

Your quick guide to: Allergy to Wasp & Bee Stings

Wasps and bees fly around our countryside, cities and occasionally indoors usually from spring to autumn. There are many species of bees in the UK of which only the honeybee commonly stings (and it is usually bee keepers, their family or neighbours who get stung). The bumble bee rarely stings. There are also many species of wasps and wasp stings are far more common. Most people are not allergic to these stings. However, there are some people who may develop life threatening allergic reactions, called 'anaphylaxis', where breathing and circulation are affected, so it is important to be able to recognise the symptoms and know what to do when this happens.

You may not have an allergic reaction the first time you are stung but there is a small risk that subsequent stings could lead to a serious allergic reaction. Most people, unless they have a specific occupational risk, are rarely stung by wasps, perhaps once every 15-20 years. People who are allergic to wasp stings may very rarely also be allergic to bee stings.⁽¹⁾ Each year there are approximately ten reported deaths from wasp or bee sting reactions, but it is likely that many more deaths may be occurring, mistakenly diagnosed as heart attacks, stroke or attributed to other causes.

Wasp and bee sting reactions

The reaction that most people experience after a wasp or bee sting is pain, discomfort and redness around the sting site, with swelling that may increase over a few hours. This is called a 'local reaction'. Smaller swellings will often go down without medical treatment after a few days. If the swelling becomes large (10cm or more) or if it extends up or down an arm or leg then visit your GP/nurse practitioner or walk-in medical centre as they may prescribe medication to help the swelling go down. However, if you get stung on the face or neck and the swelling goes to the tongue, throat or airways then

you need to seek emergency medical help as your airway may become blocked. Call 999 immediately.

If the reaction progresses quickly from the sting site or is followed by difficult breathing or choking, fainting or collapse the person is experiencing a "systemic" allergic reaction (anaphylaxis) requiring emergency medical treatment. Call 999 immediately and tell them the person has been stung and having anaphylaxis (pronounced ana-fil-axis). If the person carries adrenaline this should be administered immediately and without delay. Check for a medic alert bracelet that may confirm the allergy.

Remember that if you are stung on the hand and your face begins to swell or hives break out all over your body, this is a systemic reaction and it can result in a serious reaction that requires immediate emergency medical attention.

The scale of a reaction

Normal reaction: Lasts a few hours. Sting site is painful, reddened, may swell and itch.

Large local reaction: Lasts for days. Sting site is more painful, swelling and itching may be present both at the sting site and in surrounding areas.

Severe allergic reaction: Can commence rapidly (within minutes) after the sting occurs. The whole body may be involved. Person may feel dizzy (light headed), nauseated and weak. There may be stomach cramps and diarrhoea. There can be itching around the eyes, a warm feeling or coughing, hives breaking out, followed by vomiting and swelling. A feeling of being suddenly very ill (people sometimes report this as a 'sense of impending doom'). Anaphylaxis is associated with:

- Severe breathing difficulty (shortness of breath) due to swelling of the tongue and throat resulting in difficulty swallowing, hoarse voice,

Key facts:

Wasp and bee stings can occasionally cause serious **life-threatening allergic reactions** so it is important to know the symptoms to look out for and what to do.

Keep lawns free of **clover** and **dandelions**, which attract honeybees

People who are allergic to wasp or bee venom should have **two emergency AAI kits** prescribed by their doctor/nurse prescriber to be carried around at all times

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stridor (noisy breathing in) and /or wheezing and bronchospasm and / or

- a drop in blood pressure resulting in faintness, dizziness collapse and loss of consciousness (anaphylactic shock). Reactions may occur in a few minutes, with most severe life threatening reactions occurring within 30 minutes. This is why it is so important to know the symptoms and to call 999 immediately and say anaphylaxis and, if available, give adrenaline immediately when the diagnosis is suspected.

When to seek further medical advice after a sting

All people who develop a systemic reaction to a sting (symptoms remote from the site of the sting) should attend their GP's surgery and request referral to an NHS allergy clinic for further assessment and advice – such reactions in the future could be life-threatening.

With regards to local reactions to the sting, if you are concerned about the sting in any of the following ways:

- there is a large local reaction (area of swelling and redness) more than 10 cm in diameter which peaks between 24 and 48 hours after the sting).
- delayed severe or worsening cellulitis (spreading redness swelling and pain) after several days following an insect bite or sting (if you cannot get a quick medical appointment you should go to A&E). This could be due to secondary infection of the sting site and require antibiotics.

