumulation of a thick, viscous phlegm in the bronchi
• **inflammation**: cells from the immune system accumulate in the airway lining, and pass into the sputum. They contribute to the stickiness of the sputum.

These factors narrow the bronchi, making it difficult for the air to pass through.

The symptoms experienced during an asthma attack reflect the changes in the bronchi:

The most important symptom is a difficult, hampered breathing, especially when breathing out, called **dyspnoea**. You may feel that you can’t empty your lungs properly when breathing out which seems to leave very little space for your next breath. The air passing through the narrowed bronchi makes a **wheezing** sound which very often is heard with every breath.

**Cough** is another symptom of asthma. It is the attempt your bronchi make to get rid of the phlegm excess. However, asthma cough is usually dry because the mucus is very thick and adherent to the bronchi walls. Cough is generally associated with dyspnoea and wheezing but in some people or in some situations it can be the only sign of asthma.

Practical advice for asthma sufferers

• Identify and avoid allergens and non-specific triggers that make you worse
• Make sure that you know which drug is for daily use and which for treating asthma attacks
• Work out an asthma management plan with your doctor and stick to it

**Did you get it right?**

The doctor will probably have given you two types of drugs: some used just to relieve the attacks and some that prevent the attacks if used all the time. The two drugs are completely different. If you use them in the wrong situation you will get no effect from them.

• Most asthma drugs are inhaled. Are you familiar with their use? Administering them in the wrong way is as bad as not taking them. Without a spacer device, only 10% of an inhalation reaches the bronchi, this can be doubled or tripled by adding a spacer.
• Don’t avoid doing sport! Rather than being discouraged, Sport can actually help your disease get better:
  • Sport helps development of the lungs which has have beneficial effects in asthma (particularly in asthmatic children)
  • Deep breathing reduces the spasm of the bronchi making them more elastic
  • Breathing through your nose filters, warms and humidifies air
before it reaches your lungs - if you have rhinitis make sure it is effectively treated.

Swim, run or play ball, but don’t forget 5 simple rules:

Rule 1: Always consult your doctor before deciding to practise any sport.

Rule 2: Which sport? Remember that you have to stay away from allergens. So don’t exercise in a place where allergens are abundant. Swimming in an indoor pool is an ideal choice for all allergic asthmatics, because there are no allergens and the warm, moist air is perfect for the bronchi. Moreover, swimming tones up the whole body and helps develop better breathing. But be careful: some swimming pools contain too much chlorine which could act as an irritant.

Rule 3: Help your bronchi to stay open! Take a dose of your bronchodilator drug before exercising (ask your doctor about the best timing and the best way to do it).

Rule 4: “Warm up” your bronchi: always start with a gentle effort and increase it progressively.

Rule 5: Pay attention to your warning signs! Stop immediately when you feel that an attack might occur and take another dose of your bronchodilator drug (or follow the attack management plan that your doctor has given to you).

Eye allergies

People with allergy to inhaled allergens can have also eye allergies called allergic conjunctivitis.

Seasonal and perennial allergic conjunctivitis

These are the most common expression of eye allergy and are very often associated with allergic rhinitis. The symptoms can be very disturbing, but even when they are very severe and last for long periods of time they don’t cause permanent sight impairment. People with allergic conjunctivitis have red, itchy and watery eyes and swollen eye lids; some people are also sensitive to light.
Seasonal allergic conjunctivitis is caused mainly by pollens but moulds can also be a trigger. Symptoms occur only when the allergens are present in the air and are absent for the rest of the year. They are usually more severe than in perennial allergic conjunctivitis which can be milder but last more or less all year round because is caused by perennial allergens such as house dust mites or animal allergens.

Practical advice for allergic conjunctivitis sufferers
• Stay away from the allergens that cause your problem.
• Avoid eye irritants.
• Take your treatment every day and for as long as your doctor has recommended.
• If you have conjunctivitis caused by contact lenses, replace your contact lenses with glasses. Your symptoms might get better when using new contact lenses but as they age the symptoms will worsen again.
Other types of eye allergy

Other types of eye allergy can have more severe outcomes, with permanent sight impairment. Luckily these are rare. Symptoms are usually more severe: there is marked itching, intense redness of the eye, stringy eye secretions that make the eyes sticky especially in the morning and sometimes, eye pain. The vision is often blurred and people complain of a sensation of sand in the eyes. The inflammation is so severe that it often causes erosions of the eye lining. These wounds eventually heal with scarring which is responsible for the sight loss or damage.

Vernal kerato-conjunctivitis

Vernal kerato-conjunctivitis (VKC or vernal catarrh) is one of these rare forms. It occurs mainly in children and young adults living in warmer climates. In Europe, it occurs mostly in the Mediterranean basin where it seems to be associated with allergy to olive pollen. In most cases, the disease disappears after puberty but this does not mean that it should not be treated (left untreated it causes permanent sight problems in most people).

Atopic kerato-conjunctivitis

This is another rare and severe eye allergic condition which, unlike VKC, tends to last all life long. It occurs mostly in people with allergic eczema, especially when it involves the face and eye lids. Eye involvement is usually very severe and sight threatening.

Giant papillary conjunctivitis

This is another rare form of allergic conjunctivitis, occurring mainly in people wearing contact lenses (of any type). Other foreign bodies present in the eye (such as eye prostheses or surgical sutures) can also be the cause of the disease. If contact lenses are the cause, symptoms can occur after weeks, months or even years of wearing them. The eyes feel itchy, particularly when removing the lenses and you might notice that you tolerate the lenses less well than usual.

Food allergies and other food reactions

The term “food allergy” applies to immunological reactions characterised by production of IgE antibodies against food. Like other kind of allergies, these reactions are abnormal (because they are not caused by harmful components in the food) and occur only in individuals who have a genetic predisposition to react this way.

Food allergy results in a variety of symptoms: digestive (abdominal pain, vomiting or diarrhoea), cutaneous (urticaria, or just itchy or red skin), respiratory (difficulty in breathing that can be caused by swelling of the throat or larynx lining but also by narrowing of the bronchi), blood circulation related (variable drop in blood pressure, resulting in heart palpitations, dizziness, mental confusion of even loss of consciousness). In the most severe forms (anaphylactic attacks) respiration or the blood circulation can be extensively compromised, endangering life.

Symptoms may occur very quickly (within a few minutes) after eating the food or they can be delayed for a few hours. Usually, the more severe the reaction, the faster the onset.
Culprit foods

Cow’s milk

Allergy to cow’s milk is relatively common during the first two years of life. Cow’s milk contains various proteins capable of causing allergy. Also, cow’s milk is introduced into children’s diet at a very early age, when an immature digestion process (which fails to break the proteins into smaller, non-allergenic fractions) and immune system (which fails to distinguish properly between harmless and harmful substances) favour the development of an allergy.

Boiling the milk doesn’t help!
Milk proteins are resistant to heat and can still be very allergenic even after cooking

Luckily, most babies allergic to milk outgrow this problem by the age of 4-6 years, mainly due to a maturation of the immune and digestion processes.

Breast-feeding mothers should be careful with their diet
Some breast-fed children show signs of allergy after the first few feedings because mother’s milk may contain small quantities of cow’s milk allergens (if the mother is consuming cow’s milk). However, this is a very rare occurrence. The general rule still stands: Breast is best!

