

Peanut allergy and tree nut allergy – the facts

Peanut allergy and tree nut allergy can sometimes result in severe allergic reactions and understandably this can cause intense anxiety among those affected and their families.

This factsheet aims to answer some of the questions which you and your family might have about living with peanut allergy or tree nut allergy. Our aim is to help you to minimise risks and learn how to treat an allergic reaction should it occur.



The peanut is a legume, related botanically to foods such as peas, beans and lentils. Tree nuts are in a different botanical category and include almonds, hazelnuts, walnuts, cashew nuts, pecans, Brazil nuts, pistachios and macadamia nuts.

A key message for people with peanut or tree nut allergy is take your allergy seriously. You should visit your GP and ask to be referred to an NHS allergy clinic for a proper assessment and high-quality advice.

Throughout the text you will see brief medical references given in brackets. If you would like the full references please call the Anaphylaxis Campaign helpline, on Tel: 01252 542029.

How common are peanut allergy and tree nut allergy?

Research has shown that peanut allergy among children increased significantly during the 1990s. In 2002 a medical team on the Isle of Wight found that around one in 70 children across the UK was allergic to peanuts, compared with one in 200 a decade before. (Grundy et al, 2002). A more recent follow-up study by the same group suggests a slight fall in cases (Venter et al 2010).

The high rates of peanut allergy were acknowledged in a UK Government report in 2004, which put the figure among children in England at around 250,000 (House of Commons 2004). Similar trends for peanut allergy have been noted in the USA (Sicherer et al, 2010).

A 2011 paper shows that tree nut allergy is more common in older age groups than among children (Venter and Arshad 2011).

What are the symptoms that could occur?

The symptoms of a food allergy can come on rapidly. These may include nettle rash (otherwise known as hives or urticaria) anywhere on the body, or a tingling or itchy feeling in the mouth.

More serious symptoms may include:

- Swelling in the face, throat and/or mouth
- Difficulty breathing
- Severe asthma
- Abdominal pain, nausea and vomiting

The term for this more serious form of allergy is anaphylaxis. In extreme cases there could be a dramatic fall in blood pressure (anaphylactic shock). The person may become weak and floppy and may have a sense of something terrible happening. This may lead to collapse and unconsciousness. On rare occasions, death can occur.

How can I get a diagnosis?

If you suspect or know you have peanut allergy or tree nut allergy you need to go to your GP and seek a referral to an NHS allergy clinic for a thorough assessment, which will include tests to confirm which types of nut are responsible for causing your symptoms.

A referral is important even if your symptoms were mild because it is possible that a future allergic reaction could be more severe. Although your GP or specialist may find it hard to predict the severity of future symptoms, your medical background may provide clues. According to experts (Muraro et al 2007) you are at high risk if:

- You have had a severe reaction in the past, such as swelling in the throat, breathing difficulties (even mild) or faintness
- You have asthma as well as allergy, particularly if that asthma requires regular preventer treatment
- You have had an allergic reaction to a tiny amount of peanut or tree nut

The age of the person with the allergy could also be a risk factor. Fatal reactions are very rare, but where they do happen, they are more likely to occur between the ages of 17-27 (Pumphrey, 2004). As young people begin to manage their allergies for themselves they may be less cautious with regard to risk, reluctant to ask direct questions in restaurants and subject to peer pressure.

To find your nearest allergy clinic visit the website of the British Society for Allergy and Clinical Immunology www.bsaci.org

How is an allergic reaction treated?

If peanut or tree nut allergy is strongly suspected, and especially when allergy tests have confirmed it, you are likely to be prescribed adrenaline (also known as epinephrine). The adrenaline injectors prescribed in the UK at present are Emerade®, EpiPen® and Jext®. These injectors are easy to use and designed for self-administration. If you are prescribed an injector, it should be available at all times – with no exceptions. After an injection has been given, someone must dial 999 immediately as symptoms may return after a short period and more than one injection may be required. The emergency service operator must be told the person is suffering from anaphylaxis (pronounced ana-fill-axis).

If you are prescribed an adrenaline injector, you will need to know how and when to use it. Ask your GP or allergist for advice. You can also find help on the website relevant to the injector you carry.

There is evidence that many people have found it difficult to use the injectors currently available (Umasunthar et al, 2015). Therefore very good and regular training in their use is essential.

