Food allergy

Introduction

Food allergy and intolerance myth buster

There is much in the media about food allergies and intolerances, but what is the difference? And can you tell fact from fiction?

Food allergy and intolerance myth buster

Food intolerance

A food intolerance is not the same as a food allergy.

People with a food intolerance may have digestive symptoms such as diarrhoea, bloating and stomach cramps.

This may be caused by difficulties digesting certain substances, such as lactose. However, no allergic reaction takes place.

Important differences between a food allergy and a food intolerance include:

The symptoms of a food intolerance usually only occur several hours after eating the food.

You need to eat a larger amount of food to trigger an intolerance than an allergy.

Unlike an allergy, a food intolerance is never life-threatening.

Oral allergy syndrome

A relatively common type of food allergy in adults is known as oral allergy syndrome.

This type of food allergy causes itching, tingling and swelling of the mouth, lips and /or throat.

Oral allergy syndrome is most commonly triggered by fresh fruit, vegetables and nuts.

Five facts about allergies

A food allergy is when the body's immune system reacts abnormally to specific foods.

Allergic reactions are often mild, but they can sometimes be very serious.

In children, common food allergies include being allergic to milk and eggs. In adults, allergies to fruits and vegetables are more common. Nut allergies, such as being allergic to peanut, are relatively common in both children and adults.

Symptoms of a food allergy can affect different areas of the body at the same time. Some common symptoms include:

an itchy sensation inside the mouth, throat or ears

raised itchy red skin rash (this is known as urticaria, hives or "nettle rash")

swelling of the face, around the eyes, lips, tongue and the roof of the mouth (this is known as angioedema)

Anaphylaxis

In the most serious cases, a person has a severe allergic reaction (anaphylaxis), which can be life-threatening.

If you suspect that somebody is experiencing the symptoms of anaphylaxis, such as breathing difficulties and swollen lips, immediately call 999 for an ambulance and tell the operator that you think the person has anaphylaxis.

What causes food allergies?

Food allergies are caused when the immune system (the body’s defence against infection) mistakenly treats proteins found in food as a threat to the body, when in fact they should be harmless.

It then releases a number of chemicals to prevent what it sees as an infection taking hold. It is these chemicals that cause the symptoms of an allergic reaction.

Any food could cause an allergic reaction, but there are certain foods that are responsible for most food allergies.

In children, the foods that most commonly cause an allergic reaction are:

milk

eggs

peanuts

tree nuts

fish

shellfish

The majority of children with a food allergy have a background of eczema (an allergic skin condition) during infancy. The worse their eczema is and the earlier it started, the more likely they are to have a food allergy.

In adults, the foods that most commonly cause an allergic reaction are:

some types of fruit such as apples, pears, kiwi fruit and peaches

some types of vegetables such as potatoes, carrots, celery and parsnip

crustaceans (shellfish), such as crab, lobster and prawns

tree nuts, such as walnuts, brazil nuts, almonds and pistachios

peanuts

fish

It is still uncertain why people develop allergies to food, although often people with a food allergy have other allergic conditions such as asthma, hay fever and eczema.

Types of food allergies

The most common type of food allergy is triggered by an antibody called immunoglobulin E. This is known as IgE-mediated food allergy and tends to cause rapid symptoms, often within seconds or minutes of exposure to certain foods. There is a greater risk of anaphylaxis with this type of allergy.

Allergic reactions not caused by immunoglobulin E (non IgE mediated food allergy) tend to cause symptoms hours or even days after exposure to certain foods. This type of allergy is often difficult to diagnose.

Treatment

There is no treatment to cure a food allergy. The best way of preventing an allergic reaction is to identify the type of food that causes the allergy and then avoid it in future.

However, avoid making any radical changes to your child's diet, such as cutting dairy products, without first consulting with your DOCTOR.

A type of medication called an antihistamine can help relieve the symptoms of a mild to moderate allergic reaction. A type of medication called adrenaline is an effective treatment for anaphylaxis.

