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Insect Bites and Stings

Most stings from bees, wasps and hornets cause pain and slight swelling but have little other effect. However, some people are allergic to stings and can develop reactions that can be life-threatening. Call an ambulance immediately if you suspect an allergic reaction soon after being stung. If you are stung by a bee and the stinger remains in the skin, scrape out the stinger as quickly as possible. Do not pluck it out as this may squeeze more venom into the skin.

Insect bites (not stings) rarely cause serious allergic reactions but can cause small itchy lumps to appear on the skin. Itch may be eased by a soothing ointment, antihistamine tablets, or steroid cream. Some insects infest pets, furniture, etc, and can cause repeated bites.

Insect stings

What is the treatment for an insect sting?

Most insect stings (of which the most common are bee and wasp stings) result in a mild local skin reaction.

If you develop a mild local skin reaction:

- A cold compress will ease any pain and help to minimise any swelling - for example, use a cold flannel or an ice pack.
- A painkiller such as paracetamol or ibuprofen may help if you have any pain.
- If it is itchy, you may not need any treatment, as itching often soon fades. However, sometimes an itch persists for hours or days. No treatment will take the itch away fully but the following may help:
 - [Crotamiton ointment](#) (which you can buy at pharmacies) is soothing when rubbed on to itchy skin.
 - [A steroid cream may be useful](#) - for example, [hydrocortisone](#) which you can buy at pharmacies or obtain on prescription. A doctor may prescribe a stronger steroid cream in some cases.
 - Antihistamine tablets may be useful if you have lots of bites. In particular, a sedative antihistamine at night may help if the itch is interfering with sleep. A pharmacist can advise on which types of antihistamine are sedative and can help with sleep

Bee stings

If you are stung by a bee, treat the mild skin reaction as above.

If the stinger is still in place - scrape it out:

- Scrape out a bee sting left in the skin as quickly as possible. Use the edge of a knife, the edge of a credit card, a fingernail, or anything similar.
- The quicker you remove the sting the better; so use anything suitable to scrape out the sting quickly.
- Do not try to grab the sting to pluck it out, as this may squeeze more venom into the skin. Scraping it out is better.

Wasp stings

Wasps do not leave a stinger in the skin when they sting. If you are stung by a wasp, treat the local skin reaction as above.

Localised allergic reaction

Some people are allergic to insect stings. If you aren't severely allergic (you can find out more about severe allergic reactions below), you will notice swelling at the site of the sting. This will probably become larger over several hours and then gradually go away over a few days. The size of the swelling can vary but can become many centimetres across. The swelling may even extend up an entire arm or leg. The swelling is not dangerous unless it affects your airway. However, if it is severe, the skin may break out in blisters.

If you develop a localised allergic reaction:

- [Take an antihistamine tablet as soon as possible](#). You can buy these at pharmacies, or obtain them on prescription. Antihistamines block the action of histamine, which is a chemical that is released by certain cells in the body during allergic reactions.
- Use a cold compress to ease pain and to help reduce swelling. For example, use a cold flannel or an ice pack.
- [Painkillers](#) such as [paracetamol](#) or [ibuprofen](#) can help to ease the pain.
- Continue with antihistamines until the swelling eases. This may be for a few days.
- See a doctor if the swelling is severe. Your doctor may prescribe a [short course of steroid tablets](#) to counter the inflammation.

The treatment for insect stings is pretty much the same as for bites. Stings are more likely to cause a serious allergic reaction, the treatment for which is described below.

Generalised allergic reaction

This is an uncommon but more serious reaction to an insect sting (and occasionally an insect bite). It happens most often with wasp stings. About a quarter of people who are stung by a wasp or bee have some kind of allergic reaction. Only in a small proportion of these is the reaction severe. [This severe reaction is called anaphylaxis](#) and without quick treatment you would soon become unconscious. A small number of people die every year as a result of this kind of severe reaction, usually because they do not obtain medical treatment quickly enough.

