CONDITION

Wasp sting

A wasp sting is a painful skin injury caused by venom injected through a wasp's stinger.

WHAT IT IS
Venom injury from a wasp puncturing the skin

BODY SYSTEM
Skin and immune system

MAIN SYMPTOMS
Sudden pain, redness, swelling, itching

WHAT CAUSES IT
Wasp venom injected through a sting

HOW IT IS DIAGNOSED
Symptoms and examination; allergy testing after systemic reactions

MAIN TREATMENT
First aid and symptom relief; adrenaline for anaphylaxis

CAN IT BE CURED?
Yes - most stings heal completely

IS IT AN EMERGENCY?
Sometimes - breathing trouble, throat swelling, dizziness, or collapse

LONG-TERM OUTLOOK
Most settle within days without lasting harm

Overview

A wasp sting happens when a wasp punctures your skin with its stinger and injects venom. The venom causes pain and inflammation. Inflammation is the body's normal response to injury and may include redness, warmth, itching, and swelling.

Most wasp stings cause a small reaction around the sting and improve with simple care. Some people develop a large local reaction, with swelling that spreads well beyond the sting. A smaller number have an allergic reaction affecting areas away from the sting.

The most serious allergic reaction is anaphylaxis. This can affect breathing and blood circulation and needs emergency treatment. Multiple stings can also be dangerous because they deliver a larger amount of venom, even in someone who is not allergic.

Unlike honeybees, wasps can usually pull out their stinger and sting again. A stinger left in the

skin may mean the insect was a bee rather than a wasp, although identifying the insect is not always possible.

Symptoms

A typical reaction starts immediately or within a few minutes. You may feel a sudden sharp or burning pain, followed by a raised red or pale area. Mild swelling and itching can develop around it.

These symptoms usually stay close to the sting. Pain often eases within hours, while redness, itching, or swelling may take several days to disappear.

A large local reaction causes more extensive swelling. For example, a sting on a finger could lead to swelling across much of the hand or arm. The swelling may increase for one or two days before it begins to settle. This can look concerning, but it does not necessarily mean the area is infected.

An allergic reaction may cause symptoms away from the sting, including:

Anaphylaxis can sometimes occur without obvious skin symptoms. Breathing difficulty, throat swelling, severe dizziness, or collapse after a sting should always be treated as an emergency.

- Widespread hives or an itchy rash
- Swelling of the lips, tongue, face, or throat
- Wheezing, coughing, or difficulty breathing
- A tight throat, hoarse voice, or trouble swallowing
- Dizziness, confusion, fainting, or collapse
- Abdominal cramps, vomiting, or diarrhoea, especially with other symptoms

Causes and risk factors

The immediate pain and swelling come from substances in wasp venom. Your immune system also reacts to the venom, causing inflammation around the sting.

A true venom allergy develops when the immune system mistakenly treats part of the venom as a major threat. An allergic reaction can happen even if earlier stings caused only mild symptoms. It is also possible to have been stung before without remembering it.

Your chance of being stung is higher if you spend time near wasp nests, uncovered rubbish, fallen fruit, outdoor food, or sweet drinks. Wasps can enter open cans or bottles, making stings

inside the mouth possible.

People who work outdoors or around gardens, roofs, refuse, or pest control may have more exposure. Disturbing a nest can lead to multiple stings.

Having a large local reaction does not automatically mean a future sting will cause anaphylaxis. However, anyone who has had symptoms throughout the body after a sting should have medical follow-up because future reactions cannot be predicted from appearance alone.

Diagnosis

Most wasp stings are diagnosed from what happened and how the skin looks. No test is usually needed for a mild local reaction.

A clinician may ask how quickly symptoms began, whether they occurred away from the sting, and whether breathing, circulation, or digestion was affected. These details help distinguish a local reaction from anaphylaxis.

Redness and swelling soon after a sting are usually caused by venom and inflammation, not infection. Infection becomes more likely if pain and redness start worsening after initial improvement, pus appears, or you develop fever or spreading red streaks.

If you have had a reaction affecting your whole body, an allergy specialist may arrange skin tests or a blood test for venom-specific immunoglobulin E, often called specific IgE. These tests look for signs that your immune system is sensitised to particular insect venoms. Test results must be considered alongside the symptoms you experienced; a positive result alone does not prove that a sting caused anaphylaxis.

Treatment and management

Move away from the area to reduce the chance of further stings. If a stinger is visible, remove it promptly. Wasps usually do not leave one behind. Wash the area with soap and water, and remove rings or other tight items before swelling increases.

A cold pack wrapped in a cloth can be placed on the area for short periods. Raising a swollen arm or leg may also help. Avoid scratching because broken skin is more likely to become infected.

Pain relievers, oral antihistamines, or anti-inflammatory skin creams may help some people. Follow the product instructions and ask a pharmacist or clinician what is suitable if you are pregnant, take other medicines, have ongoing health conditions, or are treating a child.

A large local reaction may need medical assessment if swelling is severe, continues to spread, or interferes with movement, sleep, eating, or vision. Treatment aims to control inflammation and discomfort rather than remove the venom, which cannot be drawn out once injected.

Anaphylaxis requires immediate adrenaline, also called epinephrine. If you have been prescribed an adrenaline auto-injector, use it as instructed at the first signs of anaphylaxis and call emergency services. Do not wait to see whether symptoms settle. A second phase of symptoms can occasionally occur after apparent improvement, so medical observation may be needed.