People with a food allergy are often given a device, known as an auto-injector pen, which contains dosages of adrenaline that can be used in case of emergencies.

When to seek medical advice

If you suspect you or your child may have a food allergy, it's very important to ask for a professional diagnosis from your DOCTOR, who can refer you to an allergy clinic.

Many parents mistakenly assume their child has a food allergy when in fact their symptoms are due to a completely different condition.

There are commercial allergy-testing kits available but their use is not recommended. Many kits are based on unsound scientific principles and even if they are reliable, it is best to have the results interpreted by a health professional.

Who is affected

Most food allergies affect younger children aged under the age of three. It is estimated that around one child in every 14 children of this age has one or more food allergies.

Most children will "outgrow" food allergies to milk, eggs, soya and wheat by the time they start school.

Peanut allergies are usually more persistent. An estimated four out of five children with peanut allergies remain allergic to peanuts for the rest of their life.

Food allergies that develop during adulthood, or persist into adulthood, are likely to be lifelong allergies.

For reasons that are unclear, rates of food allergies have risen sharply in the last 20 years.

Symptoms of a food allergy

Some food allergies cause immediate symptoms whereas in others it takes much longer for symptoms to develop.

The most common type of allergic reaction to food is known as an IgE-mediated food allergy.

In this type of allergy the symptoms develop very quickly after eating the allergy-causing food (the allergen); typically within a few minutes or in some cases, seconds.

Symptoms include:

a raised red itchy skin rash (urticaria), which can affect just one part of the body, or alternatively, spread across the entire body – in some cases the skin can turn red and itchy but there is no raised rash

swelling of the face, around the eyes, lips, tongue or the roof of the mouth (angioedema)

feeling of narrowing in throat

change in voice (croaky or hoarse) due to swelling in voicebox

feeling dizzy and lightheaded

feeling sick

being sick

abdominal pain and spasms

diarrhoea

cold-like symptoms, such as sneezing, runny nose and nasal congestion

redness and irritation of the eyes (allergic conjunctivitis)

coughing

chest tightness

wheezing or shortness of breath

In some cases a severe food allergy (anaphylaxis) can be triggered after eating a certain food and then going on to exercise vigorously. This is known as food-dependent exercise-induced anaphylaxis.

A less common type of allergic reaction is known as an non IgE-mediated food allergy. In this type of allergy the symptoms take much longer to develop after eating the allergen; usually several hours or in some cases days.

Some symptoms match what you would expect to see in an allergic reaction, such as:

redness and itchiness of the skin (although not necessarily raised)

the skin becomes itchy, red, dry and cracked (atopic eczema)

Other symptoms can be much less obvious and easily mistaken as being caused by something other than an allergy. They include:

heartburn and indigestion that is caused by stomach acid leaking up out of the stomach (gastro-oesophageal reflux disease)

stools (poo) becoming much more frequent or loose (though not necessarily "full-blown" diarrhoea)

blood and mucus in the stools

in babies: excessive and inconsolable crying even though the baby is well-fed and doesn't need a nappy change (colic)

constipation

redness around the anus, rectum and genitals

unusually pale skin

failure to grow at the expected rate

Mixed reaction

Some children can have a mixed reaction where they experience both "IgE" symptoms, such as swelling, and "non-IgE" symptoms such as constipation.

This often happens to children who have a milk allergy.

Anaphylaxis

The symptoms of a severe anaphylactic reaction usually develop within a few minutes to an hour after exposure. They can be sudden and rapidly worsen.

Initial symptoms of anaphylaxis are often the same as above and can lead to:

a rapid heartbeat (tachycardia)

increasing breathing difficulties due to swelling and tightening of your neck

a sudden intense feeling of apprehension and fear (this has been described as a "sense of impending doom")

a sharp and sudden drop in your blood pressure, which can make you feel light-headed and confused

unconsciousness

Anaphylaxis is a medical emergency and, without prompt treatment can be life-threatening.

Dial immediately and ask for an ambulance with a paramedic if you think that you or someone you know is experiencing anaphylaxis.

