Pollen food syndrome

Pollen food syndrome is a common medical condition in which the person affected experiences immediate allergic symptoms in the lips, mouth and throat, usually when they eat certain kinds of raw fruit or raw vegetables. These symptoms are most commonly itching or tingling, but swelling may also occur.

Pollen food syndrome usually occurs in people who are already allergic to pollens and have hayfever**.** The proteins in these pollens are similar to those in certain raw fresh fruits and raw vegetables. This similarity means that the person's immune system mistakes the food for pollen. This is what causes the reaction to the food. Symptoms are usually mild and may respond to antihistamines but it is important to consult your doctor to confirm that this is the right treatment.

This factsheet aims to answer some of the questions which you and your family might have about living with pollen food syndrome. Our aim is to provide reliable information that will help you to understand your condition, the foods that cause the allergy and how to treat a reaction should it occur.

If you think you have this allergy, you should visit your GP for confirmation of the diagnosis. Most cases are mild but on rare occasions there is the possibility of more serious reactions occurring and so your GP may recommend consultation with an allergy specialist.

Throughout the text you will see brief medical references given in brackets. More complete references are published towards the end of this fact sheet.

Other terms for pollen food syndrome

Some medical professionals refer to pollen food syndrome as oral allergy syndrome, although strictly speaking the two are not the same. When the term oral allergy syndrome was first used in 1987 it had no connection with pollen allergy but referred to **any** allergic symptoms in the mouth that often preceded more serious symptoms. The Anaphylaxis Campaign prefers the term pollen food syndrome when referring to allergy symptoms to food that are linked to pollen allergy and are limited to the mouth and throat.

Symptoms of pollen food syndrome

Common symptoms, which usually come on immediately, include:

- Redness, mild swelling or itching of the lips, tongue, inside of the mouth, soft palate and ears
- Itching and mild swelling affecting the throat
- Occasionally, people might also experience symptoms in the oesophagus (gullet) or stomach, causing abdominal pain, nausea and even vomiting

- Sneezing, runny nose, or eye symptoms can also occur due to tiny amounts of the culprit foods entering the nose or eyes
- Rarely, more severe symptoms (such as difficulty in swallowing, and breathing difficulties) can occur. In such cases, immediate medical help is needed.

The symptoms of pollen-food syndrome usually only occur when the fruit or vegetable is eaten raw. This is because cooking changes the structure of the responsible protein. However a few people do react to one or more of their culprit foods even when they have been cooked.

Types of pollen

Different types of pollen can cause pollen food syndrome, but the most common in the UK is silver birch pollen, which causes hay fever symptoms from the end of March until the end of May. About three quarters of people sensitised to silver birch pollen also develop pollen food syndrome (Skypala et al 2011). When someone is "sensitised" to a substance or food it means their immune system produces a specific type of allergic antibody to it. This can trigger an allergic reaction when the substance or food is encountered.

Grass pollen can also be responsible for causing pollen food syndrome. Many people may not realise they have the condition because in its mildest form they may only experience a minor sensation in the lips or tongue.

Experts believe it probable that people who are sensitised to **both** birch and grass pollens are more likely to develop pollen food syndrome (Asero et al 1996, Skypala et al 2011). They may also experience symptoms to a wider range of fresh fruits and raw vegetables than those people who are sensitised to birch pollen alone.

Weed pollens such as *Artemisia* (mugwort, wormwood) and *Parietaria* (pellitory of the wall) can also be responsible for pollen food syndrome.

Which foods are involved?

The most common foods affecting people with pollen food syndrome are raw fruits (for example, apples, apricots, pears, cherries, kiwi, mango, plums, peaches, nectarines, tomatoes) and raw vegetables (for example, carrots, celery). A number of other plant foods may occasionally cause the condition including raw or stir fried legumes, such as mange tout, beansprouts, and raw peas. Soy milk can also cause reactions, which in some cases can be quite severe, although other forms of soy are usually tolerated (Berneder et al 2013). People have reported nose and eye symptoms and itchy hands when handling raw potatoes or raw parsnips.

Certain nuts are often involved in pollen food syndrome, notably hazelnut, almond, walnut and peanut. **However, it is important to distinguish between pollen food syndrome caused by nuts and a more serious nut allergy that is unrelated to pollen.** If there is any doubt, the advice of an allergy specialist is most certainly needed.

