

Patient information from BMJ

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Insect bites and stings

Bug bites and stings (we include spiders here, although they are not insects) are common in most parts of the world, especially in the warmer months.

The effects of these bites and stings can vary in severity from harmless to fatal. But dying from bites and stings is much more rare than most people think.

What are insect bites and stings?

Bites

A **bite** is when a bug uses its mouthparts, either to try to feed on you (usually on your blood) or in defence. Some bites happen without you feeling them, while some can be painful.

Common biting insects include:

- mosquitoes. Mosquitoes are found almost everywhere in the world, including Europe and the UK. The species that carry malaria are mostly found in parts of Africa and Asia. But many species can still give annoying bites that sometimes become infected
- ticks. Ticks are mainly found in countries with warm, damp climates. They can carry several diseases, most notably Lyme disease. Lyme disease is most commonly found in Asia, parts of North America, central Europe, and Scandinavia. It is less common in the UK and southern Europe
- kissing bugs (assassin bugs), which are found in Central and South America, and
- some flies (including horseflies).

Spider bites are much more rare than people think. Most 'spider bites' are not bites at all, but are caused by something else, such as a minor local skin infection.

Fatal spider bites are extremely rare. Most bites from venomous spiders can be treated.

When spiders do bite people it's a defensive reaction, often when someone sits on them or touches them by accident. Spiders that bite include:

- black widows, which are found in many parts of the world
- Australian redbacks, which are found mainly, but not only in Australia, and

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- brown recluse spiders, which are mostly found in the southern United States.

Stings

A **sting** is when an insect, such as a wasp or fire ant, uses a stinger to inject venom or other chemicals. Insects can sting in defence or attack. Stings are almost always painful.

Despite regular media stories about 'killer bees' and other dangerous bugs, deaths from stings are rare.

For example, in the US, a country of 330 million people, about 60 people die each year after stings from hornets, bees, and wasps.

Most of these people die because they are allergic to the stings. If you are not allergic, these stings are unpleasant but not usually dangerous.

What are the symptoms?

Sometimes when someone is stung or bitten it's obvious what has happened. For example, they might have seen the bug and felt the sting.

But some bug bites happen without you knowing. The symptoms can vary. But many bites share some of the same symptoms, which can include:

- swelling, warmth, and itching around the bite
- visible marks of a bite
- wheal and flare: this means a raised pale area surrounded by a reddish area. This is obviously harder to see on some skin tones.

Some bites - for example, from a black widow spider - can cause more severe symptoms. These can include:

- fever
- nausea and vomiting
- numbness
- shaking
- general pain
- stomach pain
- headache, and
- muscle cramps.

The symptoms above are those of bug bites without a severe, systemic (whole body) **allergic reaction**. The symptoms of a severe allergic reaction to a bug bite can be very different. If you think someone is having a severe allergic reaction, **get medical help straight away**.

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The **symptoms of a severe allergic reaction** can include:

- wheezing, unusual breath sounds, and other breathing problems. This suggests dangerous swelling in the airways
- swelling around the lips, tongue, mouth, and throat. This is very dangerous, as it can lead to breathing problems
- a fast heartbeat (called tachycardia), and
- sudden reddening of the skin.

What treatments are available?

Prevention

You can't always avoid being bitten or stung, but there are some things you can do to make it less likely in some situations. Depending on where you are, these could include:

- being aware of the times that bugs are most active. For example, mosquitoes are most active around dawn and again at dusk
- avoiding perfumes and scented cosmetics that might attract insects
- using insect repellent where appropriate
- wearing long trousers and long-sleeved tops at times when insects are most active
- looking carefully before reaching around blind corners or into the backs of cabinets to help avoid spider bites and wasp stings.

Treatment

Bites and stings that aren't serious don't need medical treatment. It's normal for swelling and itching from some bites to last up to 10 days. This can be annoying, but it's not serious. Simple things you can do include:

- not scratching around bites and stings. Scratching bites can make the swelling worse and can spread infection, and
- using creams that reduce itching. Ask your pharmacist about what might help.

Bug bites can sometimes become **infected**. If this happens it will usually clear up after a few days without treatment. But some infections need treatment with **antibiotics**.

Signs of an infected bite that needs treatment include:

- stiffness in joints near the bite, and
- redness, warmth, and swelling spreading quickly farther from the bite. Swelling and warmth are also symptoms of a bite that is not infected. But **new swelling and warmth** that develop a few days after a bite is more likely to be caused by an infection.

If you have symptoms like these, seek medical attention.

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Treatment for allergic reactions to bites and stings

If you have medical treatment for bug bites or stings, the first thing your doctor will do is check for an **allergic reaction**.

If you have had a severe allergic reaction you will need emergency treatment. This will probably include:

- injections of **adrenaline (epinephrine)**. This is a standard medicine for combatting all types of allergic reaction
- help to breathe normally. This might involve putting a tube into your lungs (this is called intubation), and
- observation. After a serious allergic reaction your doctor will want to keep you in hospital for at least a few hours to keep an eye on you.

Bites and stings with no allergic reaction

If you haven't had an allergic reaction, the treatment you need will depend on how severe your symptoms are, and on what it was that bit or stung you.

Local reactions

A local reaction just means what happens near the bite. Treatments might include:

- washing the area
- reducing swelling: for example, by cooling it with ice wrapped in a towel, or by elevating (raising) the affected area, if possible
- removing any stingers: for example, from bee stings, and
- possibly a tetanus vaccination.

Your doctor might also suggest medicines to help. These might include:

- anti-inflammatory medicines called **corticosteroids**. These can help to reduce swelling
- **antihistamines**. These medicines are usually used to treat allergic reactions. But even if you haven't had an allergic reaction, they can help to reduce itching and swelling
- simple pain relief medicines such as paracetamol, and
- **non-steroidal anti-inflammatory drugs (NSAIDs)** such as ibuprofen, to help reduce pain and swelling.

Black widow spider bites

Black widow bites can be fatal, but this is extremely rare. Most people get better after treatment.

Black widow bites usually only cause pain and swelling around the bite. But this pain can be severe, and it often needs treatment with powerful opioid painkillers.

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People who have more severe reactions might also need treatment for **muscle spasms** and raised **blood pressure**.

Antivenoms for black widow bites are available. But research suggests that they probably don't help much.

Recluse spider bites

Recluse spider bites can usually be treated with painkillers, and with antibiotics if they become infected.

Rarely, these bites can cause what's called **necrosis**. When this happens, tissue near to the bite, such as skin and muscle, doesn't get enough blood flow and dies.

Necrosis can often be treated with medicine. But some people need surgery to remove the dead tissue and to stop the necrosis from spreading.

What to expect in the future

If you have had a severe allergic reaction to a bug bite or sting, your doctor should talk with you about what to do if it happens again.

This will probably involve you needing to carry **auto-injectors**. You might have heard of these being called **EpiPens**, although this is actually a brand name and several others are available. These devices contain **epinephrine (adrenaline)**. You use them to inject yourself if you have an allergic reaction.

Your doctor might also refer you to a specialist who deals in allergies.

It's possible to have what's called **rebound** reactions as your allergy medicines wear off. If this happens, and you have symptoms such as breathing problems, or swelling or tingling in your mouth or throat, you should return to hospital.

People recover well from most types of bug bite. For example, bites that cause only local reactions usually get better by themselves after about 5 to 10 days.

The pain of a **black widow** bite can take several days to go, but long-term effects are rare.

Bites from **brown recluse spiders** can cause longer-term problems. These vary in severity, and can include visible scarring caused by necrosis.

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