In the majority of cases, the signs of allergy appear only after the baby is weaned. It can manifest as digestive problem: vomiting, diarrhoea, abdominal cramping or in the form of atopic eczema.

Remember that infants cannot tell you when they are in pain. They cry instead, so if your child is restless and crying repeatedly after a meal containing milk think that there must be a reason behind his crying!

Treating allergy to cow’s milk consists of replacing it with substitutes such as a special hypo-allergenic milk formula. If your child is also allergic to these substitutes (which sometimes happens) many doctors suggest that you should use protein hydrolysates (proteins that have been broken down) which are much less allergenic than whole proteins.

Eggs

Eggs are also introduced into a child’s diet at an early stage and are another frequent cause of food allergy in infancy. Hypersensitivity to egg is often associated with an allergy to cow’s milk but may also occur by itself.
Most egg allergens are found in the egg white. However, egg yolk also contains allergenic proteins. Therefore if your child is allergic to egg you should avoid both.

Cooking eggs at high temperatures and for long time may destroy the allergens, making the egg allergen-free. However not all egg allergens are destroyed by heat and therefore some people cannot eat eggs, regardless of they way they are cooked.

Certain vaccines are prepared on chicken embryos and therefore people allergic to eggs fear that the vaccine could provoke acute allergic reactions in them. The vaccine can be tested on the skin in children with egg allergy. However, measles, mumps and rubella vaccines (which are prepared on cells derived from chick-embryos) contain no, or very small
amounts of egg allergen. Therefore, testing is not recommended unless the child has experienced severe anaphylactic reactions to egg (which, luckily, are very rare in children). Influenza vaccines contain higher quantities of egg allergens and therefore all children and people with documented allergy to eggs should be tested with the vaccine solution before administration of the vaccine.

Intolerance to milk and eggs decreases as a child grows, so as the child becomes older you may very cautiously try re-introducing foods which previously caused a reaction - but always consult your doctor first!

**Peanuts**

Peanuts are the most allergenic of all foods and a frequent cause of allergy not only in children but also in adults. Also, unlike most foods, peanut allergens are not destroyed by heat but rather become more potent. Therefore, roasted peanuts or crude peanut oil are even more allergenic than raw peanuts.

If you suffer from peanut allergy you must be very diligent in avoiding all foods containing peanuts or peanut products (such as dishes prepared with peanut oil). Remember that oriental restaurants frequently use peanut oil for cooking or in sauces. A quarter of peanut allergic individuals also react severely to lupine flour which is found in pastries, pizzas and some doughs.

Peanut allergy is often very severe, indeed it can manifest as anaphylaxis. Also, unlike milk and egg allergy, peanut allergy is life-long in most people.

**Fish**

Fish allergens are proteins found in their flesh. They are often common to different species of fish. However, some people are allergic only to a certain type of fish. As with peanut allergy, fish allergy is life-long in most people and can manifest as severe anaphylactic attacks. Fish allergens can be very potent. Sometimes allergic attacks can be triggered by minute traces of allergen such as those found in vapours from cooked fish.

**Shellfish**

Culprits: crustaceans (crabs, shrimps, prawns, lobsters, etc.), and bivalve molluscs (oysters, mussels, cockles, etc). Here too, these may be mono-allergies (to only one single species) or crossed-allergies (due to their presence in various species, e.g. shrimps and mussels). There is also cross reactivity with house dust mite allergens in some patients.

**Fruits, vegetables and nuts**

The principal culprits are apples, pears, stone fruits (cherries, apricots, peaches, etc.) and vegetables such as celery, parsley, tomatoes, etc. Handling and cutting up kiwi fruit can trigger generalised reactions in some sensitive people.

Hypersensitivity to fruits and vegetables is often related to an allergy to pollen. For example, 50% of people allergic to birch pollen are also allergic to apples. The allergens in fruit and vegetables are frequently, but not always, thermolabile, i.e. they are destroyed when cooked. This cross-reactivity is called the oral allergy syndrome (OAS). In Northern Europe OAS is usually
mild, involving itching and swelling of lips and tongue; however in Spain it can be severe and anaphylactic because a different set of molecules is recognised.

Some of the most severe reactions are to tree nuts such as walnuts, hazelnuts, almonds, and Brazil nuts. Even though peanuts are not part of the same family as tree nuts (they belong to legume or bean family), some 20% of people allergic to peanuts are also allergic to tree nuts. Also people with tree nut allergy can be allergic to peanuts. Therefore, it is advisable that if you are allergic to one type of nut you should avoid nuts altogether.

Remember that the most effective treatment of food allergy is to avoid eating the allergenic food. With some foods (such as cow’s milk and eggs) allergy may fade in time, so you might be able to safely eat them after a few years of avoidance. With other foods (such as peanuts, fish and shellfish) allergies are for life and you will never be able to eat that food again.

Never try to eat a food that once caused you an allergy without consulting your doctor.

Other food reactions

You have to be aware that foods can cause a wide array of unpleasant reactions and not all of them are allergies. For example some people cannot eat a certain food because their digestive system cannot process it (usually due to a lack of an enzyme involved in the digestion). This is called food intolerance. Generally intolerances are not related to the immune system. An example is milk intolerance which appears in people who lack the enzyme which breaks down the sugar in milk.

Sometimes the unpleasant symptoms are caused by the presence of a toxic substance in the food. This is called food poisoning. For example, sometimes ice-cream can be contaminated with staphylococci (a microbe). When eating the ice-cream the toxin produced by this bacteria causes nausea, vomiting, diarrhoea abdominal cramps and even fever. This can happen with other kind of foods as well.

Pseudo-allergies to food are another type of non-allergic food adverse reaction which mimics a food allergy. They are provoked by foods containing histamine or causing histamine release in the digestive tract. (Histamine is one of the most important substances released from the immune cells during the allergic response and responsible for many allergy symptoms).

Canned tuna or mackerel, for example, might contain high levels of histamine, directly triggering symptoms similar with an allergic reaction. Having such a reaction to tuna or mackerel doesn’t mean that you are actually allergic to their flesh. Eating them fresh would not cause any problems.

Other food products, such as certain food additives (colourings, preservatives, flavourings) may also trigger allergic or pseudo-allergic reactions. Amongst the 3000 or so commonly used food additives, the ones causing most frequent problems are:

Preservatives:
sulphites and derivatives: E 220-227
nitrites: E 249-252
benzoic acid and derivatives: E 210-219
sorbic acid
Antioxidants:  
butyl-hydroxyanisole: E 321  
butyl-hydroxytoluene: E 321

Colourings:  
tartrazine: E 102  
yellow-orange S: E 110  
azorubine: E 122  
amaranth: E 123  
cochineal red: E 124  
erythrosine: E 127  
brilliant black BN: E 151

Flavourings:  
glutamates: B 550-553

Even though the cause behind food intolerance, food poisoning and pseudoallergies to food is different from allergy, the primary therapeutic measure is the same: avoid eating the food. In some cases, the anomaly causing the disease may be cured so food avoidance may be temporary. However, in some cases this restriction is for ever. As with allergy, only your doctor can tell you if and when it is safe to reintroduce the food that caused the problem back into your diet.

Tip

Sometimes when the same allergic reaction occurs with a large number of drugs which are not chemically related the cause might be one of the inert compounds common to all the drugs.