Emergency treatment of anaphylaxis – what injectors are available?

Pre-loaded adrenaline injection devices – Emerade®, EpiPen® or Jext® – are available on prescription for those thought to be at risk of a severe reaction.

Emerade® is the most recent single use adrenaline auto-injector to become available. It has a needle guard to protect against needle stick injury. Visit www.emerade.co.uk

EpiPen® has a spring-loaded concealed needle. The built-in needle protection keeps the needle covered during and after use. Visit www.epipen.co.uk.

Jext® has a locking needle shield which engages after use, designed to protect against needle injury. Visit www.jext.co.uk.

See our separate fact sheet on adrenaline which addresses questions such as 'How many injectors should I carry?' and 'How is adrenaline administered?'

How do I reduce risks?

Shopping - Always read food labels, even if you are buying a product you have eaten many times before as recipes and manufacturing methods sometimes change. Check both the inner and outer wrapping of multipacks.

All pre-packaged food sold within the EU, including the UK, must declare and highlight the presence in the ingredient list of 14 major allergens even if they appear in small quantities. These 14 allergens include peanuts and common tree nuts (almonds, hazelnuts, walnuts, cashew nuts, pecan nuts, Brazil nuts, pistachio nuts, macadamia nuts and Queensland nuts).

“May contain” warnings (sometimes known as advisory labelling) are used by food companies where there is a risk of cross-contamination during the production process. Advisory labelling is widespread and causes immense frustration to shoppers but we believe these warnings should be heeded at all times and never ignored. Sometimes there are genuine risks. You may eat a product many times without a problem, but cross-contamination may have occurred the next time you eat it.

Eating out – Under EU law, food businesses selling catered or loose food are required to provide information about the presence of allergenic ingredients in their food. These include peanuts and tree nuts. You should question staff very directly, asking whether the nut you are allergic to is an ingredient of the food you have chosen or whether there is a risk of cross-contamination. Don't be afraid to ask the waiter to check with the chef.

Food tips

1. Watch out for satay sauce (made with peanuts), pesto sauce (which can contain tree nuts or pine nuts) and marzipan and praline (confectionery products made with nuts). Salad dressings may contain nut oils.
2. Curries and other Eastern dishes are high risk because many of them contain peanuts or tree nuts and their presence may not be obvious if the food is spicy. Studies focusing on takeaway meals have shown that even when nut-free meals were ordered, a significant proportion still contained nuts (Leitch and Walker 2005).
3. Foods likely to contain peanuts or tree nuts include the following: Cakes, biscuits, pastries, cereal bars, confectionery, ice cream, desserts, vegetarian products, salads and salad dressings. This list is not exhaustive.
4. Watch out for peanut shoots as they are being sold in some UK shops. They can be used in stir-fry dishes and salads and could be mistaken for bean sprouts. Always read food labels carefully.
5. Roasting and heat treatment do not reduce the allergenicity (capacity to produce an allergic reaction) of peanuts or tree nuts. In fact laboratory experiments have suggested that roasting and heating peanuts (but not boiling) may actually increase their allergenicity (Maleki et al 2000).

6. Be careful when others share food with you. For example, a member of the Anaphylaxis Campaign reports that her son suffered a severe allergic reaction after drinking from a classmate's bottle. The classmate had eaten peanuts.

Which other foods should I avoid?

A significant proportion of people with peanut allergy are also allergic to tree nuts or will become allergic to them. Some people allergic to one tree nut, such as Brazil nuts, may become allergic to others, such as walnut (Clark and Ewan, 2005). There is also the possibility of certain nuts coming into contact with others during food production.

So is it best to avoid all nuts if you are allergic to one or two of them? Some allergy experts would indeed advise that total avoidance is best in order to play safe. But others disagree. One study states: "In peanut or tree nut allergic children, introduction of specific nuts to which the child is not allergic may improve quality of life and should be considered in patients with multiple foods allergies, vegan or ethnic-specific diets, in whom nuts are an important source of protein." (Brough et al, 2014).

Our advice is that it depends what tests you have had. If you have been tested for specific nuts, your doctor or allergist will be able to advise whether it is possible to include certain nuts in your diet. If you do eat specific nuts, it is usually advisable to do so at home so you can better control any risk of cross-contamination. Eating nuts from the shells avoids the risk of cross-contamination from other nuts.