Causes of a food allergy

A food allergy is caused when your immune system mistakenly treats harmless proteins found in certain foods as a threat to your health. It then releases a number of chemicals which triggers an allergic reaction.

The immune system

The immune system protects the body by producing specialised proteins called antibodies.

Antibodies identify potential threats to your body, such as bacteria and viruses. They then signal to your immune system to release chemicals to kill the threat and prevent the spread of infection.

In the most common type of food allergy a type of antibody known as immunoglobulin E (IgE) mistakenly targets a certain protein found in food as a threat to your body. IgE releases several chemicals, the most important being histamine.

Histamine

Histamine causes most of the typical symptoms that occur during an allergic reaction. For example, histamine:

causes small blood vessels to expand and the surrounding skin to swell

affects the nerves in the skin, which can cause the skin to feel itchy

increases the amount of mucus produced in your nose lining, causing local itching and burning

In most food allergies, the release of histamine is limited to certain parts of the body, such as your mouth, throat or skin.

In anaphylaxis, the immune system goes into overdrive and releases massive amounts of histamine into your blood. This causes the wide range of symptoms associated with anaphylaxis.

Non IgE-mediated food allergy

There is another type of food allergy known as an non-IgE-mediated food allergy.

In this type of allergic reaction the immune response is largely confined to the digestive system and skin, which can cause symptoms such as heartburn, indigestion and eczema. In babies, an non-IgE-mediated food allergy can also cause diarrhoea and reflux (stomach acid leaks up into the throat).

Foods

In children, the foods that most commonly cause an allergic reaction are:

eggs

milk: if a child has an allergy to cow's milk, they will also be likely to be allergic to all types of milk, such as goat’s milk, as well as infants' and follow-on formula milk

soya

wheat

peanuts

In adults, the foods that most commonly cause an allergic reaction are:

some types of fruit such as apples, pears,

kiwi fruit and peaches

some types of vegetables such as potatoes, carrots, celery and parsnip

crustaceans (shellfish), such as crab, lobster and prawns

tree nuts, such as walnuts, brazil nuts, almonds and pistachios

peanuts

fish

However, potentially any type of food can cause an allergy.

Allergic reactions have been reported in association with:

celery or celeriac: this can sometimes cause anaphylactic shock

gluten: a type of protein found in cereals

mustard

sesame seeds

fruit and vegetables: usually only cause symptoms affecting the mouth, lips and throat (oral allergy syndrome)

pine nuts (a type of seed)

meat: some people are allergic to just one meat, while others are allergic to a range of meats. A common symptom is skin irritation.

Food additives

Sulphites

Sulphur dioxide (E220) and other sulphites (E221, E222, E223, E224, E226, E227 and E228) are used as preservatives in a wide range of foods, especially soft drinks, sausages, burgers and dried fruit and vegetables.

Sulphur dioxide is produced naturally when wine and beer are made. It is often added to wine to stop it from continuing to ferment in the bottle. Usually, most of the 'head space' in a bottle of wine (the part of the bottle not filled with wine) is sulphur dioxide.

Anyone who has asthma may react to inhaling sulphur dioxide. A few people with asthma have had an attack after drinking acidic drinks containing sulphites, but this is not thought to be very common.

Benzoates

Benzoic acid (E210) and other benzoates (E211, E212, E213, E214, E215, E218 and E219) are used as food preservatives to prevent yeasts and moulds from growing, most commonly in soft drinks. They occur naturally in fruit and honey.

Benzoates could make the symptoms of asthma and eczema worse in children who already have these conditions.

Who is at risk?

Exactly what causes the immune system to mistake harmless proteins as a threat is unclear. However, a number of risk factors for food allergies have been identified, which are outlined below.

Family history

If you have a parent, brother or sister with an allergic disease, such as asthma, eczema or a food allergy, you are at a higher risk of developing a food allergy. However, you may not develop the same food allergy as your family members.

Other allergic conditions

Children who are born with other allergic conditions, such as asthma or atopic dermatitis (eczema, an allergic skin condition) are more likely to develop a food allergy.