It is not easy differentiate true drug-induced allergies from other undesirable effects or abnormal reactions caused by drugs:

- **Side effects** are unwanted effects of drugs which can be observed at normally recommended doses of many drugs. Examples of side effects include: old generation antihistamines making you drowsy; broad-spectrum antibiotics giving you diarrhoea.

- **Overdose effects** are toxic effects of drugs which only occur when the recommended dose is exceeded.

- **Intolerances** are side effects that occur in some people whose body is not capable of metabolising the drugs properly; consequently they cause abnormal reactions.

- **Pseudoallergies** manifest very similar symptoms to allergy except that they are not mediated by IgE. A typical pseudo-allergy is intolerance to aspirin and other painkillers which can cause asthma attacks, rhinitis or urticaria and localised swelling (angioedema). Unlike allergy, these attacks may occur the very first time you take the drug (thus ruling out sensitisation).

Allergy to drugs

Drug allergy was rare in the past when the use of medicines was relatively limited. However, in the last 50 years, a huge number of drugs have been developed and their consumption has increased tremendously. As a consequence, drug allergy is much more common today. Like all other allergic diseases, drug allergy is caused by an inappropriate reaction of the immune system to a chemical substance in the drug. The allergic response can be triggered by the drug itself but also by one of the compounds into which the drug is metabolised in the body (most drugs are metabolised).
In a drug allergy, there will always be IgE antibodies that react with the drug or its breakdown products (metabolites). IgE antibodies are absent in all other drug adverse reactions, including pseudoallergies.

**Common culprits**

Any drug can cause allergy. However, most drug allergic reactions are caused by a limited number of drugs.

**Penicillin and related antibiotics** (mainly ampicillin and amoxicillin and cephalosporins) are far and away the most common cause of drug allergy. These drugs have a similar chemical structure and, therefore, people allergic to one of them can sometimes react to the others. (For example people who developed an allergy to penicillin may have the same reaction when taking ampicillin).

Cross-reactivity between penicillin and other antibiotics from the same family is not always a rule. However, only your doctor can tell you if it is safe for you to take a related drug. Until he gives the verdict it is best to stay on the safe side and use a drug from another family.

Other drugs that cause allergy quite frequently are sulphonamides, anti-epileptic drugs, insulin, vaccines and allergens used for desensitisation.

Remember that all these drugs are safe in most of the people and will cause allergy only in those having a genetic predisposition that makes their immune system susceptible to react with the drugs. Unfortunately, so far, it is impossible to detect who is going to develop an allergy to drugs before the first episode takes place.

**Symptoms**

Most frequently, drug allergy manifests as skin rash or urticaria. However, in certain rare cases, medicines can bring about anaphylactic shock (very violent generalised allergic reaction involving vital organs such as airways, heart or blood circulation) which requires urgent medical treatment.

**Minimize your chances to have another drug allergic reaction**

If you remember ever having reacted badly to a particular medicine tell your doctor. **Don’t forget: your immune system has a good memory and will recognize the drug immediately, causing the same reaction!**

Our own memory sometimes lets us down. It is therefore good practice to keep a medical notebook and set down as much information as possible (which drug, which dose, which disease, which symptoms, other drugs you were taking in the same time, etc.).

**Don’t take drugs unless absolutely necessary!**

Ask about relations between drugs! If you have had a bad reaction to a medicine, always ask your doctor when he prescribes you a new treatment if the new drugs are related to the one you are allergic to. Drugs that have similarities in structure can sometimes cause similar reactions because of allergic cross-reactivity.
Allergy to insects

In nature, there are dozens of insects that can bite or sting. Victims will experience a small local reaction and transitory discomfort at the stinging site. Allergies to insect stings are mainly caused by insects from the Hymenoptera order which contains bees, bumblebees, wasps, blowflies and ants.

Bee stings

Bees are not naturally aggressive. They sting only when they feel threatened or when their nest or hive is in danger.

Bees feed on the nectar from flowers and, therefore, stings are more likely during spring and summer when they are out of their hive looking for food.

A bee’s stinger is barbed – a real miniature harpoon! - and cannot be withdrawn when the skin is penetrated. In the bee’s struggle to escape, the stinger, the venom sack and some of the digestive tract are torn from its body, so the bee dies.

Be careful! If you have been stung by a bee you have to remove the stinger very quickly otherwise all the venom left in the sack will drain into your skin. Be very gentle when you remove the stinger and make sure not to squeeze the venom sack. The best way is to use a thin object (i.e. a nail file or a knife) under the venom sack and move it around the stinger whilst trying to dislodge it.

Wasp stings

In contrast to bees, wasps (ordinary wasp and hornet) are naturally aggressive. They are particularly aggressive in the autumn, when their food runs out.

Wasp’s venom is more potent than that of bees. This is why allergic reactions to wasps are often more severe than those to bees.

Wasps feed on left over food, sweet fruits and drinks. Therefore, they build their nests close to human communities, sometimes in the roofs of houses.

A wasp’s stinger is smooth (non-barbed) and is not left in the skin when stinging. A wasp, therefore, can sting again and again.

Symptoms

After a bee or wasp sting, you will notice a small, itchy and painful bump, which rapidly disappears. This small local reaction is normal and is caused by toxic substances in the insect’s venom. This is not an allergy.

People predisposed to allergy can become sensitised to insect venoms and manifest allergic reactions when stung. Most of this group will only develop local allergic reactions. These are usually more severe than the non-allergic ones: painful swellings which often extend beyond the sting site, sometimes involving the whole limb if the sting was in the arm or the leg. These symptoms may last for a few days and sometimes require medical treatment.

In a few people (about half a per cent of the population) with allergy to insects, the sting will provoke a generalised reaction with a variety of consequences including some of the following:
• generalized itching
• urticaria anywhere on the body
• generalised cutaneous flushing
• difficulty in swallowing
• abdominal cramps and nausea
• increased heart rate
• difficulty in breathing - due to severe asthma or throat swelling
• a sudden feeling of weakness (a drop in blood pressure)
• panic
• collapse and unconsciousness

During an anaphylactic reaction to insect stings, vital body functions such as respiration and blood flow, can be put in danger. Therefore, these reactions can be life-threatening.

Anybody who has experienced an unusually strong sting reaction, or experienced generalised reactions must see an allergy specialist. The doctor will tell you if your reaction was allergic or not. This is vital because, if you are allergic, you may well react in the same way to a future sting.

It is not a rule that if you have had a bad, generalised reaction to one sting you will react in the same way when stung again. However, there is a 50% chance that you will (higher if you have had a very severe attack). Also, it does not follow that if you have had a localised reaction you will not develop generalised symptoms. The risk for this is higher in those who have had large local reactions.

Because the severity of a future reaction to a sting cannot be predicted, it is wise to be prepared with an emergency plan in case a bad reaction occurs. The doctor can teach you what to do in this situation and he can also prescribe for you the drugs which you should use to stop the development of a severe attack. Remember that these drugs must be with you all the time! You never know when or where you will be stung again!

Simple measures to follow in case of a sting
• Check if the stinger is left in the skin and remove it within 30 seconds, making sure that you don’t press the venom sack.
• If you feel that the reaction is generalizing use the epinephrine auto-injector immediately. (see chapter on anaphylaxis, p.61)
• Call the emergency services.
• Take 1-2 tablets of an antihistamine.
• Apply something cold on the sting (ice or cold water).
• If possible, place a tourniquet above the stinging site (remember to release the tourniquet for 3 minutes every 5 minute and don’t left it in place for more than 30 minutes).
• Lay down with your head lower than the feet.