If you have **not** been tested for specific nuts, then we believe in playing safe – avoiding all nuts – until you are able to be tested.

Research suggests that a significant number of people with cashew nut allergy are also allergic to pistachios (Clark et al, 2007). There is a similar link between walnut and pecan nuts (Teuber et al 2000).

Legumes: Peanuts are actually legumes. In our experience, the number of people with peanut allergy who react to other legumes (such as soya, peas, chick peas, fenugreek, beans and lentils) is relatively small and this is supported by research from the USA (Sicherer 2001). Care is needed, but most people find they can tolerate these other legumes without problems. Raise this with your allergy specialist for specific advice.

Lupin: If you are allergic to peanuts, watch out for lupin, also a legume. Various studies have shown that a significant proportion of people who are peanut-allergic react to lupin (Peeters et al 2009). Although medical knowledge is incomplete on this subject, care is needed. If you are allergic to peanuts, you should discuss lupin with an allergist. You may be offered a test for lupin allergy. As you should be reading food labels scrupulously as a matter of course, you may wish to play safe and avoid any product containing lupin. Lupin flour is used as an ingredient in some baked goods, particularly those which are imported. Under European Law, lupin must be

labelled when it appears in pre-packed food.

Sesame seeds: A survey of Anaphylaxis Campaign members in 2005 showed that a significant proportion of children with peanut and tree nut allergy reported sesame seed allergy (Derby et al 2005).

Other foods: People with nut allergy frequently ask if they should avoid certain foods with “nut” in the name – even those that are botanically different to tree nuts. These include pine nuts, coconut, nutmeg and chestnut. If you are allergic to nuts and have never had a reaction to any of these foods, it is likely that they are safe for you to eat. We would always advise that you check with your allergy doctor first. As the medical literature shows, each of them is known to cause allergic reactions in a small number of people (not necessarily people with nut allergy). If there is any uncertainty about any product, play safe and avoid it.

Key message: The question of what else to avoid is one that must be discussed with your allergy doctor. All individuals are different and require specific advice.

Is there a risk through contact through touch or smell?

People with peanut allergy are often concerned that casual contact with peanut – such as through touch or smell – could trigger a life-threatening reaction.

A study undertaken in the USA (Simonte et al 2003) gives some reassurance. Researchers observed 30 children with severe peanut allergy while they were being exposed to peanut butter through touch and smell. Accidental contact was simulated by pressing a dab of peanut butter on the child's back for one minute, and by holding a dish containing three ounces of peanut butter one foot from the child's nose for 10 minutes.

- None of the children experienced anaphylaxis.
- There were no reactions to inhalation.
- During contact with the back, one-third of the children had a mild reaction, such as redness, itching, or a single hive limited to the site of contact. Medication was not needed to treat these reactions.

Researchers concluded that at least 90% of similarly allergic children would not experience a severe reaction to similar exposures. However the study looked at peanut butter but not peanut in other forms. We know of a very small number of people who claim to have reacted to touch or smell.

Importantly, we advise you to be guided by your allergy doctor.

Is there a risk from peanut oils or nut oils?

Research carried out in Southampton showed that **refined** peanut oil will not cause allergic reactions for the majority of people with peanut allergy and if anyone does suffer a reaction it is likely to be mild (Hourihane et al 1999). However in 2004 the European Food Safety Authority said more scientific data should be made

available before it would consider refined peanut oil to be of no risk to people with peanut allergy. Since November 2005 food companies have been compelled to declare refined peanut oil on food labels as well as unrefined. This enables people to make up their own minds whether to eat products containing refined peanut oil or avoid them.

Unrefined (also called **crude**) peanut oil is more likely to cause symptoms.

Peanut oil (sometimes known as groundnut oil) may be used for frying in some fish and chip shops and this may be unrefined and therefore risky.

Speciality oils such as walnut oil contain significant levels of protein and should be avoided.

Personal care products and medicines - Medicines, soaps, cosmetics and personal care products sometimes contain peanut or nut oils. It is difficult to determine the level of risk posed by these products, so we advise playing safe and avoiding them. Labels may show ingredients in Latin (e.g. arachis is the Latin name for peanut).

Nut oils such as almond may be used for massage. We believe they should be avoided by people with nut allergy or people with a family history of allergy.