Symptoms of a severe reaction

These include:

- Itchy skin in many parts of the body, followed by an itchy blotchy rash that can appear anywhere on the body.
- Swelling of your face, which may extend to the lips, tongue, throat and upper airway.
- A sense of impending doom.
- Tummy (abdominal) cramps and feeling sick.
- Dilation of the blood vessels, which can cause:
 - General redness of your skin.
 - A fast heart rate.
 - Low blood pressure, which can make you feel faint or even cause you to collapse.
- Wheezing or breathing difficulty, due to an asthma attack or the throat swelling.

A severe generalised reaction will usually develop within 10 minutes of a sting.

If any symptoms of a generalised allergic reaction develop

See above, and then:

- Call an ambulance immediately.
- If you have been issued with an adrenaline (epinephrine) pen, use it as directed straightaway. (You must however still call an ambulance.)
- You may be given oxygen and injections of adrenaline (epinephrine), steroids and antihistamines in hospital to counter the allergic reaction.
- Some people require a fluid 'drip' and other intensive resuscitation.

Serious non-allergic reactions

If you have many bee or wasp stings at the same time, this can also cause serious illness. This is usually directly due to the high dose of venom, rather than to an allergy.

When should you seek medical advice?

Following an insect bite or sting, itching and redness of the skin are common and may last for up to 10 days. As long as your symptoms are improving and you feel well in yourself, you don't need to seek help. Your pharmacist can offer advice and treatment, including with antihistamine tablets.

You should seek medical advice if the sting looks infected (see below), if you develop symptoms of a generalised allergic reaction, or if you have a skin reaction that seems to be persistent and/or spreading.

Insect bites

How do you treat insect bites?

Insect bites are treated in the same way as insect stings, except you don't have to worry about scraping off a stinger.

When should you seek medical advice?

As with insect stings, you should seek medical advice if the bite looks infected, you develop a generalised allergic reaction or you have a skin reaction that persists or spreads.

Which insect bites cause swelling?

Biting insects that are common in the UK include midges, gnats, mosquitoes, flies, fleas, mites, ticks and [bedbugs](#). They can all cause swelling or red bumps on the skin.

- **A small itchy lump (papule)** which may develop up to 24 hours after a bite. This typically lasts for several days before fading away. Sometimes some redness (inflammation) surrounds each papule.
- **A wheal** is a red, slightly raised mark on the skin, which is often itchy but temporary. It may develop immediately after being bitten. A wheal lasts about two hours but is often followed by a small itchy solid lump which develops up to 24 hours later. This can last for several days before fading away.

How do you know if a bite or sting is infected?

Occasionally, a skin infection develops following a bite, particularly if you scratch a lot, which can damage the skin and allow germs (bacteria) to get in. The signs of infection will be redness and tenderness around the bite. You may also develop a yellow discharge from the area. This is called pus.

Over a period of several days, the infection may spread and, sometimes, can become serious. Redness and swelling that starts and spreads quickly is more likely to be due to allergy than to infection. If the skin around a bite becomes infected then [you may need a course of antibiotics](#). This is not commonly needed but you should seek help if your symptoms become significantly worse or worsen rapidly, or you begin to feel unwell in yourself (with fever, dizziness, chills, etc).

A word on Lyme disease

If you're bitten by a tick, you may develop a 'bull's-eye' rash over several days. This usually starts as a red mark which migrates outwards to form a bigger and bigger circle, centred around where the bite happened. You will often end up with a red central mark surrounded by a pale area of skin, with a red circle outside this, making it look like a bull's eye.

If you develop a rash like this you should see your GP, even if you weren't aware of being bitten by a tick. This could be an early sign of a condition called **Lyme disease**. Other symptoms include fever, feeling hot and shivery, tiredness, general aches and pains and sometimes neck stiffness.

If you've been bitten by a tick and you develop any of these symptoms, especially the bull's-eye rash, seek medical help. Your doctor should treat you with a course of antibiotics.