If you have a severe allergy to insect stings, your doctor may consider that it may be appropriate for you to have a long-term desensitisation treatment (immunotherapy).

Around 95% of people with severe generalized allergic reactions to wasp stings and 85% of those with similar reactions to bee stings will no longer develop systemic symptoms to a new sting if treated with immunotherapy.
Even though immunotherapy is a very effective treatment, it is not without risk, the most serious of which is the possibility of anaphylaxis. Therefore, the decision to start this treatment must be considered very carefully with your allergy specialist.

**Precautions against insect stings**

- Prevent children from playing around tree trunks or stumps, garbage bins or in the attics of houses. They often house wasp nests.
- Do not walk barefoot in grass. Bees may be foraging on flowers and you may step on them. Also bumblebees live in nests in the ground.
- Do not eat sweet fruits or drink sweet drinks outside. They may attract insects.
- If you go for a picnic keep the food in tightly closed containers whenever possible.
- Don’t drink from glasses and cans that have been left open outside. Insects might have dropped in and there is a risk that you may swallow them.
- Don’t use strong perfumes and other cosmetics (particularly sweet smelling ones). Insects are instinctively attracted by them.
- Don’t wear brightly coloured, flower patterned clothing. Insects may mistake you for a flower!
- Don’t sunbathe if you are wet, sweaty or covered in suntan oil, which may attract insects.
- Stay calm when there is a bee or a wasp around.
- Check your car for bees or wasps before getting in.

**Skin Allergies and other skin reactions**

**Urticaria**

Urticaria is a common disease and the symptoms are familiar to most people: red, itchy swellings on the skin (wheals) which appear all of a sudden and disappear just as quickly, only to appear few hours or days later in another place on the body.

Urticaria seems simple, however, people suffering from it and the doctors treating them know how difficult it often is to deal with. There are many reasons for this:

- In fact urticaria is not one single disease but a group of diseases, all hiding under the same symptoms: itchy papules usually caused by local histamine release in the skin.
- Urticaria can have a multitude of causes, many of them obscure and often very difficult to identify.
- Additionally, once you have had an episode of urticaria your skin becomes sensitive and, therefore, factors that before had no harmful effect will now trigger symptoms.

**Acute** and **chronic spontaneous urticaria** are the most common forms of urticaria, with symptoms occurring “out of the blue” without an evident triggering factor (most people think it’s an allergy to food but in reality this is rarely the case). Some people experience urticaria when they rub or scratch their skin. This is called **dermographism** (in Greek this means “writing on the skin”). Other people develop urticaria symptoms when their skin is exposed to cold – **cold induced urticaria** – or when their body becomes heated, such as when they sunbathe or take a hot bath; this is called **cholinergic urticaria**.
Contrary to popular belief, urticaria is rarely caused by an allergy. In most cases urticaria is a false allergy i.e. it involves the same immune cells and the same events as allergy except the triggers do not act through the IgE antibodies but are activated directly by the immune system.

Acute urticaria may last from several hours up to six weeks. Most often it is caused by a viral infection (usually you get the infection first with urticaria following after a few days). Drugs such as penicillin and aspirin are another frequent cause. In children, allergy to milk and eggs can sometimes take the form of acute urticaria. However, in adults, food allergy is only rarely involved in urticaria.

Urticaria is called chronic if the symptoms last for longer than 6 weeks. Sometimes the symptoms can last for months or even years which is why people are more concerned with chronic urticaria than with acute urticaria.

Similar to acute urticaria, chronic urticaria is almost never caused by a true allergy. Most often it is caused by:

- chronic infections (of the throat, teeth, sinuses, lungs, stomach, intestines, kidneys etc)
- drugs
- pseudoallergens in foods - substances in foods which can trigger the same events and the release of the same substances as in allergy but without the need for IgE antibodies (the allergy antibodies) to mediate their action. Pseudo-food allergens can be preservatives, anti-oxidants, colorants and flavour enhancers in foods but also naturally occurring substances in fruits and vegetables (such as tomatoes, peppers, olives, nuts etc).

- abnormal antibodies that are directed against the immune cells and activate the same events as in allergy but in a IgE independent manner (these are also pseudo-allergic reactions).

In a number of cases the cause of urticaria cannot be identified – chronic idiopathic urticaria.

Food allergy is rarely a cause for spontaneous urticaria. On the other hand, pseudo-allergens in foods are commonly involved in urticaria, probably less often as an initial cause but very often as triggering factors.

The simplest way to prevent urticaria is to avoid the factors that cause it. However, finding out which is the initial cause or the triggers of urticaria can be a very difficult task, requiring a lot of time, many investigations and patience from both doctor and patient. Sometimes one can find the answer only after several attempts. Sometimes the cause can never be found, despite all efforts. Many sufferers can be helped by regular treatment, often with antihistamines.

Help your doctor to help you
If the cause of your symptoms is not evident you can keep a diary where every day you record the symptoms you have experienced, all the foods you have eaten (also all the drinks), the drugs you took, the places you have visited or the activities you were involved in.

Even if the cause of your problems is not found, a diet low in pseudo-allergenic foods and also avoidance of drugs known to cause pseudo-allergic reactions (such as aspirin and other painkillers) might be helpful. Talk to your doctor about this.
A two-week course of a pseudo-allergen free diet seems to prevent or improve the symptoms in more than half of patients with chronic urticaria.

**Angioedema**

Sometimes local swellings beneath the skin occur together with urticaria. These are sore rather than itchy, but are usually caused by the same process as urticaria and are rarely problematical.

Angioedema, occurring without any urticaria, can have several causes and needs investigation since occasionally the airway can be involved with difficulty in breathing. A common cause is a class of drug used to treat high blood pressure known as ACE inhibitors. If you have angioedema and are taking these you should stop them and consult your doctor immediately.

**Atopic eczema**

Atopic eczema (or atopic dermatitis) is an inflammatory disease of the skin that is very common in children, but can also affect adults.

Atopic eczema is very often the first manifestation of allergy in life. The symptoms may appear in the first weeks or months of life, but the usual onset is around the age of 6 months when child is weaned.

**Atopic eczema is not always atopic**

Very often, children with atopic eczema are also allergic, particularly to food allergens, or have allergies running in their families. However, sometimes eczema can occur in the absence of allergy. There appears to be a lack of “cement” between the skin cells, allowing external substances to penetrate and irritate the skin in both types.

In two out of three children with atopic eczema, it disappears or becomes very mild after the age of 6-10 years. In most children, food allergies to milk and eggs remit by the age of 6, although allergies to nuts and fish tend to persist.

A relationship was noticed between development of atopic eczema early in life and other allergic diseases (particularly asthma) in the following years. However, the relationship is complex. It appears that the risk of developing other allergic diseases later in life is higher in children who have persistent food allergy and develop allergy to inhaled allergens such as house dust mite, pollen or animal allergens.

**Atopic eczema can disappear, but dry skin is for ever!**

Usually children with atopic eczema have dry skin which is more irritable and seems more itchy than a normally hydrated skin.