The rise in food allergy cases

Another puzzling aspect of food allergies is that the number of cases has risen sharply over the past two decades. For example, the number of children admitted to hospital for food-related anaphylaxis has risen by seven-fold since 1990.

One theory is that the rise in cases is due to the changes in a typical child's diet that has occurred over the last 30 to 40 years.

Another theory is that children are increasingly growing up in "germ-free" environments. This means that their immune system may not receive sufficient early exposure to the germs it needs to develop properly. This is known as the hygiene hypothesis.

Diagnosing food allergy

Picture of skin prick testing

A skin prick test is usually the first test recommended by a doctor for a suspected allergy

If you think you or your child has a food allergy, make an appointment to visit your DOCTOR.

It is likely that your DOCTOR will ask you some questions about the pattern of your child's symptoms, such as:

How long did it take for the symptoms to start after exposure to the food?

How long did the symptoms last?

How severe were the symptoms?

Was this the first time your child has had these types of symptoms, and if not, how often have symptoms occurred?

What food was involved and how much of the food did your child eat?

They will also want to know about your child's medical history, such as:

Does your child have any other allergies or allergic conditions?

Is there a history of allergies in your family?

Was (or is) your child breastfed or bottle-fed?

Your DOCTOR may also asses your child's weight and size to make sure that they are growing at the expected rate.

If your DOCTOR suspects that you or your child has a food allergy, you may be referred to an allergy clinic or centre for testing.

If your child had symptoms that came on quickly (an IgE-mediated food allergy) then it is likely that they will be given what is known as a skin-prick test. The doctor may also want to give them a blood test.

If your child's symptoms developed more slowly (non-IgE-mediated food) then it is likely that they will be put on what is known as a food elimination diet.

More information on these types of test is given below.

Skin-prick testing

During a skin-prick test, drops of diluted foods are placed on the arm. The skin is then pierced, through the drop, using a small needle or pin to introduce the food drops to the system. Itching, redness and swelling would usually indicate a positive reaction. This is usually painless.

A skin-prick test does have a small chance of causing anaphylaxis, so testing should only be carried out where there are facilities available to deal with an anaphylactic reaction. This would usually be at an allergy clinic or centre, hospital or a larger DOCTOR surgery.

Blood test

An alternative to a skin-prick test is a blood test to measure the amount of allergic antibodies in the blood.

Food elimination diet

In a food elimination diet, the food suspected of causing the allergic reaction is withdrawn from your or your child's diet for two to six weeks. The food is then reintroduced into the diet.

If your child's symptoms go away when the food is withdrawn and then return once the food is introduced then this can normally confirm your child has a food allergy.

You should be given advice from a dietitian, before starting the diet, on issues such as:

the food and drinks you need to avoid

how you should interpret food labels

whether your child needs any alternative sources of nutrition

how long the diet should last

Do not attempt a food-elimination diet by yourself without discussing it with a qualified health professional.

Alternative tests

There are several shop-bought tests available which claim to detect allergies. They include:

Vega testing, which claims to be able to detect allergies by measuring changes in your electromagnetic field.

Kinesiology testing, which claims to be able to detect food allergies by studying your muscle responses.

Hair analysis, which claims to be able to detect food allergies by taking a sample of your hair and running a series of tests on it.

Alternative blood tests (leukocytotoxic tests), which claim to detect food allergies by checking for the "swelling of white blood cells".

Many alternative testing kits are expensive, the scientific principles they are alleged to be based on are unproven and independent tests have been found to be unreliable. They should therefore be avoided.

Living with a food allergy

The advice below is primarily written for parents of a child with a food allergy but much of it will also apply to you if you are an adult with a food allergy.

Your child’s diet

There is currently no cure for food allergies, although many children will grow out of them. The most effective way you can prevent symptoms is to remove the offending food (the allergen) from their diet.

However, it's important to check first with your DOCTOR or the doctor in charge of your child's care before eliminating certain foods.