Latex food syndrome

An allergy similar to pollen food syndrome affects some people who are allergic to latex. Latex allergy is caused by a reaction to proteins found in natural rubber latex and is more likely to occur in people who come into regular contact with latex such as healthcare workers and people undergoing multiple surgical procedures.

Because some latex proteins are similar to the proteins in certain foods, people who are allergic to latex might also find they react to foods such as avocado, banana, kiwi, and chestnut. The symptoms can be similar as those described for pollen-related reactions.

How can I get a diagnosis?

It is important to see your GP as soon as possible if you have any symptoms of a food allergy. Although this fact sheet focuses on a particular type of food allergy that is often mild, a proper diagnosis is needed to determine whether your allergy could potentially be more severe. Some forms of allergy to fruits and vegetables are unrelated to pollen and can result in more serious symptoms (Fernández–Rivas et al 2006, Salcedo et al 2004). It is important to get medical advice about how to treat your allergy.

Some GPs have a clear understanding of allergy, but allergy is a specialist subject so it is likely your doctor will need to refer you to an allergy clinic. Your GP can locate an allergy clinic in your area by visiting the website of the British Society for Allergy and Clinical Immunology (www.bsaci.org).

Once you get a referral, the consultant will discuss your symptoms with you in detail as well as your medical history. The results of skin prick tests and blood tests will also help the specialist form a clear picture, although these are only partially helpful. They do not indicate the severity of your allergy.

If you are affected by asthma, you should be aware that this has been shown to be a major risk factor, increasing the chance of you having a more severe allergic reaction, especially if your asthma is poorly-controlled. Raise this with your GP or allergy specialist if you are concerned.

Treating symptoms

With any food allergy, the first line of defence is avoiding the particular food or foods causing you symptoms.

However, it is also important to know how to treat a reaction because problem foods can turn up unexpectedly. In most cases of pollen food syndrome, the symptoms last no longer than an hour or so and rinsing the mouth with water might be all that is needed. However, if symptoms continue then you might require an antihistamine. These precautions are enough for most people with pollen food syndrome but you must see your doctor to get advice in your own particular case.

Very occasionally, investigations might indicate that a severe reaction is a possibility and in these cases your doctor might consider it advisable for you to carry an adrenaline auto injector. If this has been advised, your auto injector should be available at all times – with no exceptions. You must always dial 999 and go to hospital after adrenaline is administered in case of a secondary reaction.

If you are prescribed an adrenaline auto 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 type of injector you carry.

Avoiding the problem foods

Once you are sure that a particular food is causing symptoms (and especially if tests confirm you have an allergy) it is important to exclude it in future. Read food labels carefully and question staff in restaurants, takeaways and other catering establishments. Take particular care with mixed salads and fruit salads as your problem food could turn up unexpectedly.

Although pollen food syndrome can be mild, more severe reactions might occur if large quantities of the problem foods are eaten quickly. For example a fruit smoothie or fresh vegetable juice can contain a lot of the allergens which cause the reaction, so these should be avoided.

If you suffer from pollen-food symptoms triggered by raw nuts, you may find you can tolerate roasted nuts or nuts inside foods such as chocolate bars (Skypala 2009). Avoiding foods with a "nut traces" warning may not be necessary. But all cases are different and these are matters to discuss with your doctor.

Is it possible to grow out of pollen food syndrome?

This is not known at the present time. As far as we know, there has been no research published in this area.

Some key points

Living with a food allergy can be daunting. However, self-care and management of the allergen or allergens will help you continue life without too much interference.

- The key message is to get a proper diagnosis and expert medical advice by visiting your GP. Your GP may refer you to an allergy specialist
- If you have been advised to carry an antihistamine, always have it with you and use it when required
- If you are prescribed an adrenaline auto injector, learn how and when to use it. Always carry it with you
- If you have asthma, ensure it is well managed

References

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Reviewers

The content of this Factsheet has been Peer Reviewed by **Dr Michael Radcliffe,** Consultant in Allergy Medicine, University College London Hospitals NHS Foundation Trust; and **Dr Isabel Skypala**, Clinical Lead for Food Allergy, Royal Brompton and Harefield NHS Foundation Trust.

Disclosures

Dr Skypala was a co-author of two of the studies listed above. Both of our reviewers are medical advisers to the Anaphylaxis Campaign.

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.