People who have suffered from eczema as children, continue to have dry and sensitive skin even when the eczema symptoms have completely remitted. Their skin will need special attention with regular moisturizers for the rest of their lives.
Atopic eczema can present differently at different ages. Also acute and chronic eczema can have a different appearance. Sometimes urticaria precedes acute eczema.

The most constant and important symptom of atopic eczema is itching. This symptom seems to be associated with a dry skin and it is considered that the scratching it induces contributes to the other symptoms of acute eczema.

It’s not a bad child - it’s an itching child!
The itch in atopic dermatitis can be very severe and difficult to deal with. If your child is irritable and bad tempered it might be because his/her skin is itching too much. Also itch is often aggravated during the night, keeping your child awake and preventing him/her having a calm, refreshing sleep. This will make your child tired, irritable and may make them incapable of concentration during the day.

So before you lose your temper with your child, make sure that you have done everything you can to help him/her through his/her itchy problem.

During eczema flare-ups, the skin is extremely itchy becoming inflamed and red. Usually, small watery blisters develop on the affected areas. When scratched, the blisters break-open leaving the skin weepy and wet.

In areas of the skin which are chronically affected by eczema, the skin becomes thickened with skin marks more prominent in response to scratching.

Any part of the skin can be affected by eczema but some specific regions are typical at certain ages:
• In infants, the face and the scalp are primarily affected, but the rest of the body can also be involved. Characteristically the diaper (or nappy) area is spared.
• In older children and adults, facial eczema often becomes restricted to areas around the eyes and mouth. Also, the skin folds of the arms and legs (such as the arm fold, around the wrists, behind the knees) become typical sites of eczema involvement.

Eczema has an unpredictable evolution with periods of flare-up and periods of remission.

Sometimes the eczema can return after years of complete remission of symptoms.

External factors that irritate the skin can trigger the flare-ups or aggravate the course of the disease: heat or cold; soaps (particularly those that cause extensive skin drying); detergents, perspiration; chemical substances; and rough clothes that rub the skin (such as woollen clothes). Stress is also an important aggravating factor.

Treating eczema is not easy. The measures below can help you to control your eczema (they are additional measures to the treatment recommended by your doctor).
Every little helps

**Moisturize your skin** several times daily. Use a moisturizer specially developed for allergic skin or a non-perfumed moisturizer.
Avoid scratching your skin when itchy; tapping it is better. Also, wet dressings or a lukewarm shower may help.

**Bathing**
A 10 minute bath daily helps to hydrate your skin. Don’t make it longer or it will have the opposite effect!
You can add bath oil to the water.
Take lukewarm baths (hot water makes the eczema worse).
Avoid soap, use an alternative such as a water-based cream.
Dry the skin by pressing the towel gently against it, do not rub your skin.
Apply a moisturiser as soon as your skin is dry (ideally in the first 5 minutes after getting out of the bath).

**Clothing**
Don’t use clothes that make you sweat as perspiration irritates the skin.
Don’t wear woollen clothing directly on the skin as it is rough and irritates the skin.
Wear cotton underclothing (if possible with long sleeve and legs).
Wash new clothing before wearing it for the first time. It removes the irritant chemical substances which are used for treating the textile fibres (such as formaldehyde).
Use mild detergents, preferably in a liquid formulation without enzymes to wash your clothes.
Always give an extra rinse when you wash your clothes. Avoid fabric softeners.

Pyjamas containing silver can help to prevent skin infection which exacerbates eczema. These pyjamas are interwoven with threads of real silver, a substance which has been used since Egyptian times to fight infections.
Keep children’s nails short and consider using cotton mittens for babies who scratch at night.

**Leisure and eczema**
Swimming is a good sport (providing that you don’t stay in the water too long). Remember that chlorine in the water can irritate your skin. Therefore, wash thoroughly with mild soap and apply a moisturizer immediately after getting out of the swimming pool.
Sunbathing can be helpful. However, use high protection factor sunscreens to prevent sunburn. And don’t stay in the sun too long – it can accentuate the dryness of your skin and make you sweat.
Protect your skin from cold weather.
Try to reduce your stress. It can have miraculous effects!

Remember that the treatment of eczema is long term and the results you hope for do not come overnight. Don’t get disappointed too easily and don’t change your doctor every few days!

**Diet**
Don’t put your child on a restrictive diet unless you are certain that the eczema is triggered or aggravated by an allergy to a particular food. In this case, the allergenic food must be eliminated from the diet. But never take this decision alone; always discuss it with your doctor!
Contact eczema

Contact eczema is another form of skin reaction with symptoms that can be similar to atopic dermatitis: **redness, itch, blisters** that can break leaving **wet oozing lesions**, which in time become covered in dry crusts.

This form of eczema appears on the skin whenever it comes in contact with substances to which the person is sensitive. It is not caused by IgE but by sensitised cells and is slower in onset than other IgE-mediated allergic reactions such as rhinitis and asthma. A large number of products (called **contact allergens**) can cause this:

- **Metals**, particularly **nickel** (used in jewellery, eye glasses frames, zippers, buttons, hooks, etc) and **chromium** (used in cement, glues, paintings, plaster, leather tanning etc.)
- **Preservatives** and **fragrances** used in **cosmetics and personal hygiene products** (such as soaps, shampoos, deodorants, perfumes, even tooth paste); **hair dyes, nail polish** etc.
- **Cleaning products** and **detergents**
- **Fabric dyes** (especially those used for colouring synthetic materials) and **substances used to reduce cotton shrinkage**
- **Rubber ingredients** used in gloves, shoes, clothing, toys, medical devices, dentures etc.
- **Plants** such as poison ivy, poison oak, primrose, chrysanthemum, parsley leaves, daisy, dandelions etc.

With some plants, dermatitis can occur upon direct contact with the plant or even if you have been in its vicinity but without actually touching it. This is because some of the substances causing the reaction can become airborne.

- **Drugs**, usually those applied directly to the skin (such as antibiotics, of which **neomycin** is the most common, and local anaesthetic creams).

**Sometimes you get allergic contact dermatitis only if you are exposed to the contact allergen and to sunlight (UV light) at the same time – a condition called photocontact allergic dermatitis.** This is very often the case with plant contact dermatitis and drug dermatitis (drugs administered orally can also trigger this type of dermatitis). It is typical that in photocontact dermatitis, the symptoms are limited to the skin areas exposed to sun (most often the hands, face and neck).

Identifying the allergen causing your problem can sometimes be tricky as the presence of a certain substance in a final product is not always obvious and skin prick and blood tests for IgE are inappropriate. To identify the culprit, the doctor may carry out special tests called **patch tests**. These involve placing the suspected substance or product, on a small area of your skin, covering it with an occlusive bandage for 2-3 days and then examining the site for a rash. Resolution of the symptoms of contact dermatitis can take weeks. In most cases you will need to follow the medical treatment prescribed by an allergy specialist or dermatologist. In addition to the drug treatment, you may find applying **wet, cold dressings** on the red, blistering or itchy areas helps.
The best way to be symptom free – stay away from the allergens

- Try to completely avoid the allergen causing your symptoms.
- If you are allergic to nickel wear nickel-free jewellery, buttons, hooks and eyeglass frames.
- When walking in the garden, fields or forests wear gloves, long sleeves and long trousers to prevent coming in contact with plants. You cannot always identify the plant you are allergic to so it’s better to avoid contact with them altogether.
- If you are allergic to products that need to be handled always wear gloves when working with them.
- If you are allergic to preservatives in cosmetics, read the label carefully when buying a new product to make sure that it does not contain the substance to which you are allergic.
- Learn all the alternative names for the substance that causes your dermatitis.

