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Insect bites and stings

Insect bites and stings can be simply divided into 2 groups: venomous and non-venomous. A sting is usually from an attack by a venomous insect such as a bee or wasp, which uses this as a defence mechanism by injecting toxic and painful venom through its stinger. Whereas non-venomous insect bites pierce the skin to feed on your blood. This usually results in intense itching.

What causes insect bites and stings?

Common biting and stinging insects	
Venomous (stingers)	Non-venomous (biters)
<ul style="list-style-type: none"> • Bees • Wasps • Hornets • Yellow jackets • Fire ants 	<ul style="list-style-type: none"> • Mosquitoes • Fleas • Ticks • Lice • Scabies • Bed bugs

What are the signs and symptoms?

For most people, insect bites or stings cause a mild reaction. Venomous stings usually cause a stinging sensation or pain with redness and swelling of the area. Itch is usually not a concern. In some people who are sensitive to insect venom, a sting may cause a severe allergic reaction known as [anaphylaxis](#). This results in facial swelling, difficulty breathing and an itchy rash ([urticaria](#)) over most of the body. This can be life-threatening so immediate medical attention and treatment needs to be sought.

Non-venomous insect bites usually cause little more than an intense irritating itch ([papular urticaria](#)) for most people. The bite may show up as a small raised red spot. It may blister. Unfortunately the urge to scratch usually results in an open sore that may become infected and take longer to heal. In some parts of the world, insect bites can be more problematic as the insects are carriers or vectors of diseases such as malaria, [Lyme disease](#), [rickettsial disease](#) and Dengue fever.

Insect bites





What is the treatment of insect bites and stings?

If the reaction is mild, insect stings should be treated by first removing the stinger. This is necessary as the stinger continues to pump venom from its sack until it is empty or removed. The stinger should be removed by using a firm edge such a knife or credit card that is placed against your skin next to the embedded stinger. Apply constant firm pressure and scrape across the skin surface to remove the stinger. This is preferred to using tweezers or fingers, which can accidentally squeeze more venom into the patient. The site should be cleaned with a disinfectant and an ice or cold pack applied to reduce pain and swelling. Topical steroid cream or calamine lotion may be applied several times a day until symptoms subside. If necessary, oral antihistamines can also be taken.

If an insect sting causes a severe reaction or [anaphylaxis](#), urgent medical attention should be sought. If a patient is known to have an allergy to insect stings they may carry with them an allergy kit containing adrenaline (epinephrine). This can be used in such circumstances and may prove to be life saving. A medic alert tag is a wise precaution for those at risk from [anaphylaxis](#).

The main treatment aim of insect bites is to prevent itching. Topical and oral [antihistamines](#), calamine lotion, and topical [local anaesthetic](#) agents may provide relief. As generally only brief treatment is required moderate potency [topical steroids](#) may also be used to provide a longer effect. Bites from insects carrying disease usually require specific antimicrobial therapy to treat the disease.

Can insect stings and bites be prevented?

The following simple measures can prevent insect stings and bites:

- Avoid perfume and bright-coloured clothing to reduce the risk of bee stings
- Control odours at picnics, garbage areas etc that can attract insects
- Destroy or relocate hives or nests close to your home
- Don't leave pools of stagnating water as these attract mosquitoes
- Electrical insect repelling devices and lit coils may be effective
- Cover all parts of the body with clothing, hats, socks, and gloves if going into areas where there is a high likelihood of getting bitten or stung
- Maintain good personal and household hygiene
- De-flea cats, dogs and other household pets regularly
- Use insect repellents, which are readily available from pharmacies or supermarkets. Those containing D.E.T (diethyltoluamide) are the most effective.
- Permethrin can be applied to clothing to give protection for two weeks, through two washings. It can also be applied directly to exposed skin keeping the insects away for a few days.
- Thiamine (vitamin B1) can be used as a systemic insect repellent (the skin has a characteristic smell)

Related information

References:

Book: Textbook of Dermatology. Ed Rook A, Wilkinson DS, Ebling FJB, Champion RH, Burton JL. Fourth edition. Blackwell Scientific Publications.

On DermNet NZ:

- [Spider bites](#)
- [Papular urticaria](#)
- [Anaphylaxis](#)
- [Urticaria](#)

Other websites:

- [Insect bites](#) - emedicine dermatology, the online textbook
- [Bee and Wasp Stings](#) - emedicine consumer health

Books:

See the [DermNet NZ bookstore](#)

Author: Vanessa Ngan, staff writer

DermNet does not provide an on-line consultation service.
If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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