When to seek further medical help (from your GP) once the reaction to the sting has resolved

If you have had, or are suspected of having, a systemic reaction to an insect

bite or sting you should describe the event to your GP and you may raise certain questions:

- If you have had a systemic reaction to an insect sting you may be advised to carry a medical identification bracelet or necklace
- If you have had a severe systemic reaction you should have been supplied with an Adrenaline Auto-Injector (AAI) from your doctor or A&E department
- If prescribed you should be trained how and when to use an AAI
- If you need to use an AAI you should be aware that this is no substitute for seeking immediate medical attention
- If you have an AAI you should check the expiry date and always ensure prompt renewal with a further prescription. We recommend you sign up to the expiry alert system with the AAI company.

In all cases of a systemic reaction you should discuss with your GP the need for referral to an NHS allergy/ immunology clinic.

You will need an assessment of future risk, the performance of allergy testing to confirm allergic sensitivity and to confirm whether due to bee, wasp or other insect suggested by the history. In addition to advice on risk reduction and further guidance on need for and use of an AAI, you may be suitable for desensitisation/ immunotherapy treatment (a long-term treatment involving repeated injections to minimize the risk of a serious allergic reaction to a sting and to provide long-term protection, even years after the treatment is completed).

Stings

When you are stung, try to recognise the identity of the insect to help diagnosis.

When a bee or wasp stings, it injects a venomous fluid under the skin. Honeybees have a barbed stinger. Only the honeybee leaves her stinger (with its venom sac attached) in the skin of its victim. Since it takes two to three minutes for the venom sac to inject all its venom, instant removal of the stinger and sac may reduce harmful effects. Scrape away with a sideways movement (one quick scrape or flick) with a fingernail. Never try to use the thumb and forefinger or tweezers to pinch out the stinger since this can force more venom from the sac down into the wound.

Wasps, yellow jackets and hornets have a lance-like stinger without barbs and can sting repeatedly. They should be brushed off the skin promptly with a quick movement, before quietly and immediately leaving the area.

Sting avoidance strategies

(to reduce the chance of being stung again)

Insect repellents may be applied to exposed parts but may not work against stinging insects. Insecticide aerosols (wasp sprays) are effective for killing wasps indoors but caution should be exercised not to inhale the spray, especially around children due to potential toxicity.

People allergic to stings should practice certain simple precautions to avoid being stung:

Outdoors

Wasp nests should be removed only by a professional exterminator. Never try to burn a nest or flood a nest with water that will make stinging insects angry and more aggressive!

When outdoors, keep food covered, especially ripe fruit and soft drinks. Any scent of outdoor cooking, eating, feeding pets or presence of garbage cans, will attract stinging insects (especially wasps). Keep refuse in tightly sealed containers.

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Dispose of food refuse frequently (twice a week or more if possible) during late summer and early autumn when most activity occurs.

Be careful not to mow over a nest in the ground or disturb a nest in a tree or the eaves of a building. Any disturbance can provoke stinging behaviour.

Should a bee or wasp fly near you, protect your face and stand still or move slowly away or go indoors. Never strike or swing at a wasp or bee against your body since it may be trapped causing it to sting. Wasp venom contains a chemical "alarm pheromone" which is released into the air, sending signals to 'guard wasps' that come to the area and increase the risk of a sting occurring.

If a bee or wasp gets into a moving car, it is important to remain calm. The insect wants to get out of the vehicle as much as you want it to! They usually fly against car windows and rarely sting the occupants. Pull over slowly and safely and open car windows to allow the bee or wasp to escape. Serious accidents have occurred when a car driver has struck out at an insect.

If you have fruit trees in your garden pick the fruits as soon as they ripen. Avoid walking barefoot near fruit trees. Dispose of fallen fruit rotting on the ground, but beware that rotting fruit often contains wasps and should not be handled by those known to be allergic (get someone else to do it!).

Keep lawns free of clover and dandelions, which attract honeybees. Avoid close contact with flowering trees, shrubs and flowers when bees and wasps are collecting nectar. Vines, which may conceal nests, should be removed from near the house, if practical.

Individual

Since perfume, hair spray, hair tonic, suntan lotion, aftershave lotions, heavy-

scented shampoos, soaps and many other cosmetics attract insects, they should be avoided. Avoid shiny buckles and jewellery. Wear a hat and closed shoes (not sandals). Don't wear bright, coloured, loose-fitting clothing, which may attract and trap insects. Flowery prints and black especially attract insects. To avoid stings, the beekeeper wears light coloured (white, light grey, beige) clothing, preferably cotton.