Anaphylaxis

Anaphylaxis is the most dramatic expression of allergy. In an anaphylactic attack, symptoms may develop within minutes after coming into contact with the allergen and may rapidly become very severe, threatening vital body functions such as respiration and blood circulation.

Most anaphylactic attacks are triggered by food allergens, insect venoms, drugs and latex.

Exercise: good or bad?

Anaphylactic attacks can sometimes be triggered by physical effort. However, in some people these attacks occur only if the exercise is done after eating a particular food such as celery, wheat etc.

In a number of cases, the cause of the anaphylactic reaction remains obscure (idiopathic anaphylaxis).

Symptoms

The initial symptoms of an anaphylactic attack can be flushing, a sensation of warmth, redness or itchiness of the skin, urticaria which very often involves the whole body, nausea, vomiting or abdominal cramps.

Sometimes an anaphylactic attack can stop here. However, sometimes these symptoms are followed very quickly by more severe and truly dangerous ones:
• In some people, swelling of lining of the mouth, throat or larynx can cause problems with respiration. When the swelling is very severe it can even lead to asphyxia.
• Some people develop asthma attacks. Sometimes during these attacks there is such a marked narrowing of the bronchi that breathing becomes impossible.
• The substances released from the immune cells during an anaphylactic attack cause an enlargement of the blood vessels in the whole body. This causes a drop in the blood pressure which is usually felt as palpitations (caused when the heart increases its rate and force of beating to compensate for the fall in blood pressure and maintain the blood flow), sensation of light head or dizziness. If the blood vessels are very much enlarged (vascular collapse) even a great increase in heart rate cannot keep the blood pressure up to an acceptable minimum level. As a consequence, blood flow to the organs falls dramatically and they no longer receive enough oxygen. The person becomes more dizzy and confused and finally will become unconscious.

Breathing difficulties and vascular collapse are the two most common causes of death in anaphylaxis. If you have had such symptoms you must learn to identify the first signs of anaphylaxis (your doctor can tell you all about this) and you must always have the emergency kit prescribed by your doctor with you and know how to use it – it could save your life.

Anyone who has had an anaphylactic reaction should consult an allergy specialist without delay in order to find out what caused the reaction and what measures must be taken to prevent or to treat a future attack.

Keep your epinephrine auto-injector close by you
The most effective treatment in anaphylaxis is injected epinephrine (adrenaline). Pre-loaded auto-injectors with one or two shots are now available. They are very easy to use. Remember that if you had an anaphylactic attack you must always carry the self-injector with you. It is preferable to have two in-date injectors with you at all times.

The effects of epinephrine become visible very quickly (seconds to minutes) after injection. However, sometimes the anaphylaxis symptoms disappear quickly but they come back again after a few minutes. If this happens you must inject another dose of epinephrine and seek urgent medical help.

Let the doctor have the final word
If you have experienced an anaphylactic attack, you must see a doctor immediately. Even if you have used your epinephrine auto-injector and no longer have any symptoms you must go to the closest medical department. Only a doctor can fully evaluate the consequences of the attack and the possible need for further treatment.

Remember to ask the doctor for a new prescription for an epinephrine auto-injector to replace your emergency kit and, if possible, buy it as soon as you get out of the hospital.
Various measures can be taken to prevent the development of a new anaphylactic attack. These measures differ depending on the cause of the attack. Your doctor will certainly tell you more about this but if you need more information try the following web-sites:
www.theucbinstituteofallergy.com
or www.anaphylaxis.org.uk
or contact your local allergy organization.

**Jewellery and identity cards for those at risk of anaphylaxis**
If you have had an anaphylactic attack you should wear a medic-alert necklace or bracelet. Your doctor can tell you how you can get one (or alternatively you can find information on the internet).

You should also carry an allergy identity card in your wallet. You can download one from the web-site above and ask your doctor to fill it in for you.

Children at risk of anaphylaxis should have a written action plan with necessary medication available in a labelled box at school/nursery/child minder. All those who care for them need training in how and when to use the adrenaline.

Diagnosing allergy is not easy, so don’t try to do it yourself as you are likely to come to entirely the wrong conclusions. The task is best left to your doctor who has the experience to look at all the facts and come to the correct diagnosis.

When you visit your doctor, he will ask you many questions about your symptoms, your lifestyle and your personal and family history. So it helps to be prepared with your answers. To help you do this, here is a list of questions that your doctor may ask you. Think about them beforehand and write down the answers so you do not forget them.

- What are your symptoms?
- How frequent and how severe are your symptoms?
- How long have you had problems and do you have any other allergic diseases? If, for example, you go to see your doctor about allergic rhinitis (hay fever) he will want to know if you have any redness and itchiness in your eyes; signs of asthma, such as tightness of the chest; or any skin rashes. Allergy can appear in several places at the same time.
- Are your symptoms seasonal or do they occur all the year round? Are your symptoms worse when you are outside in the open air or when you are in the house? This will help your doctor establish what is causing your allergy.
- If your symptoms are seasonal, at what time or times of the year do you have problems?
• If your symptoms occur all the year round, at what time of day they are worst, in the morning when you wake up or later in the day? Also, your doctor may ask you if there is anything you know of in the home which triggers your symptoms.
• Your doctor may ask about your habits at home, particularly if you, or anyone else at home, smoke. You will be asked about contact with pets. You may also be asked if eating particular foods brings on your symptoms.
• You will be asked about your occupation and hobbies as there may be allergens associated with these activities that trigger your symptoms.
• Your doctor will want to know about any drugs you are taking that may cause your allergy.
• Is there a history of allergy, asthma, allergic rhinitis or eczema in your family? So ask your parents, brothers and sisters if they have ever had any of these problems. Also, ask your parents if you had skin rashes or signs of asthma when you were very young.
• Does the disease affect your lifestyle, such as your work (or school), leisure time or sleep? Allergies often disturb your sleep and make you feel tired in the morning.
• Have you had any previous treatment for your condition? If so, did it work, did it have side effects, did you continue with the treatment and did you have any concerns about it?

Tests

To identify the possible allergens which may be causing your problems, your doctor or allergist may perform some specific tests.

The most likely test is called a skin prick test (SPT). To do this, your doctor will place a small drop of allergen solution on your forearm and prick your skin through it with a small needle. This prick is not harmful at all. A positive reaction will be seen as a small papule (blister) surrounded a red area of skin at the site of injection. This response, which will tickle a little but not hurt, is called a “wheal and flare response». The response will be measured after 15 – 20 minutes and any response will disappear soon afterwards.

Alternatively, your doctor could take a small blood sample and send to a specialist laboratory to determine your sensitivity to a series of allergens. These tests are slower and much more expensive to perform and so are usually reserved for patients with skin problems which make it difficult to perform skin prick tests or for patients with a history of severe anaphylaxis in whom performing the test might cause a potentially dangerous severe reaction.

The skin prick test and the blood test for allergy are only used to confirm a diagnosis suggested by your history as many individuals without allergic disease show positive responses. This is why sending off a blood or hair sample yourself is not a good idea.

