

Insect Sting Allergy – the facts

Most people known to be at risk of a severe allergic reaction find the prospect of being stung very frightening. Fortunately the risks of this happening are reduced if sensible precautions are taken and the chances of a sting proving fatal are reduced considerably if the victim is carrying self-injectable adrenaline (also known as epinephrine).

Symptoms

A bee or wasp sting may cause a large swelling at the site of the sting. Providing that the sting site is not on the face or in the airway that might be obstructed by the swelling, this is not dangerous. A few people (less than 0.5% of the U.K. population) may experience a severe, generalised allergic reaction known as anaphylaxis. The symptoms may include:

- an itchy feeling
- difficulty in swallowing
- hives (nettle rash) anywhere on the body
- generalised flushing of the skin
- 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)
- a sense of doom
- Collapse and unconsciousness.



Not all these symptoms would necessarily be present.

Bees

It makes sensational reading when the media write about 'killer bees'. Bees sting only if they feel threatened or when their nest is in danger. Anyone who is attacked by a swarm will testify that it is a terrifying experience. Over 100 bee stings do not necessarily kill; however, one sting can kill a very bee-allergic person.

Honeybees (*Apis mellifera*) and Bumblebees (*Bombus* var) are generally less aggressive than wasps. Bee-keepers are liable to be stung by bees protecting their colony and wear protective clothing when collecting swarms or honey. Even when dangerously allergic, they may be very casual in the amount of protection they use.

Most bee-keepers are stung many times and become desensitised (free of allergy). A few become allergic and may refuse to give up their hobby, hoping they will not be stung again; inevitably, they are.

The bee leaves its stinger (with venom sac attached) in the victim. Because it takes a few minutes for all the venom to be injected, quick removal of the stinger is important and can be done with one quick scrape of the fingernail or a credit card.

Wasps

Wasps are often aggressive, especially towards the end of the season (late summer and autumn). They will then turn to eating any decomposing foods. Fruit pickers often encounter wasp stings in the early autumn. From autumn until the end of the year, sleepy wasps can still be found and are then perfectly still and not buzzing, and it is much easier to accidentally touch or step on one.

For most of the year wasps remain the most aggressive stinging insects likely to cause anaphylaxis and are best avoided using the suggestions in the 'Avoiding insect stings' section below. Because wasps have smooth, non-barbed stings that can be withdrawn, a wasp can sting many times. The wasp's sting in nature is the main weapon it has to subdue the insects that form the substantial part of its diet and for this reason it is always ready, willing and able to use its sting when necessary.

Hornets

Hornets (*Vespa crabro*) in the UK are larger than the normal wasp and are a brighter yellow and often much noisier too, with a loud buzzing sound. Despite their rather threatening size they are not as aggressive as wasps, but when they do sting the volume of venom delivered into the victim usually makes the stings particularly painful.

The venom of hornets and wasps is similar and it is often the case that people allergic to wasps are also allergic to hornets (or vice-versa).

Risk factors

The chance of anyone becoming dangerously allergic to stings is not high, but anyone may become allergic to bee, wasp or hornet stings. Those most at risk of a severe reaction are the elderly and people who suffer from poorly controlled asthma. A note of reassurance must be added here: the chance of anyone becoming dangerously allergic to stings is not high.

When someone has had a severe and generalised reaction following a sting, sometimes the next sting, especially after many years, may cause no reaction at all and this is the general pattern in children.

It is impossible to say with any certainty how severe a subsequent reaction will be so; care is always needed when there are stinging insects around. In only a few cases, symptoms become worse with a subsequent sting, especially if the previous sting occurred within a few weeks.



Wasp stings in the UK cause twice as many anaphylactic deaths as bee stings. There is an added risk of a severe reaction if the allergic person has asthma or is on beta-blocker drugs.

The diagnosis of wasp or bee sting allergy can be confirmed at an allergy clinic. You should seek a referral to an allergy clinic by your GP if any past sting has caused generalised symptoms other than a local swelling at the site of the sting.

Desensitisation treatment

Immunotherapy (desensitisation) is available at a few centres in the UK but the patient's need for such treatment must be assessed at an allergy clinic. Immunotherapy is a course of treatment not to be taken lightly, since there is some risk of anaphylaxis associated with it and the treatment requires considerable time and determination on behalf of the patient to complete.

