



Spiders: Brown Recluse, Black Widow, and Other Common Spiders

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Spiders along with insects and their close relatives are members of the animal phylum Arthropoda. Spiders as a group are further separated and placed in the scientific 'Class' Arachnida (along with ticks, mites, scorpions, and similar animals that have 2 major body regions, 8 legs, and no antennae or wings).

Throughout recorded history spiders have been regarded generally as creeping, crawling, loathsome, and venomous beasts. Folklore, ignorance, superstition, and the bizarre appearance of the spiders themselves have contributed to these impressions.

Folklore would have some believe that all spiders are venomous. The facts are that, except for two very small groups (families), all spiders do possess venom glands which void through small holes near the tips of their fangs. However, most spiders do not bite humans, and with a few exceptions, spider venoms are not harmful to humans or other mammals. Spiders are important predators which help keep insect and some other arthropod pest populations in check. This beneficial role far outweighs the hazard posed by the few spiders that occasionally bite humans.

Some people have a phobia of spiders (arachnophobia). Some of these fears of spiders are because people believe they are aggressive and will attack humans with little or no provocation. Nothing could be further from the truth. Only one spider in the world is considered aggressive—the funnel-web spider of Australia, *Atrax robustus*, which reputedly will attack without provocation. No other spider is overly aggressive unless cornered, injured, or otherwise overly provoked. It is true that many North American spiders will rush over their webs to investigate any disturbance. This is a natural hunting reaction, as many species of spiders employ webs to entrap other animals for food.

It is a false impression that the bites of known dangerous spiders always cause a very serious condition or even death. The truth is that fatalities from spider bites are rare, and the consequences of the bite may range from trivial to severe. The severity of the reaction to spider venom is dictated by many factors. The amount of venom injected may vary from almost none to a full dose, depending on the site of the bite, the length of time the fangs are in the tissues, and the quantity of venom injected. Also, the reaction of different individuals to the same type and amount of venom may vary widely, since age, general state of the victim's health, and differences in genetics would likely determine the severity of reaction.

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In Oklahoma, only two spiders, the brown recluse and black widow, are considered dangerous to people. However, tarantulas, jumping spiders, wolf spiders, garden spiders, and numerous other species found in the State are frequently mistaken for venomous spiders. These spiders may be formidable, scary or repulsive to some, but to most people their bite is less harmful than a bee sting.

Brown Recluse (Fiddleback) (*Loxosceles reclusa*)

The brown recluse spider (Figure 1), also known as the brown spider or fiddleback spider, is a soft bodied, secretive species that is light tan to dark brown in color. The adult spider is about half an inch in length and has long, delicate legs which are covered with short, dark hairs. Distinguishing characteristics are the presence of three pairs of eyes arranged in a semicircle on the forepart of the head, a violin-shaped dark marking immediately behind the semicircle of eyes (Figure 2) (with the neck of the violin pointing towards the bulbous abdomen), and the characteristically long legs.



Figure 1. Brown recluse spider.



Figure 2. Eye pattern and fiddle markings on the brown recluse spider.

The immature stages closely resemble the adults except for size and often a slightly lighter color.

Life Cycle and Habits

The eggs are deposited in off-white silken cases in sheltered, dark areas where the spiders live. The cases are approximately one-quarter to one-third of an inch in diameter. In the summer, spiderlings emerge from egg cases in 24-36 days. Forty or more spiderlings develop from each egg case. However, before leaving the egg case the spiderlings molt once and then abandon the egg case. Development is relatively slow and is generally influenced by weather conditions and the availability of food. However, with adequate food and mild temperatures, the brown recluse spider can reach maturity in 10-12 months. The spiders are capable of surviving for long periods of time without food or water. Female spiders may live from one to two years, but some have reached four to five years. During her life one to five egg sacs are produced.

Habitat

The spider is most active at night when it comes out in search of food. During the day, it rests in quiet, undisturbed places. In homes, spiders may be found in bathrooms, bedrooms, closets, basements, cellars, and attics, as well as under furniture. Spiders are often found hiding in old clothes, in shoes, behind pictures, in storage boxes, in stacks of paper, on the undersides of tables and chairs, behind baseboards and floor facings, or in corners and crevices. Spiders also live outdoors under rocks and bark, and they are frequently found in barns, storage sheds, and garages. The presence of shed skins in and around residences may be indicative of infestations.

Effects of the Bite

The brown recluse is not aggressive and normally bites only when pressure is applied to it. People are often bitten when they put on clothing or shoes in which a spider is hiding, when they roll over on a spider in bed, or when they clean a storage area that the spider is inhabiting. Individuals react differently to the bite; some people may not be aware of the bite for two or three hours, while others may have an immediate painful reaction. A stinging sensation is usually followed by intense pain. Within eight hours, a small puss-filled blister usually rises, and a large area around the bite

becomes red and swollen. The victim may become restless and feverish and have difficulty in sleeping. The local pain is frequently quite intense, and the skin area surrounding the bite remains red and hard to the touch for some time. The tissue affected locally by the cytotoxic venom is killed and gradually sloughs away, exposing the underlying muscle. Skin grafts are often necessary to repair severe damage.

Healing takes place slowly and may take six to eight weeks. Without prompt medical attention the end result of a bite can be a sunken scar, ranging from the size of a penny to a half-dollar. In case of a bite, the victim should consult a physician immediately, and, if possible, the spider which caused the bite should be captured for positive identification. As yet, specific antivenom is not available for treatment; therefore, both local and systemic reactions have been treated symptomatically. Corticosteroids are considered specific for combating hemolysis and other systemic complications, but they should only be administered by a physician.