Your allergist may also perform some more specialised tests. These might include an inhalation provocation test for suspected asthma, patch tests for eczema or urticaria and oral food provocation tests for food allergy. Such tests should only be done by specialists.
Remember that you are not alone
One very important condition for the successful treatment of your condition is knowing your disease. Recognising the triggers and symptoms; knowing the situations that you should avoid or those you can benefit from and being familiar with all the treatment strategies allows you to control your disease rather than letting it control your life.

Patients’ associations exist in many countries and can help you in your daily battle. They organize educational meetings, camps, help lines etc. You can make friends and discover how people with the same disease as you have learned to overcome difficult situations. Ask your doctor for the names and the addresses of the associations in your area and take full advantage of the services they offer.

Allergen avoidance
Avoiding the allergen responsible for your problems is a very important therapeutic measure. In some cases, this can completely prevent your symptoms (i.e. in the case of food allergy, or contact dermatitis), but in most situations allergen avoidance is an additional measure to drug therapy. It is important to try to avoid allergens, as it reduces your symptoms and helps your drugs to work better and faster.

Saying good-bye to a pet can be very painful, especially for children. However, there is no doubt that your symptoms will not subside and sometimes will get worse if you are allergic to their allergens and decide to keep it. The choice is yours: your health or your pet.

Total allergen avoidance is rarely possible. It can be achieved with food allergens, animal allergens and some contact allergens. However, with airborne allergens such as house dust mites and pollens, total allergen avoidance is impossible. Nevertheless, with sustained efforts and dedication it is possible to significantly reduce allergen exposure and this will have positive impact on your symptoms.

Don’t be easily discouraged in your fight against allergens!
Sometimes it may take weeks or months of sustained effort to reduce allergen concentrations in your home. This is especially true for the animal allergens which form a very fine powder that can penetrate deeply into your carpets and soft furnishings. So if you don’t see immediate results don’t be discouraged into thinking that the measures you are taking are not effective!

It is not only allergens that need to be avoided.
Allergens are not the only factors that can trigger allergy flare-ups. Non-allergic triggers such as cigarette smoke, sudden changes of temperature, strenuous exercise or emotional stress can all prompt an attack. Therefore you must pay as much attention to them as you pay to the allergens.
Desensitisation (Immunotherapy)

This treatment aims to make your immune system tolerant to the allergen causing your problems. This would prevent you from developing allergy symptoms when you come into contact with the allergen in the environment after treatment.

To achieve this goal, progressively increasing amounts of the allergen proven to be responsible for your disease are given for long periods of time (usually 3 - 5 years). There are two ways in which the allergen solution can be administered: in subcutaneous injections or by placing drops under the tongue.

The effects of immunotherapy can be long lasting; sometimes for the whole of your life. In some people, immunotherapy treatment can result in complete resolution of symptoms, whilst in others it only reduces the intensity of the symptoms and the need for anti-allergic drugs.

Immunotherapy does not work in all allergic diseases. Also it is not effective for all allergens. It is a very effective treatment in people with allergy to bee or wasp venoms where it has been shown to prevent the systemic symptoms of anaphylaxis in 85 - 95% of patients. It has also been proven to be effective in allergic rhinitis, allergic conjunctivitis and in selected cases of asthma caused by pollens, house dust mites and animal dander.

When considering starting a treatment with immunotherapy, one has to balance its benefits versus its side effects. In very rare cases, immunotherapy can result in life-threatening reactions such as generalised severe allergic reactions (anaphylaxis) or severe asthma attacks (particularly in people suffering with asthma). Therefore, immunotherapy should only be undertaken on the advice of an allergy specialist and must be done under his close supervision.

Don’t be afraid to start immunotherapy
Life-threatening side effects of immunotherapy are extremely rare. The risk is minor if the treatment is appropriate and performed according to the rules.

Drug treatment

The therapeutic arsenal of the allergy specialist has enlarged greatly in the last twenty years. New drugs and delivery mechanisms have resulted in better and stronger therapeutic action with less unwanted side effects.

Anti-allergy drugs can be grouped into two categories:
- **Symptom relieving drugs** which are useful during acute allergic attacks. Examples of such drugs are antihistamines, useful for the treatment of allergic rhinitis or allergic conjunctivitis or episodes of urticaria, or bronchodilator medications that helps to reverse the narrowing of the bronchi during asthma attacks.
- **Disease controller drugs** which cannot relieve an acute flare-up of the disease but prevent acute exacerbations if administered regularly and for a longer period of time. A typical example of this type of drug are the corticosteroids. Controller drugs have strong anti-inflammatory properties and can calm down the immune conflict triggered in our body by contact with an allergen. These drugs take days or even weeks to become fully effective, this is why they cannot be used to treat the symptoms during acute flare-ups. However, as with
anything else in life there are exceptions: some anti-allergic drugs can be used both as symptom relievers and disease controllers. Antihistamines are such an example: they have an immediate relieving effect which makes them suitable for treatment of acute flares of allergic rhinitis, conjunctivitis or urticaria. However, if administered continuously for weeks or months, they can also reduce allergic inflammation and thus make the person less susceptible to develop an allergic attack. Antileukotrienes are also controller drugs which, when taken regularly, can improve asthma control.

A few simple rules for treating allergy successfully

• The first is that, if you are given drugs, you must take them!

• The second is to take them according to the doctor’s recommendations: don’t reduce the dose and don’t stop it too early.

• Learn which drug is used for which situation: don’t take controller drugs to relieve the symptoms of flare-ups - they won’t be of much help, if indeed any. Similarly, don’t take symptoms relievers such as bronchodilators for long periods of time; they will not prevent you from developing further attacks. Even worse, some of them might lose their potency for you.

• If you are using a drug that needs to be put directly into the nose or inhaled into the lung and it doesn’t seem to give any results, check to see if you are using the device correctly before discarding it as ineffective. This is a common source of treatment failure with intranasal or inhaled drugs. Also, check if you have followed doctor’s instructions regarding dosing and the frequency of daily administration.

• Whenever in doubt about a treatment, go back to your doctor and discuss your problems with him.

• Last, but not least: remember that allergies seem to be simple diseases but in fact are not. Therefore, even the best and most potent drug needs time to work. So don’t think that the treatment is no good just because you don’t feel 100% healthy the day after starting it!
We said in the beginning of this booklet that allergy is a disease with a strong hereditary component and that parents with allergy have a strong chance to transmit the disease to their children. It is normal, therefore, for people who have allergy to wonder whether there is anything they can do to prevent their children from developing the disease.

Many prevention strategies have been tested over the years: avoiding exposing new-borns, infants and children to inhaled allergens; prolonged breast feeding, prophylactic administration of drugs in children from high risk groups; and many others. Unfortunately, none of these measures has been proven to be effective and sometimes contradictory effects were obtained:

- In some studies, protecting newborn children from exposure to inhaled allergens resulted in an increase of allergic sensitisation to those allergens rather than a decrease.
- Some studies have shown that children at risk for allergy that grow up with a cat in the house do not become allergic to cats. So, maybe the advice should be: if you have a cat at the time your child is born, buy some more! It may make your child tolerant to cat allergens.
- Breast feeding was found to be protective for allergy in some studies and not in others. In fact, it seems that the effect of breast feeding on allergy depends on whether the mother is allergic or not and also on what the mother eats while pregnant and then during breast feeding.
- Use of probiotics has been shown to prevent allergy in some people but not in others.
- Rather than delaying the introduction of small amounts of animal proteins into the diet of an infant, it seems that eating larger quantities of them may have a preventative effect on allergy.
- Sensitisation to allergens, such as peanuts, may take place through skin lesions in atopic eczema patients, so products containing nut oils or arachid oil should be avoided.

