

## Lipid Transfer Protein Allergy

Lipid Transfer Proteins (LTPs) are natural proteins found in plants that function to protect them from pathogens and environmental stress. They are present in many fruits, vegetables, nuts, and cereals. If you have LTP allergy, you may react to a variety of plant foods, including raw, cooked, or processed forms. LTP allergy can occur in both adults and children across all regions of the UK.

### What is LTP allergy?

LTP allergy is a type of food allergy. LTP allergy happens when the body's immune system wrongly identifies LTP in plant foods as a threat. When this occurs, the body releases chemicals such as histamine in response. It is the release of these chemicals that causes the allergic symptoms. Reactions can occur to a single plant food or to multiple plant foods.

LTP allergy is more common in Southern Europe or Mediterranean Europe, particularly Spain, Greece and Italy, but it is increasingly a cause of plant food allergy in Northern regions, including the UK.

LTP allergy is different from [Pollen Food Syndrome](#) (also known as Oral Allergy Syndrome). While the foods involved may be similar, LTP allergens are highly stable and resistant to heat and digestive enzymes. LTP allergy can therefore cause reactions to cooked or processed foods and may lead to more widespread or serious symptoms, including anaphylaxis.

### Where are LTPs found?

LTPs are abundant in fruits, vegetables, nuts and cereals, and are most concentrated in the peel and seeds of plant foods.

If you are diagnosed with LTP allergy, **you only need to avoid the foods which cause your symptoms**. Not all LTP-containing foods will cause an allergic reaction and it's important not to cut foods out of your diet if you don't need to. You may be able to tolerate certain foods if they are peeled or the seeds have been removed—discuss this with your allergy specialist and follow their advice.

Common foods involved in LTP allergy in the UK include:

- peanuts
- tree nuts (e.g. hazelnuts, almonds, walnuts)
- apples

- stone fruits (e.g. peach, apricot, cherry, plum)
- dried fruit and dried fruit peel
- concentrated, processed, preserved, or fermented fruits or vegetables
- foods made using whole unpeeled fruits or vegetables such as smoothies, juices, jams, desserts
- lettuce
- tomatoes and foods containing concentrated tomato (e.g. sauces)
- wheat (other allergens can cause wheat allergy, clarify with your allergy specialist)
- mustard
- maize/corn
- mixed or multi-ingredient products that may include peels, seeds or concentrated plant ingredients (e.g. ready meals, sauces)
- some mixed or multi-ingredient foods such as pizza, curry, pasta sauces, ready meals and soups.

If you are unsure of what may be causing your allergic reactions, we advise keeping a food and symptom diary, noting any reactions you may have to any specific foods or food groups, and the length of time after eating these reactions occur. This may help an allergy consultant or dietician understand your history and diagnose the allergy more easily.

### What are the symptoms of LTP allergy?

Unfortunately, the amount of LTP in foods varies and adverse reactions are often triggered when co-factors are also present (see below), so it can be difficult to predict when a reaction may happen. Reactions to LTPs can occur after eating raw, cooked or processed foods. Symptoms usually appear within 30 minutes of eating, but in some people may occur sooner or later depending on co-factors.

**Mild** to **moderate** symptoms may include:

- a red raised itchy rash (known as hives or urticaria) anywhere on the body
- swelling of the face, lips and/or eyes
- a tingling or itchy feeling in the mouth
- mild throat tightness
- stomach pain, vomiting or diarrhoea

### More serious symptoms (anaphylaxis)

More serious symptoms are often referred to as the **ABC** symptoms and can include:

- **AIRWAY** - swelling in the throat, tongue or upper airways, hoarse voice, difficulty swallowing.

- **BREATHING** - sudden onset wheezing, breathing difficulty, noisy breathing, persistent cough.
- **CIRCULATION** - dizziness, feeling faint, sudden sleepiness, confusion, pale clammy skin, loss of consciousness or collapse.

The term for this more serious reaction is [anaphylaxis](#) (ana-fil-ax-is).

Most healthcare professionals consider an allergic reaction to be anaphylaxis when it involves difficulty in breathing. It may also be classed as anaphylaxis if it affects heart rhythm or blood pressure. In extreme cases there could be a dramatic fall in blood pressure. The person may become weak and floppy and may have a sense of something terrible happening. Any of the ABC symptoms may lead to collapse and unconsciousness and, on rare occasions, can be fatal.

[Read more about anaphylaxis.](#)

### LTP allergy when other factors are involved

If you have an **LTP allergy**, you may find that you only have a reaction — or that your reaction is more serious — if you eat the food around the same time as doing certain activities or taking certain substances.

These are known as “**co-factors**”, and they can include:

- exercise
- drinking alcohol
- taking a non-steroidal anti-inflammatory painkiller (NSAID), such as aspirin or ibuprofen
- stress, which may also make a reaction worse.