Allergies to insect stings

- In the UK most allergic reactions are caused by wasp stings.
- About a quarter of people who are stung by a wasp or bee have some kind of allergic reaction.
- You do not have an allergic reaction after a first sting by a particular type of insect. You need one or more stings to 'sensitise' your immune system.
- Sometimes it takes many stings to sensitise you. This is why some beekeepers who have had many previous stings may suddenly develop an allergic reaction to a bee sting.
- Bee and wasp venoms are different. People who are sensitised and 'allergic' to wasp venom are rarely allergic to bee venom.
- About 1 in 5 people who have had a previous generalised allergic reaction to a sting have no such reaction, or only a milder reaction, to a further sting. Therefore, if you have a generalised reaction to a sting, it does not necessarily mean it will happen again if you are stung again.
- However, the course can be variable. A series of stings may result in a generalised allergic reaction, no reaction and then another generalised allergic reaction. The reason why some people have variable reactions to a series of stings is not clear.

In short, if you have an allergic reaction to a sting, you cannot predict what will happen next time you are stung. Your doctor may refer you to an allergy clinic if a sting has caused a generalised reaction or you have developed a large local skin reaction with redness and swelling over 10 cm.

An allergy clinic will be able to do tests to confirm the type of venom or insect to which you are allergic. There are then two possible options which may be considered:

1. **Emergency medication:** you are given a supply of emergency medication to use when necessary. Some people are given a preloaded syringe of adrenaline (epinephrine) together with a written treatment plan to cope with any future reactions. You (and relatives) can be taught how and when to use the treatments provided.
2. **Desensitisation:** you are given injections of tiny amounts of venom from the type of insect that causes your allergic reaction. Repeated doses of venom over several weeks can 'desensitise' your immune system and so you will not react severely next time you are stung. This treatment involves some risk of causing a severe reaction, so it is not undertaken lightly. It is only available in certain specialised centres.

Preventing insect bites and stings

When out and about

Bites and stings most commonly occur when outside, particularly in the countryside.

The following measures are recommended to reduce the risk of stings from bees and wasps:

- Wear light-coloured clothing.
- Avoid strong fragrances, perfumes and highly scented shampoos.
- Wear shoes while outdoors and cover your body with clothing and a hat. Use gloves while gardening.
- Avoid picking fruit from the ground or trees.
- Avoid drinking out of opened drink bottles or cans to prevent being stung inside the mouth.
- Wash hands after eating or handling sticky or sweet foods outdoors (especially children's hands).
- Keep uneaten foods covered, especially when eating outdoors.
- **Always** contact professionals to remove bee or wasp nests.
- Wear full protective clothing while handling bees.

Ways to avoid bites include:

- Wear long-sleeved clothing and long trousers in places where insects are common.
- Avoid brightly coloured clothes, cosmetics, perfumes or hair sprays, which attract insects.
- Rub an insect repellent on to exposed skin area.
- A complete head covering with a plastic viewer. Where midges are common, some people wear these when out - for example, when camping next to lakes and rivers. Many camping shops sell them.

There is no evidence that eating garlic, vitamin B1 or other foods will repel insects.

Tick bites

The tick usually clings to the skin. Remove the tick as soon as possible after the bite, using fine tweezers or fingernails to grab the tick as close to the skin as possible. Pull it gently and slowly straight out and try not to squeeze the body of the tick. Clean the site of the bite with disinfectant. (Traditional methods of tick removal using a burned match, petroleum jelly, or nail polish do not work well and are not recommended.)

One type of tick carries a germ called *Borrelia burgdorferi* which causes Lyme disease. [See the separate leaflet called Lyme Disease.](#)

Tick-borne encephalitis is usually spread by bites from ticks which are infected with a virus. The infection often causes a flu-like illness that lasts about a week. This may progress to inflammation of the brain ([encephalitis](#)) or inflammation of the tissues around the brain ([meningitis](#)). Tick-borne encephalitis is uncommon in the UK but is increasingly widespread across Europe. [See the separate leaflet called Tick-borne Encephalitis Immunisation](#) for more information.

Further reading & references

- [Insect bites and stings: antimicrobial prescribing](#); NICE Guidance (September 2020)
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