This may sound disappointing. Does it mean that even if parents know that their children might be at risk they can’t do anything to prevent them becoming allergic? In fact the answer is that, in the last thirty years, we have made a huge step forward and learned many useful lessons about preventing allergy:

- We have learned that there is not a cure-all solution for preventing allergy. Different people with different risk factors require different advice and treatment. The best person to ask is your personal allergy specialist. He knows best what special circumstances apply to you and can advise you accordingly.
- Also we have learned that avoiding allergens might not work when applied as a general measure to all children at risk. And today we think that we have found the answer to this apparent paradox: it seems that the immune system of people predisposed to allergy has an unusual way of reacting to allergens: when present in very small quantities the immune system ignores them, when present in very high quantities the immune system becomes tolerant to them (it’s like saying, you’re too many; I can’t defeat you so I’ll have to learn to live with you). Between these extremes, the immune system causes an allergy. So it seems that we can prevent allergy in
two ways: drastically reduce the allergen levels or drastically increase them. Reaching the first goal is more difficult: the threshold between very little and medium exposure is not known for any allergen and, because complete avoidance is impossible with all inhaled allergens, a doctor will never know if by reducing the allergen levels he has got the child into the “very little exposure” range or he is still in the “medium exposure” range. Therefore, it seems that the last option has more chance of success. Seen through this perspective, the fact that children growing up with cats tend to become tolerant to them seems less odd. They are in the “very high” range of exposure and their immune system does not consider cat allergens as enemies.

Pay attention to details:
Avoiding allergen exposure in children at risk for allergy, but who do not have yet the disease, does not seem to prevent the disease. However, in a person who already suffers from an allergic disease, avoiding allergen is very important in preventing disease flare-ups. In this case you should strive to avoid the allergen as much as possible.

There is one aspect on which scientists unanimously agree: exposure to tobacco smoke is related to asthma development. And their recommendation is also unanimous: don’t smoke during pregnancy and don’t expose your child to tobacco smoke after birth.

There are a few more recommendations which you should follow during pregnancy and also apply them for your child for as long as possible:
• Eat freshly cooked food
• Eat plenty of fruits, vegetables and natural food products
• Reduce your intake of pre-packed food
• Encourage your child to do sports and spend time outdoors
• Try to reduce your level of stress

Simply put: try to go back to a more natural way of living!
Acarids: Small spiders (arachnids) of which certain species can be found in household dust and particularly in bed linen.
Aeroallergen: Inhaled allergen.
Allergen: A substance which can cause an allergic reaction (synonym: antigen).
Allergology: The science which studies allergies.
Anaphylaxis: General term indicating hypersensitivity (an allergic reaction by production of IgE; local or generalised, then called “anaphylactic shock”).
Antibodies: A specific substance which appears in blood or tissues when a foreign element (antigen) enters the body (synonym: immunoglobulin).
Antihistamine: A substance which blocks the action of histamine.
Asthma (bronchial): A respiratory illness characterised by dyspnoea (difficulty in breathing) accompanied by wheezing, coughing and other symptoms.
Atopy: A hereditary tendency to develop allergies (allergic rhinitis, allergic asthma, eczema).
Bronchodilator: A substance for dilating the bronchi (medicine used to treat asthma).
Bronchospasm: Sudden contraction of the bronchi (one of the symptoms of bronchial asthma).
Congestion: Excessive accumulation of blood in the vessels of an organ or tissue.
Conjunctivitis: Inflammation of the conjunctive tissue of the eye (may be connected with allergic factors).
Corticosteroid: Any of the hormones (including cortisone) secreted by the cortico-suprarenal gland. Drugs often used in the treatment of inflammation
Dermatitis: Inflammation of the skin.
Desensitisation: Treatment intended to reduce or suppress sensitivity of the body to an allergy (synonyms: hyposensitivity, immunotherapy, specific vaccination).

Dyspnoea: Hampered breathing (increased frequency and amplitude of respiratory motion together with a feeling of oppression and a sensation of anguish).
Eczema: A skin disease characterised by erythema (redness), pruritus (itching), desquamation (scaling).
Erythema: Redness of the skin due to congestion.
Graminaceae or graminaceous plants: Family of plants including cereals whose pollens are responsible for allergies.
Herbaceous: A group of plant families belonging neither to the graminaceae nor to trees.
Heredity: Transmission of characteristics by parents to their children (e.g. being prone to allergies).
Histamine: One of the chemical substances involved in the inflammatory reaction and which is responsible for certain allergic symptoms.
Hymenopteron: A group of insects (wasps, bees, ants).
Hypersensitivity: Excessive sensitivity to certain external factors (over-reaction by immune system causing allergic symptoms).
Bronchial hyperreactivity: Excessive reaction of the bronchi among asthmatics.
Hyposensitivity: See “desensitisation”.
IgE: Immunoglobulins E, a family of antibodies responsible for allergic reactions.
Immunity: Resistance of the body to external factors such as infections.
Immunoglobulin: See “antibodies”.
Immunotherapy: See “desensitisation”.
Inflammation: Group of local reactions in the presence of different agents (for example, allergies).
Intolerance: An abnormal reaction of the body to an “aggression” which most people would tolerate without any symptoms of illness.
Intradermal test: Skin test used to search for allergies.
Mildew: Filamentous microscopic fungi.
Mucus: Liquid secretion produced by the mucous glands.
Oedema: Infiltration of liquid into tissue (seen in the skin in the form of a painless swelling).
**Pimple or papule:** Lesion of the skin expressed by a small local bump.

**Patch test:** Skin test for diagnosing contact eczemas.

**Phototherapy:** Treatment of a disease with light (visible or invisible spectrum).

**Pollen:** Male semen of plants.

**Pollinosis:** An allergy to pollen (“hay fever”).

**Prick test:** Skin test used to search for an allergy.

**Provocation or challenge test:** A test used to reproduce the symptoms of allergic reactions in order to determine precisely the responsible allergen and assess the gravity of the symptoms.

**Prurigo:** Dermatosis (skin condition) characterised by an intense pruritus (itching) with pimples or rash.

**Pruritus:** Itching.

**Pseudo-allergy:** reaction with symptoms like those of an allergy but with different (non-immunological) causes.

**Rash:** A skin eruption.

**RAST:** A technique for detecting IgEs antibodies specifically involved in certain allergic reactions (diagnostic test).

**Allergic reactions:** Immunological reactions which cause allergic diseases.

**Rhinitis:** Inflammation of the nasal mucosa, also known as “coryza”.

**Sensitisation:** A mechanism by which the body becomes more sensitive to an agent (antigen) to which it was previously less sensitive.

**Serum:** A liquid part of the blood.

**Squama:** Lamella or tiny scales of skin which break off from the epidermis (surface).

**Urticaria:** Skin disease characterised by a pimply rash, also called “hives”.

**Vaccine:** Use of antigens to cause the body to produce antibodies (see “desensitisation”).