Immunotherapy consists of a course of injections of venom into the patient starting at very low doses and rising over an agreed period of time to reach a safe level of venom – usually 100mg of venom, which is the sort of dose of venom that the patient might encounter if stung by real life insects.

Immunotherapy has two phases – initial and maintenance. The initial treatment phase normally extends for a period of 12 weeks when the very low starting dose is slowly increased to reach the required levels. Once this has been achieved the patient would typically return on a monthly basis for injections for up to a three-year period. There are different immunotherapy regimes that can speed up the initial phase, but there is some debate among allergists whether there are higher risks associated with the faster types of immunotherapy.

When desensitising injections are considered, a doctor will usually carry out immunological blood tests, skin tests and take a detailed history from the patient. The main purpose of these tests is to assess not just whether the patient is allergic to insect stings, but to determine precisely which insect venom is causing the problem. Stinging insects each have different venom and people who are allergic to wasps may not be allergic to bees. Even the wasp species has a number of different varieties, which themselves have different venoms.

All patients receiving immunotherapy have to remain in the allergy clinic for one hour after the injection in case this causes an allergic reaction. Full resuscitation facilities are also required to be readily available in the UK. It is fortunate that the risk of a severe reaction is low and the great majority of patients successfully complete the course. Medical papers indicate that the treatment is highly successful, not only in reducing the risk of future anaphylaxis but also because it considerably improves the quality of life of the patient.

Avoiding insect stings – If you suspect you are allergic to insect stings, you should try to prevent putting yourself at risk. Here are some steps you could take:

- Wear shoes at all times when out of doors.
- Avoid using strong perfumes during the summer. Many products, such as suntan lotions, hairsprays, hair tonics and other cosmetics, contain strong perfumes. Test before you buy.
- If possible, keep your arms and legs covered.

- If a bee or wasp comes near you, do not try and swot the insect but move away slowly and calmly. If the insect lands on you, try not to panic. Keep calm and be patient. The insect will usually fly away after a few seconds. Make sure that you leave no crumbs or drink on your face, which will interest the insect.
- If you find many wasps or bees in your house or garden and suspect that there may be a nest nearby – perhaps in the roof or a nearby tree – telephone the local authority or a pest control expert to come and remove the nest. Do not try and do this yourself.
- If you are planning to eat outside, check to find an area where there are no wasps or bees before you start eating. It is better to bring your picnic inside than to risk being stung.
- Food attracts insects. When outside, avoid open rubbish bins, and keep food covered. Always look at what you are eating before you take a bite or a sip of a drink as wasps will slip into food and even into open drink cans. Boxed drinks with a straw may be safer but keep an eye on the straw.

Treatment

Local reactions, however large and painful, will usually respond to an antihistamine.

The treatment for a generalised allergic reaction is adrenaline (also known as epinephrine) because this must be administered without delay; patients known to be at risk often carry their own adrenaline injections kits for use in an emergency. The three adrenaline injectors currently available in the UK are the Anapen, EpiPen and Jext.

If your symptoms are severe do not move around. Lie down with your legs raised.

For more information about the Anapen, including how to get a training device, visit www.anapen.co.uk

For more information about the EpiPen, including how to get a training device and a hard carry case, free of charge, as well as how to register your device(s) with the Expiry Alert Service visit www.epipen.co.uk.

For information about Jext, including how to get a training device go to www.jext.co.uk.

Patients are advised to administer adrenaline as soon as a severe reaction is suspected. Signs of a severe reaction include difficulty in breathing, a feeling of dizziness or weakness, or a rash appearing away from the sting. Emergency help must be summoned by dialling 999. If a second injection is available, this may be administered after five minutes if there is no improvement and the ambulance has not arrived. In hospital, the patient should be monitored for 6-12 hours. Children are likely to be admitted overnight.

The AllergyWise anaphylaxis online training programmes can provide more information on how to manage an emergency situation visit www.anaphylaxis.org.uk

Summary

Wasp and bee stings can cause allergic reactions but in most cases they are only local reactions. In a small proportion of the population the allergic reaction can be more severe. Anyone who suffers a generalised reaction should visit their GP and seek referral to an NHS allergy clinic. Desensitisation may be offered. People known to be at risk of severe allergic reactions to bee, wasp, or hornet venom are usually prescribed injectable adrenaline.

The content of this Factsheet has been **Peer Reviewed by Shuaib Nasser MA MD FRCP, Consultant in Allergy & Asthma, Cambridge University NHS Foundation Trust**

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