CONDITION

Jellyfish stings

A jellyfish sting is a skin injury caused when venomous stinging cells touch the body.

WHAT IT IS
Venomous injury from jellyfish stinging cells

BODY SYSTEM
Skin, nervous system, heart and circulation

MAIN SYMPTOMS
Burning pain, raised welts, redness, itching

WHAT CAUSES IT
Venom injected by microscopic stinging cells

HOW IT IS DIAGNOSED
Exposure history and skin examination

MAIN TREATMENT
Tentacle removal, heat, pain relief, emergency support

CAN IT BE CURED?
Yes - most stings heal completely

IS IT AN EMERGENCY?
Sometimes - breathing trouble, collapse, or severe widespread symptoms

LONG-TERM OUTLOOK
Most people recover fully within days to weeks

Overview

A jellyfish sting happens when tiny stinging cells on a jellyfish or its tentacles touch your skin. These cells contain microscopic structures that fire into the skin and release venom.

Most jellyfish stings cause immediate pain and a raised, red or discoloured rash. They improve with first aid and time. Some species, particularly certain box jellyfish, can inject venom that affects breathing, the heart or the nervous system. Serious reactions are uncommon overall, but the risk depends on the species, location, amount of skin exposed and person's size and health.

Portuguese man-of-war and similar sea creatures are not true jellyfish, but their stings cause similar injuries and are managed in much the same way. First-aid advice can differ by species and region. Follow instructions from local lifeguards or emergency authorities when available.

A detached tentacle can still sting. Jellyfish that look dead or have washed onto a beach may also retain active stinging cells.

Symptoms

Symptoms usually begin during or soon after contact. The sting may feel sharp, burning, throbbing or like an electric shock.

Common symptoms include:

Skin pain often settles over several hours, although itching and visible marks can last longer. Some people develop a delayed itchy rash days or weeks later. Skin colour changes may remain for weeks or months.

A more serious reaction can affect the whole body. Symptoms may include nausea, vomiting, headache, dizziness, muscle cramps, weakness, sweating or a feeling of intense restlessness. Breathing difficulty, chest pain, confusion, collapse or an abnormal heartbeat require emergency help.

Anaphylaxis is a severe allergic reaction. Warning signs include trouble breathing, wheezing, swelling of the tongue or throat, widespread hives, faintness or collapse.

Some small box jellyfish can cause Irukandji syndrome. The initial skin sting may seem minor, followed later by severe back, abdominal or muscle pain, sweating, vomiting, agitation, breathing difficulty or heart and blood-pressure problems. This is an emergency.

- Pain, burning or stinging at the contact site
- Red, purple or brown lines following the shape of tentacles
- Raised welts, swelling or itching
- Tingling, numbness or tenderness

Causes and risk factors

Jellyfish have specialised stinging cells called cnidocytes. Each contains a venom-delivering structure called a nematocyst. Touch, pressure or chemical changes can trigger it to fire.

The effect of a sting is influenced by:

Swimming during a seasonal jellyfish increase, entering water after warnings, or swimming without protective clothing raises the chance of contact. Tentacles can be difficult to see, and some extend far from the jellyfish body.

Children and smaller adults may receive more venom relative to their body size when a large area is stung. People with heart or breathing conditions may also be less able to tolerate a severe reaction. However, anyone can have a serious sting.

- The jellyfish species and strength of its venom
- How much skin contacted the tentacles
- How long tentacles remained on the skin
- The person's body size, age and general health
- Whether the person develops an allergic reaction

Diagnosis

A jellyfish sting is usually diagnosed from what happened and the appearance of the skin. Linear or whip-like welts after contact with seawater are typical, but the exact species is often unknown.

There is no routine blood test or scan that confirms a simple jellyfish sting. Photographing the skin and, from a safe distance, the sea creature may help with identification. Do not handle the animal or collect tentacles.

If symptoms are severe, hospital tests may include heart monitoring, an electrocardiogram, blood tests and checks of breathing, blood pressure and organ function. These tests look for complications rather than proving that a sting occurred.

Other conditions can resemble a sting, including coral cuts, sea-lice reactions, contact dermatitis and infections. Medical assessment may be needed when the cause is unclear or the skin changes continue to worsen.

Treatment and management

First, leave the water carefully. This reduces the risk of further stings and drowning if pain, weakness or dizziness develops. Alert a lifeguard if one is present.

Call emergency services if the person has breathing difficulty, chest pain, collapse, confusion or severe widespread symptoms. If they are unresponsive and not breathing normally, begin cardiopulmonary resuscitation, or CPR, and use an automated external defibrillator if available.

For a sting without emergency symptoms:

Fresh water can cause unfired stinging cells from some species to release more venom, so

seawater is generally preferred for rinsing ordinary skin stings. This does not apply when emergency authorities give different instructions for a known local species.

Vinegar advice is species-specific. It is recommended for certain dangerous box jellyfish in some regions, including tropical Australia, but it may be unhelpful for other stings. Do not treat vinegar as a universal remedy. Use it when local guidance recommends it for the likely species.

Do not urinate on the sting. Urine is not a reliable treatment and may trigger further venom release. Alcohol, forceful scraping and pressure bandages are also not general treatments for jellyfish stings.

Pain-relieving medicines and medicines for itching may be appropriate after a mild sting. A pharmacist or clinician can help you choose a suitable option. Severe pain, allergic reactions and effects on the heart or breathing need treatment in an emergency department. Treatment may include oxygen, allergy medicines, intravenous fluids, heart support or antivenom where one exists for the species.