If their allergy is to eggs or peanuts than removing either from them is not going to have much of an impact on their nutrition. Both types of food are a good source of protein but there are many other alternative sources of protein.

A milk allergy can have more of an impact as milk is a good source of calcium, but there are many other ways you can include calcium in your child's diet, such as green leafy vegetables.

Many foods and drinks are fortified with extra calcium.

If you are concerned that your child's allergy is affecting their growth and development then contact your DOCTOR for advice.

Reading labels

It is very important that you read the list of ingredients on the label of any pre-packed food or drinks your child has.

Under EU law, any pre-packed food or drink sold in the UK must clearly state on the label if it contains the following ingredients:

celery

cereals that contain gluten (including wheat, rye, barley and oats)

crustaceans (including prawns, crabs and lobsters)

eggs

fish

lupin (lupins are common garden plants and the seeds from some varieties are sometimes used to make flour)

milk

molluscs (including mussels and oysters)

mustard

tree nuts, such as almonds, hazelnuts, walnuts, brazil nuts, cashews, pecans, pistachios and macadamia nuts

peanuts

sesame seeds

soybeans

sulphur dioxide and sulphites (preservatives that are used in some foods and drinks) at levels above 10mg per kg or per litre

Some food manufacturers also choose to put allergy advice warning labels (for example, "contains nuts") on their pre-packed foods if they contain an ingredient that is known to commonly cause an allergic reaction, such as peanuts, eggs or milk.

However, these are not compulsory. If there is no allergy advice box or "contains" statement on a product, it doesn't mean that none of the 14 specified allergens are used as ingredients.

Look out for "may contain" labels, such as "may contain traces of peanut". Manufacturers sometimes put this label on their products to warn consumers that they may have become contaminated with another food product when being made.

Some non-food products contain allergy-causing food:

Some soaps and shampoos contain soy, egg and tree nut oil.

Some pet foods contain milk and peanuts.

Some glues and adhesive labels used on envelopes and stamps contain traces of wheat.

Again, read the labels of any non-food products that your child may come into close physical contact with.

Unpackaged food

Currently, unpackaged food doesn't need to be labelled in the same way as packaged food, and therefore it can be more difficult for to know what ingredients are used in a particular dish.

Examples of unpackaged food include food sold from:

bakeries (including in-store bakeries in supermarkets)

delis

salad bars

"ready-to-eat" sandwich shops

takeaways

restaurants

If your child has a severe food allergy, you will need to be careful if you want to eat out with them.

The following advice should help:

Let the staff know. When making a booking at a restaurant, make sure that the staff are aware of your child's allergy and ask for a firm guarantee that any food they will be served will be free from the food to which they are allergic. If the staff can't offer such a guarantee, choose another restaurant. As well as informing the chef and kitchen staff who are involved in cooking your food, let waiters and waitresses know so that they understand the importance of avoiding cross-contamination when serving you.

Read the menu carefully and check for "hidden ingredients". Some food types contain other foods that can trigger allergies, which restaurant staff may have overlooked. Some desserts contain nuts (such as a cheesecake base) and some sauces contain wheat and peanuts.

Prepare for the worst. It's a good idea to prepare for any eventuality. Always take your child's anti-allergy medication with you when eating out, particularly if they have been given an auto-injector of adrenalin (read more about treating food allergies with a auto-injector).

In older children you can use what is known as a "taste-test". Before your child begins to eat, ask them to take a tiny portion of the food and rub it against their lips to see if they experience a tingling or burning sensation. If they do, it suggests that the food will cause them to have an allergic reaction. However, the "taste-test" doesn't work for all foods, so shouldn't be used as a substitute for following the advice above.

Further advice

Further advice for parents is provided below.

Notify your child's school about their allergy. Depending on how severe your child’s allergy could be, it may be useful to provide the staff at their school with an emergency action plan in case of accidental exposure. Arrange with the school nurse, or another appropriate staff member, to hold a supply of adrenalin and to administer it if necessary. Food allergy bracelets are also available, which explain how other people can help your child in an emergency.