While LTP allergy symptoms usually happen within 30 minutes of eating the food, they can sometimes be delayed by up to one or two hours, depending on whether a co-factor is involved. Some people may only react when more than one co-factor is present at the same time, such as eating out, drinking alcohol and dancing/exercising.

### Getting a diagnosis

If you think you may have LTP allergy, see your GP who can refer you to a specialist allergy clinic if needed. They can find a clinic in your area from the [British Society for Allergy and Clinical Immunology \(BSACI\)](#).

It's important to get a referral even if your symptoms were mild because severity of future allergic reactions cannot be predicted and could be more serious.

Once you get a referral, the allergy specialist will take a detailed history of your reactions, including which foods were eaten, how quickly symptoms started, whether the food was raw/cooked/processed, and whether co-factors such as exercise or alcohol were involved.

A positive allergy test on its own does **not** always mean you have an LTP allergy. Test results need to be interpreted alongside your symptoms and food history by an allergy specialist.

If your history suggests LTP allergy, they may recommend targeted tests (such as skin prick testing or blood tests) to support the diagnosis. These tests are **not** used to “screen” for which plant foods you should avoid – interpretation alongside your clinical history is essential.

In some cases, a supervised food challenge in hospital may be considered. However, in LTP allergy this is not always useful, because reactions can be influenced by factors like exercise or alcohol and may not happen the same way each time.

[Read more about allergy testing.](#)

Some clues that you might be at higher risk of more serious reactions are:

- you have already had a serious reaction, with any of the ‘**ABC**’ symptoms
- you have asthma, especially if it is not well controlled
- you have reacted to a tiny amount of the food.

If you have asthma, and it is not well controlled, this could make an allergic reaction worse. Make sure you discuss this with your GP or allergy specialist and take any medications as prescribed.

### Treating symptoms

If you have mild allergic symptoms, you may be prescribed antihistamine medicine that you take by mouth. But if you are at risk of a serious allergic reaction (anaphylaxis), you may be prescribed adrenaline – the emergency medicine used to treat anaphylaxis. It is also known as epinephrine.

Because anaphylaxis can happen very quickly, adrenaline is available in different forms that are designed to be easy to use. It’s important to know exactly how and when to use your prescribed adrenaline. Healthcare professionals can show you how to use it, and there are also resources such as practice devices and videos on manufacturer websites.

Options currently available on prescription in the UK include:

- **Adrenaline auto-injectors (AAIs)** – such as EpiPen and Jext.

- **Intranasal adrenaline** – EURneffy, a needle-free nasal spray.

You must carry two in-date forms of prescribed adrenaline at all times as a second dose may be needed if symptoms do not improve after five minutes or get worse.

[Find out more about what to do in an emergency.](#)

[Find out more about adrenaline.](#)

### Keeping safe with LTP allergy

The uncertainty about which foods might cause a reaction, and what might make a reaction worse, can make managing your LTP allergy particularly difficult. Always carry your prescribed medicine and make a clear [allergy action plan](#) with your allergy specialist.

### Key messages

- If you have symptoms after eating plant foods, visit your GP.
- If you are prescribed adrenaline, carry **two** devices with you **at all times**.
- Always be guided by your allergy specialist about which foods you should avoid.
- If you have asthma, make sure it is well managed. See your GP about this.

### Feedback

Please help us to improve our information resources by sending us your feedback at

<https://www.anaphylaxis.org.uk/information-resources-feedback/>

### Sources

All the information we produce is evidence-based or follows expert opinion and is checked by our clinical and research reviewers. If you would like to know the sources we used to produce any of our information, please contact [info@anaphylaxis.org.uk](mailto:info@anaphylaxis.org.uk) and we will gladly supply details.

### Reviewers

The text of this article has been peer-reviewed by Rebecca McKenzie, Senior Specialist Dietician in Allergy, UCLH.

### Disclosures

Dr Skypala is co-author of the 2019 paper, “Lipid Transfer Protein allergy in the United Kingdom: Characterization and comparison with a matched Italian cohort.”

### Disclaimer

The information provided in this article is given in good faith. Every effort is 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 Anaphylaxis UK

Anaphylaxis UK is the only UK-wide charity solely focused on supporting people at risk of serious, life-threatening allergic reactions. We provide information and support to people living with allergies through our free national helpline and local support groups. We also fundraise to achieve our ultimate aim, to create a safer environment for all people at risk of serious allergies. Visit our website [www.anaphylaxis.org.uk](http://www.anaphylaxis.org.uk) and follow us to keep up-to-date with our latest news. We're on Facebook @anaphylaxisUK, LinkedIn, Instagram @anaphylaxisUK, and you can find our podcast [here](#).