- Avoid rubbing, scraping or massaging the area
- Follow local lifeguard or emergency-service instructions
- Rinse away loose material as locally advised
- Remove visible tentacles carefully with tweezers or protected hands
- Use hot water that is comfortably hot, not scalding, to ease pain
- Keep watching for symptoms elsewhere in the body

Complications

Most stings heal without lasting harm. Possible complications include persistent pain, delayed itchy rashes, changes in skin colour and, less often, scarring.

Scratching or broken skin can allow a bacterial infection to develop. Increasing warmth, swelling, pus, worsening tenderness or fever can suggest infection rather than the normal early reaction.

Severe venom effects can cause breathing failure, abnormal heart rhythms, dangerously high blood pressure, heart injury or cardiac arrest. A painful or disabling sting in the water can also lead to drowning.

Anaphylaxis can occur even when the local skin reaction does not look severe. Previous stings do not reliably predict whether a future reaction will be mild or serious.

Stings involving the eye may damage its surface and require urgent specialist assessment.

Prevention

Jellyfish stings cannot always be prevented because tentacles may be nearly invisible and can drift away from the animal.

You can reduce your risk by:

Sunscreen does not provide dependable protection from stinging cells. Ordinary swimwear only protects the skin it covers, and tentacles may still contact exposed areas.

Protective clothing lowers risk but cannot guarantee that a sting will not occur. In areas known for highly venomous box jellyfish, local swimming enclosures and seasonal restrictions are especially important.

- Following beach closures, warning signs and lifeguard advice
- Avoiding water during known jellyfish blooms or high-risk seasons
- Wearing a full-body stinger suit where local authorities recommend one
- Not touching jellyfish or tentacles on the beach
- Teaching children to keep away from washed-up sea creatures
- Carrying regionally recommended first-aid supplies in high-risk areas

Living with it and what to expect

A mild sting usually causes its worst pain early. Pain commonly improves over hours, while welts, tenderness and itching may continue for several days. Skin discolouration can take weeks or months to fade.

A delayed rash may appear after the original area seemed to be healing. This can reflect an immune response to venom rather than another sting. It is worth arranging a routine medical review if the rash is persistent, keeps returning or interferes with sleep.

Most people return to normal activities once pain, weakness and dizziness have settled. Avoid swimming again while you still feel unwell or while open skin is at risk of irritation and infection.

Recovery after a severe sting is less predictable. People with heart, breathing, kidney or muscle complications may need follow-up and a gradual return to activity. Some people also feel anxious about entering the sea again. This often eases with time, clear local safety information and a planned return to the water.

A past sting does not make you immune. It also does not mean every future sting will cause the same reaction.

When to get medical help

Call emergency services now if a sting is followed by:

Get urgent medical advice for a sting to the eye, mouth or throat; severe pain that is not easing; a large area of affected skin; or symptoms that begin to spread beyond the sting site. A young child with an extensive sting should also be assessed promptly.

Arrange routine follow-up if the rash keeps returning, marks are not improving, itching remains difficult to control, or you develop possible infection signs such as increasing redness, warmth, pus or fever.

- Trouble breathing, wheezing, or tongue or throat swelling
- Collapse, fainting, confusion or a seizure
- Chest pain or an abnormal heartbeat
- Severe pain affecting several parts of the body
- Repeated vomiting, heavy sweating or marked agitation
- Unresponsiveness or abnormal breathing
- Suspected contact with a dangerous box jellyfish

Common questions

How long does a jellyfish sting last?

The strongest pain often improves within hours. Welts and itching may last several days, while skin colour changes can remain for weeks or months. Severe stings and delayed immune reactions can take longer to settle.

Should I pee on a jellyfish sting?

No. Urine does not reliably neutralise jellyfish venom and may cause remaining stinging cells to fire. Follow local first-aid guidance instead.

Should I put vinegar on it?

Not automatically. Vinegar is recommended for certain box jellyfish in some regions but not for every species. Use it when local lifeguards or emergency authorities recommend it for the likely jellyfish.

Can a dead jellyfish still sting me?

Yes. Stinging cells can remain active after a jellyfish dies. Detached tentacles and pieces

washed onto a beach may also sting, so do not touch them with bare skin.

Can I swim again after a sting?

Wait until pain, weakness, dizziness and other symptoms have resolved. Avoid exposing broken or badly irritated skin to seawater. Check local warnings before returning, because more jellyfish may be present.

Can I have an allergic reaction hours later?

Serious allergic reactions usually begin soon after contact, but symptoms can sometimes be delayed. Seek emergency help for breathing trouble, throat or tongue swelling, faintness or widespread hives. A later itchy rash without these symptoms is usually less urgent but may need routine review.

Sources

- Australian Resuscitation Council and New Zealand Resuscitation Council. Guideline 9.4.5: Envenomation - Jellyfish Stings
- Centers for Disease Control and Prevention. CDC Yellow Book: Poisonings, Envenomations, and Toxic Exposures During Travel
- NHS. Jellyfish and other sea creature stings
- American Heart Association and American Red Cross. 2024 Guidelines for First Aid
- Wilderness Medical Society. Practice Guidelines for the Treatment and Prevention of Jellyfish Envenomations: 2014 Update. Wilderness & Environmental Medicine