Let other parents know. Young children may easily forget about their food allergy and accept food that they shouldn't have when visiting other children. Telling the parents of your child’s friends about their allergy should help prevent this.

Educate your child. Once your child is old enough to understand, it is important that you provide them with clear, simple instructions about what foods to avoid and what they should do if they accidentally eat them.

Treating a food allergy

EpiPen

People at risk of anaphylaxis will be prescribed adrenaline auto-injector pens

There are two main types of medication that can be used to relieve the symptoms of an allergic reaction to foods:

antihistamines, which can be used to treat mild to moderate allergic reaction

adrenaline, which can be used to treat severe allergic reactions (anaphylaxis)

Antihistamines

Antihistamines work by blocking the effects of histamine, a protein responsible for most of the symptoms of an allergic reaction.

Many antihistamines are available from your pharmacist without prescription so it may be a good idea to stock up in case of an emergency.

Some antihistamines, such as alimemazine and promethazine, aren't suitable for children under two years old. Therefore seek advice from your DOCTOR if you have a younger child with a food allergy about what types of antihistamines may be suitable.

Avoid drinking alcohol after taking an antihistamine as this can make you feel drowsy.

Adrenaline

Adrenaline works by narrowing the blood vessels to counteract the effects of low blood pressure, and by opening up the airways to help ease breathing difficulties.

If your child's, or your own allergies, are thought have a potential risk of anaphylaxis or has had a previous episode of anaphylaxis, you will be given an auto-injector of adrenaline to use in case of emergencies.

Carefully read the manufacturer's instructions that come with the auto-injector and when your child is old enough, train them how to use it (see below).

Using an auto-injector

If you suspect that somebody is experiencing the symptoms of anaphylaxis then immediately call for an ambulance and tell the operator that you think the person has anaphylaxis.

Older children and adults will probably have been trained to inject themselves. You may need to inject younger children or older children and adults who are too sick to inject themselves.

There are three types of auto-injectors:

EpiPen

Anapen

Jext

All three work in much the same way. If anaphylaxis is suspected then you should remove the safety cap from the injector, place it against your outer thigh (holding it as a right angle) and then hold down the firing button that is located at the end of the injector. The injections can be given through clothing.

This will send a needle into your thigh and deliver a dose of adrenaline. You need to hold the button down for ten seconds.

If the person is unconscious, check their airways are open and clear and check their breathing. Then put them in the recovery position (see below). Putting

someone who is unconscious in the recovery position ensures that they do not choke on their vomit.

Place the person on their side, ensuring that they are supported by one leg and one arm. Open the airway by tilting the head and lifting the chin.

If the person's breathing or heart stops, cardiopulmonary resuscitation (CPR) should be performed.

Owning an auto-injector

As a precaution the following advice is strongly recommended.

Carry the auto-injector at all times or encourage your child to do so if they are old enough: there should be no exceptions. You may be recommended to carry multiple injectors. Check with your DOCTOR or the doctor in charge of your care. You may also be given an emergency card or bracelet with full details of your child’s allergy and contact details of their doctor, to alert others. If so, they should wear this at all time.

Extreme temperatures can make adrenaline less effective so do not leave an auto-injector in places such as your fridge or the glove compartment of your car.

Check the expiry date regularly. EpiPen has a shelf life of 18 months after the date of manufacture and Anapen and Jext has a shelf life of two years. An out-of-date injector will only offer limited protection.

The manufacturers offer a reminder service where you can be contacted near the date of expiry. Check the information leaflet that comes with the medication for more information.

If your child has an auto-injector they will need to change over to an adult dose once they reach a weight of 30 kilos (4.7 stone). Depending on the shape and size of your child’s body this could be anywhere between the ages of 5 to 11 years old.

Do not delay in injecting if you think you or your child may be experiencing the start of anaphylaxis, even if the initial symptoms are mild. It is better to use adrenaline early and find out it was a false alarm than delay treatment until you are sure your child is experiencing severe anaphylaxis.