Venom allergic persons should not be alone when involved in outdoor pursuits such as hiking, swimming, boating, particularly when remote from medical assistance since prompt emergency treatment may be required in the event of a sting. The person should to carry a card or identification bracelet or necklace (eg "Medic Alert" identifying the person as allergic to stings and to administer the AAI in the event of a systemic reaction.

Local reactions to wasp and bee stings, even large local reactions, do not significantly increase the risk above the normal nonallergic population of a severe general systemic reaction following a further sting. For this reason only local treatment (as below) is needed for large local reactions and therefore referral for specialist investigations are not needed if you have only developed a local reaction and no general effects such as hives, difficulty in breathing or faintness.

Treatment of local reactions to stings

For stings causing itch, pain, irritation, redness and swelling at the sting site, the following advice may be useful:

- Clean the area of the sting and maintain good hygiene around the sting site and avoid scratching in order to reduce the risk of infection
- Ice pack or cold compress to reduce discomfort and swelling
- Ammonia 1-2.5% solution in a pre-filled treatment from pharmacy may

help

- Topical antihistamine cream (to reduce itch)
- Topical steroid cream (to reduce swelling)
- Topical local anaesthetic cream/spray (to reduce pain)
- Antihistamines tablets
- Steroid tablets for larger persistent painful local swellings (prescription only, obtainable from your doctor)

Keep a supply of the above in a portable first aid box and store at room temperature.

Emergency treatment for severe systemic reactions to stings

Wasp or bee venom allergic people who have developed a general systemic reaction following a sting should have two emergency AAI kits prescribed by their doctor/nurse prescriber to be carried around at all times.

Practical demonstration of the injection technique using a trainer (dummy) auto-injector pen is essential and should be repeated for the patient.

The kit should always be immediately available. It is important that family/friends are also trained.

You should always keep two dose units of adrenaline immediately available as a repeat dose may be needed while awaiting the arrival of emergency services.

Companies that supply AAIs provide trainer devices and training videos are also available. They may also provide an alert system that notifies you when your AAI is about to become out of date (the expiry date is printed on all AAIs).

Allergy UK provides free Factsheets on [AAIs](#) and [anaphylaxis](#), available on our website.

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Venom allergy testing

Confirmation of venom allergy and identification of the relevant stinging insect can be done by measurement of allergen specific IgE antibody levels using a simple blood test. Alternatively, diagnostic skin prick testing with insect venom(s) can be performed by a doctor/nurse practitioner.

Skin prick testing alone may not be sensitive enough in which case intradermal tests may be performed. This involves a small injection of highly diluted purified venom under the skin. This needs to be performed by an experienced doctor/nurse in an NHS allergy clinic since it may cause slight discomfort and there is the very remote risk of a more severe reaction to the test.

Wasp and bee venom immunotherapy

(desensitisation treatment)

More than half of adult patients who have experienced a general systemic reaction following a sting are at great risk of a similar or worse reaction to another sting and this may be life threatening. In children, the chance of a serious reaction to another sting is less but still present.

Immunotherapy (desensitisation) is a treatment that is highly effective in preventing severe allergic reactions (greater than 95 percent effective for wasp allergy and less, around 80 percent, for bee sting allergy). Even in patients who develop a reaction the severity is greatly reduced after immunotherapy.

The treatment involves weekly injections for 12 to 15 weeks of increasing concentrations of purified commercially available insect venom to which you are allergic. This is a safe procedure when performed in an NHS clinic although you will have to wait for one hour following each injection in view of the very remote risk of developing a reaction, so that this can be recognised and treated promptly.

After up dosing, then 'maintenance doses' of venom are given every six to eight weeks for a period of three to five years. Although-time consuming this treatment is highly effective, approved by NICE and available in NHS allergy clinics within UK. Many people who are venom allergic suffer anxiety due to fear of a fatal reaction following a subsequent sting and are very reassured by the knowledge that they can be effectively cured by immunotherapy since the treatment is not only effective but lasts for many years after completing the treatment.

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Additional Resources / References

Anaphylaxis and Severe Allergic Reaction

<https://www.allergyuk.org/resources/anaphylaxis-and-severe-allergic-reaction-factsheet/>

Adrenaline Auto-Injectors

<https://www.allergyuk.org/resources/adrenaline-auto-injectors-factsheet/>

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