People with a confirmed venom allergy may be offered venom immunotherapy. This specialist treatment uses carefully controlled exposure to purified venom to reduce the risk of a severe reaction to future stings. It is not usually needed for an uncomplicated local reaction.

Complications

Most stings heal without complications. Problems that can occur include:

A sting inside the mouth or throat can be dangerous because local swelling may narrow the airway. A sting directly to the eye also needs prompt specialist assessment.

Multiple stings can cause nausea, weakness, headache, muscle injury, blood cell damage, or kidney problems. The risk is influenced by the number of stings, body size, age, and general health. There is no single safe number that applies to everyone.

- Anaphylaxis, a rapid allergic reaction affecting breathing or circulation
- Extensive swelling that limits movement or affects the eye or mouth
- Toxic effects after many stings
- Skin infection, usually after scratching or damage to the skin
- Ongoing anxiety about outdoor activities or another sting

Prevention

Wasp stings cannot always be prevented, especially outdoors. You can lower the chance of being stung by wearing shoes outside, covering food and drinks, keeping bins closed, and checking open cans or bottles before drinking.

Move away calmly if a wasp comes near you. Swatting at it or trying to crush it against your skin may prompt a sting. Do not approach or disturb a nest. A nest close to a home, school, or

busy area should be assessed by a suitable pest-control service.

If you have had anaphylaxis or another body-wide reaction, an allergy specialist can help you plan for future stings. This may include carrying adrenaline auto-injectors, learning when and how to use them, wearing medical identification, and considering venom immunotherapy.

Living with it and what to expect

For most people, pain improves within hours and the skin returns to normal over several days. Itching and swelling may last longer than the initial pain. A large local reaction can expand over the first day or two and may take a week or more to settle.

The appearance of a sting can change as it heals. Mild redness, warmth, and tenderness during the first few days can be part of inflammation. A mark or patch of changed skin colour may remain temporarily.

A previous mild sting does not guarantee that every future sting will be mild. At the same time, having a large area of swelling does not mean that anaphylaxis is certain. Routine follow-up is reasonable if reactions are becoming larger, you are unsure whether symptoms were allergic, or fear of another sting is affecting daily life.

After a serious allergic reaction, longer-term care focuses on being prepared rather than avoiding all outdoor activity. With an emergency plan and specialist care where appropriate, many people continue their usual work, travel, exercise, and leisure activities.

When to get medical help

Call emergency services now if a sting is followed by difficulty breathing, wheezing, throat tightness, swelling of the tongue or throat, severe dizziness, confusion, fainting, or collapse. Widespread hives together with breathing, circulation, or digestive symptoms may also be anaphylaxis.

Use a prescribed adrenaline auto-injector immediately if your emergency plan tells you to do so. Emergency assessment is still needed even if you improve.

Get urgent medical help for a sting inside the mouth or throat, a sting to the eye, or many stings at once. Prompt advice is also important if swelling around the face or neck is increasing.

Arrange routine medical advice if redness, pain, or swelling is worsening after initially improving; there is pus, fever, or a spreading red line; symptoms are not settling; or swelling is interfering with normal activities.

You should also arrange follow-up after any reaction that caused widespread hives, facial swelling, breathing symptoms, faintness, or vomiting away from the sting. This assessment can help decide whether allergy testing, adrenaline auto-injectors, or venom immunotherapy may be appropriate.

Common questions

How long does swelling from a wasp sting last?

Small reactions often improve over a few days. A large local reaction may become more swollen during the first 24 to 48 hours and can take a week or longer to settle. Seek advice if it keeps worsening, becomes very painful, or is accompanied by fever or pus.

How can I tell whether it was a bee or a wasp?

Honeybees often leave a barbed stinger in the skin, while wasps usually do not and can sting more than once. This is not a perfect way to identify the insect. Immediate care is similar unless an allergic reaction develops.

Does a large swelling mean I am allergic?

It may be a large local allergic reaction, but it is different from anaphylaxis. Anaphylaxis affects other parts of the body, particularly breathing or blood circulation. Large swelling alone does not show how severe a future reaction would be.

Can a wasp sting become infected?

Yes, although early redness and warmth are more often caused by inflammation than infection. Infection is more likely when symptoms worsen after a period of improvement, pus develops, or fever and spreading redness appear.

Will an antihistamine like cetirizine or loratadine stop anaphylaxis?

No. Antihistamines may reduce itching or hives, but they do not treat dangerous breathing or circulation problems. Adrenaline is the first emergency treatment for anaphylaxis.

Can a wasp sting twice?

Yes. A wasp usually keeps its stinger and can sting repeatedly. Move away from the area rather than trying to swat or catch it.

Sources

- National Health Service. Insect bites and stings

- National Institute for Health and Care Excellence. Clinical Knowledge Summary: Insect bites and stings
- Resuscitation Council UK. Emergency Treatment of Anaphylaxis: Guidelines for Healthcare Providers . 2021
- Golden DBK, Demain J, Freeman T, and colleagues. "Stinging insect hypersensitivity: A practice parameter update 2016." Annals of Allergy, Asthma & Immunology . 2017;118(1):28-54
- Sturm GJ, Varga EM, Roberts G, and colleagues. "EAACI guidelines on allergen immunotherapy: Hymenoptera venom allergy." Allergy . 2018;73(4):744-764
- Australasian Society of Clinical Immunology and Allergy. Allergic reactions to bites and stings