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## Spider bites

Spiders belong to the class of mainly terrestrial Arthropods known as Arachnida. Medically significant classes of arachnids include spiders, ticks/mites and scorpions. Unfortunately through myths, legends and nowadays media, spiders have gained a reputation of being dangerous and harmful, and in some people instil a psychological fear known as arachnophobia. In reality, very few are dangerous to man and media reports exaggerating the dangers of spider bites are far out of proportion to the actual threat they pose.

### What spiders bite and may be harmful to man?

The most important groups of spiders based on the medical consequences if bitten by one are shown in the table below.

Genus name	Common Name	Country commonly found in where bites reported
<i>Latrodectus</i> spp.	Widow spiders <ul style="list-style-type: none"> <li>• Black widow (North America)</li> <li>• Katipo (New Zealand)</li> <li>• Red-back (Australia)</li> <li>• Shoe-button (South Africa)</li> </ul>	Found throughout the world and known by many different common names according to country
<i>Loxosceles</i> spp.	Violin spiders Recluse spiders Brown recluse spiders Fiddleback spiders	South America, United States, Australia, commonly in the tropics
<i>Tegenaria agrestis</i>	Hobo spider	United States
<i>Cheiracanthium</i>	Yellow sac spider	United States
<i>Phoneutria</i>	Banana spider	Central and South America
<i>Atrax</i> and <i>Hadronyche</i>	Australian Funnel-Web spider	Australia
<i>Lampona cylindrata</i>	White-tailed spider	Australia, New Zealand

The venom produced by spider bites is generally either neurotoxic or cytotoxic. Web dwellers tend to have neurotoxic venom and non-web dwellers cytotoxic venom. Spiders of the *Latrodectus* genus produce neurotoxic venom, while the violin spider and yellow sac spider produce cytotoxic venom.

### Spiders



Brown recluse spider



White tailed spider

## What are the signs and symptoms of spider bites?

The signs and symptoms of a spider bite depend on many factors, these include:

- Neurotoxic or cytotoxic venom
- Amount of venom injected
- Health of the patient (e.g. any allergies)
- Age of the patient (small children and elderly are more adversely affected)
- Site of the bite

The signs and symptoms from a bite from a spider with neurotoxic venom differ to those produced by a spider with cytotoxic venom. The severity of the symptoms depends on the species of spider as the symptoms of bites from different species of *Loxosceles* can range from unremarkable (requiring no care), localised (usually self-healing), dermonecrotic (slow-healing ulcerated lesion requiring treatment), to systemic (vascular, renal damage and sometimes life-threatening).

Features of neurotoxic venom bite	Features of cytotoxic venom bite
<ul style="list-style-type: none"> <li>• Affects neuromuscular junctions</li> <li>• Severe pain in chest and abdomen (cramp-like pains)</li> <li>• Breathing difficulties, heart palpitations</li> <li>• Nausea and vomiting</li> <li>• Sweating, fever, excessive salivation</li> <li>• Increased blood pressure</li> <li>• Rash may develop</li> <li>• Symptoms usually start about 1–3 hours after being bitten</li> <li>• More severely affected are children and elderly</li> </ul>	<ul style="list-style-type: none"> <li>• Affects cellular tissue and usually restricted to area of the bite</li> <li>• Initial bite is painless but symptoms develop about 2–8 hours later, area becomes painful and swollen</li> <li>• Eventually a blister may form over a necrotic lesions which then sloughs to create an ulcerated wound (up to 10cm)</li> <li>• Ulcer will heal over months and leave behind a scar. In extreme cases, skin grafts may be necessary.</li> <li>• In severe cases, systemic conditions may occur, e.g. thrombocytopenia, DIC, renal failure</li> </ul>

## What are the dermatological features of spider bites?

### Widow spider bites

The skin around the site of the bite is red and two fang marks may be visible where the skin was penetrated. In untreated cases a rash may develop after several days. Systemic symptoms are of more diagnostic value.

## Violin or recluse spider bites

The dermatological features of these spider bites depend on the severity of the bite. In self-healing wounds, the bite site gets no worse than being swollen and red. With more serious bites a "bull's eye" wound may form. This is characterised by a central red swollen blister that is separated from a peripheral bluish region by a white zone of firm swelling. If the bite turns a purplish colour within the first few hours, this usually indicates severe localised tissue death (necrosis) may occur. Over days the blister forms a scab, which hardens and falls off to leave behind an ulcerated depression. Healing can take weeks to months.

Interestingly, it appears that bites that become systemic do not also develop necrotic wounds. It is thought that in necrotic wounds the venom is localised in the tissue whereas in systemic reactions the venom is distributed quickly throughout the body without any localised effects.

## Other spider bites

Spider	Dermatological features
Hobo	Dermonecrotic lesions similar to violin/recluse spider bites
Yellow sac	Painful, red, swollen and itchy bite that may produce a slightly necrotic wound that heals without scarring
Banana	Few dermatological features, mainly neurotoxic symptoms
Funnel web	Sudden onset of neurotoxic symptoms predominate, dermatological features insignificant in comparison
White tail	May cause redness and blistering but usually do not cause ulceration. Has been implicated in some cases of necrotising arachnidism (skin breakdown or ulceration following spider bites) but seldom confirmed.

### Spider-bite (presumed to be due to white-tailed spider)



Day 1



Day 2



Day 3

## What is the treatment for spider bites?

One of the most important aspects in treating spider bites is to try and identify the offending spider. The venom of spider bites is quite variable hence identification of the spider can be of value in determining the management of the condition.

General measures that should occur after a spider bite include:

- Wash the area well with soap and water
- Apply a cold flannel or ice pack wrapped in cloth to the site
- Give paracetamol for pain
- Seek immediate emergency care for further treatment

Depending on identification of the offending spider and the severity of the bite treatment may include:

- Muscle relaxants
- Stronger pain relievers
- Antibiotics to prevent infections and antihistamines to reduce swelling
- Supportive care
- Antivenin

Specific treatment for bites from certain spiders include:

- Intravenous calcium gluconate alternating with methocarbamol to relieve muscle cramps caused by spiders belonging to the *Latrodectus* genus (e.g. black widow).
- Antivenin is available for bites by spiders of the *Latrodectus* and *Loxosceles* genera and is very effective if given soon after the bite.
- Hydroxyzine ([antihistamine](#)) may be given to alter the necrotic lesion of bites from spiders of the *Loxosceles* genus.
- It is possible that [systemic steroids](#) may be of benefit.

#### Related information

##### References:

- Book: Textbook of Dermatology. Ed Rook A, Wilkinson DS, Ebling FJB, Champion RH, Burton JL. Fourth edition. Blackwell Scientific Publications.
- [Vetter RS, Visscher PK. Bites and Stings of medically important venomous arthropods.](#) Also published International Journal of Dermatology 1998;37:481-496.

##### On DermNet NZ:

- [Erosions and ulcers](#)
- [Insect bites and stings](#)

##### Other websites:

- [Spider Bites](#) - emedicine dermatology, the online textbook
- [Brown Recluse Spider Bite](#) - emedicine consumer health

##### Books about skin diseases:

See the [DermNet NZ bookstore](#)

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If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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