See our separate fact sheet on "Cosmetics, personal care products and medicines -Some of the questions asked by people with food allergies".

What are the risks during air travel?

Some people with peanut allergy report that they experience symptoms when peanut snacks are handed around to passengers with their drinks during air travel. In our view the most likely cause of these reactions is skin contact. If you touch a fold-down tray or some other surface that has previously been touched by a passenger eating peanuts, and then touch your eyes or mouth, you could have a reaction. To minimise the risk, you could carry "wet wipes" to clean surfaces as soon as you get on the plane.

Reactions caused by inhalation of peanut dust are thought to be less likely. A study presented to the 2012 annual meeting of the British Society for Allergy and Clinical Immunology found that peanut protein does not easily become airborne and therefore significant exposure to peanut protein via inhalation is unlikely (Makinson et al, 2012). However, you must be guided by your doctor or consultant, and your allergy history. If you know you are at the high end of the risk scale (for example, you have reacted by inhaling peanut allergen in the past) then it would be sensible to contact the airline well in advance to request that peanuts are not distributed on your flight.

Will your allergy be lifelong?

Peanut allergy was once thought to be lifelong in all cases, but studies show that about 20% of young children outgrow it (Hourihane 1998 and Burks 2008). Doctors are unable to tell which children will be the lucky ones, although blood tests taken in the early years of life may provide clues (Ho et al 2008). Some experts believe that if a child has not outgrown their peanut allergy before the age of ten, it is likely that it will persist.

Challenge testing, where peanuts are introduced to the child in a controlled way in hospital, may be required to test whether the child's peanut allergy has been outgrown.

As with peanut allergy, a proportion of people with tree nut allergy will outgrow it. Research suggests that 10% of young children outgrow tree nut allergy (Skripak and Woods 2008).

Hope for the future

Researchers are working on a method of treating peanut allergy called oral immunotherapy (also known as desensitisation). In one UK study allergy experts found that 84 and 91 per cent of the two groups of children treated with this new form of immunotherapy could eat at least five peanuts a day (Anagnostou et al, 2014). The research involved young people, aged between seven and sixteen, eating daily doses of peanut protein. Starting with a tiny dose and slowly building up over four to six months, they trained their bodies to tolerate the equivalent of five whole peanuts. The treatment involved frequent visits to hospital during the gradual increase in doses and unexpected allergic reactions occasionally occurred. At present it is not a routine treatment and this must never be tried at home. Other approaches to treatment are currently being researched which offer hope.

Key messages:

- Always be vigilant when food is around
- Check food labels
- Be proactive when eating out
- Carry prescribed medication everywhere
- Learn how and when to use your adrenaline auto-injector
- Ensure that asthma is well managed.

Reviewers

The content of this Fact Sheet has been Peer Reviewed by Sue Clarke, who is Specialist Allergy Health Visitor, Allergy Lecturer and Nurse Adviser to the Anaphylaxis Campaign; and Prof John Warner, Professor of Paediatrics and Head of Department, Imperial College, London (at the time of publication).

Disclosures

Sue Clarke works on a small research study with ANSWER (Allergy Nurse Specialists working in Eastern Region), which was funded with an educational grant by ALK-Abello. Prof Warner was an advisor to the Medicines and Healthcare Products Regulatory Agency in producing the advice on adrenaline auto-injectors (June 2014); his department has received a grant from Lincoln Medical to conduct research; he received payment for a lecture given for Meda Pharmaceuticals more than two years ago. Both reviewers are members of the Anaphylaxis Campaign's clinical and scientific advisory panel.

Disclaimer – The information provided in this Factsheet is given in good faith. Every effort has been taken to ensure accuracy. All patients are different, and specific cases need specific advice. There is no substitute for good medical advice provided by a medical professional.

About the Anaphylaxis Campaign: Supporting people with severe allergies

The Anaphylaxis Campaign is the only UK wide charity to exclusively meet the needs of the growing numbers of people at risk from severe allergic reactions (anaphylaxis) by providing information and support relating to foods and other triggers such as latex, drugs and insect stings. Our focus is on medical facts, food labelling, risk reduction and allergen management. The Campaign offers tailored services for individual, clinical professional and corporate members.

Visit our website www.anaphylaxis.org.uk and follow us on Twitter [@Anaphylaxiscoms](https://twitter.com/Anaphylaxiscoms).