Black Widow (*Latrodectus mactans*)

The female black widow spider (Figure 3) is slightly larger than the brown recluse and is glossy black in color. It is globular in shape and **never** hairy. It has eight eyes arranged in two rows. The overall length of the female (legs extended) is about 1 1/2 inches and the male is much smaller, about 1 inch long. The male usually has three light streaks on his abdomen but is recognizable by knob-like appendages on the front of the head. The female has slim, glossy black legs, but the best recognition mark is a reddish hourglass-shaped spot on the underside of her globular abdomen. The female spider is the important one to recognize since the bite of the female can potentially result in serious medical problems.



Figure 3. Black widow spider.

Life Cycle

The female black widow is not aggressive unless she is confined or disturbed. She is more likely to bite when she is guarding an egg sac. The egg sac is grayish and papery in appearance. The eggs require 8 to 30 days to mature. Each egg sac contains from 25 to 900 eggs (300 to 400 common), and a female may construct 4 to 9 egg cases each summer; however, large numbers of spiders are not normally found because the population is curtailed by the cannibalism of the young. Thus, only 1 to 12 young normally survive from each egg case. Growth requires 2 to 3 months, during which the male molts 3 to 6 times and females 6 to 8 times. The older females usually die in summer or autumn after laying their eggs.

Habitat

The female black widow normally hangs 'belly' upward and rarely leaves her web. She is frequently found near houses (under eaves); around trash cans and dumps or ash piles; under boxes, low growing shrubs, crates, stones, and wood piles; and outdoor restrooms. Black widows are also found in rodent burrows, underground water meter casings, and in gas meter housings. Cold and drought seemingly drive black widows into buildings.

Effects of the Bite

The black widow is generally considered the most venomous spider native to North America. The bite of the female injects a neurotoxic venom, which commonly gives rise to very severe symptoms. The bite itself is usually similar to a pin prick, but excruciating pain can begin within a few minutes and spreads from the point of the bite to arms, legs, chest, back, and abdomen. Within a few hours symptoms such as chills, vomiting, difficulty in respiration, profuse perspiration, delirium, partial paralysis, violent abdominal cramps, pains, and spasms may result. The pain can be so severe as to lead to frequent diagnosis as appendicitis, colic, or food poisoning. Reports indicate that mortality from black widow bites results in 1% or less of the cases, with very young or very old individuals at the greatest risk. More typically, recovery is complete in 1 to 5 days. In case of a bite the victim should consult a physician immediately.

Other Common Spiders

Tarantula

The spider known as the tarantula in Oklahoma is a member of the hairy mygalomorph family in the genus *Aphonopelma*. These large spiders are brown to black, hairy and more than 3 inches long when full grown (Figure 4). The females are larger than the males and have abdomens about the size of a quarter. Females may live 15 to 20 years or more and usually molt at yearly intervals.

Tarantulas are nocturnal hunting spiders that spend the day under rocks, in abandoned mouse burrows, or in other sheltered areas. They may be seen along county roads or trails in the evening or late at night. Male tarantulas are sometimes seen in a major migration for a few weeks usually around June and September. The purpose of this migration is not known, but it may occur as males search for mates.



Figure 4. Tarantula.

Tarantulas are sometimes kept as pets and sometimes become quite tame. Although they can be handled, caution is advised since they can quickly become disturbed and pierce the skin with their chelicerae or fangs. They have venom sacs but their venom is not considered of major concern to humans. Tarantulas require a constant supply of water in a flat dish into which they can lower their mouths. Tarantula food consists of live crickets, mealworms, caterpillars, or other insects. They can go for several weeks without food and sometimes refuse to eat before molting. Tarantulas can crawl up glass and escape through small openings, so they must be kept in a container with a tight-fitting lid.

Bald spots on the top and rear of the abdomen are a result of a defense mechanism in tarantulas. Tarantulas can use the hind legs to eject or propel barbed hairs from the abdomen at a potential aggressor. These hairs have been found in the nose pads of dogs and various other mammals that have confronted tarantulas. The hairs are not reported to harm humans.

Jumping Spiders

Jumping spiders, of the family Salticidae, come in many sizes, shapes, and colors. These spiders are active hunters during the day and have good eyesight, relying primarily on movement to locate prey. They stalk their prey before they attack in a fast leap. Jumping spiders put out a line of webbing when they jump and will sometimes dangle from that dragline after a leap that fails.

Jumping spiders are bold and stocky in appearance and often brightly colored (Figure 5). They often have conspicuous bands of black and white on their bodies or legs. Others have velvety red abdomens and some even have metallic colors on the chelicerae. They have eight eyes with one large pair in the front.

Phidippus audax is one of the most common and conspicuous of the jumping spiders. In Oklahoma, it usually has a red or white irregular spot on the back of the abdomen. However, in other states, it often has a gold spot on the abdomen which gives it the common name golden jumping spider. It can be found around the exterior of homes, in gardens, and sometimes within homes.

Jumping spiders, like most spiders, are not considered hazardous to humans and are not likely to bite unless cornered or handled.



Figure 5. Jumping spider.

Wolf Spiders

Wolf spiders are nocturnal hunters in the family Lycosidae. They are usually somber brown and black in color and may have longitudinal stripes (Figure 6). These spiders are large and often seen under lights. They sometimes enter homes through cracks and crevices around doors and windows.

Members of the genus *Lycosa* are some of the most conspicuous wolf spiders. They form webbing only to provide daytime shelter, and do not use it to capture prey. Females of most species of wolf spiders carry their egg masses below their abdomens until after eggs hatch. The young spiderlings cling to the mother for a short time after hatching, and may be found on her abdomen as well.

Wolf spiders are frequently encountered but pose no hazard to humans.



Figure 6. Wolf spider.

Orb Weavers

Orb-weaving spiders produce the flat, circular webs usually associated with spiders. Orb weavers vary in shapes and sizes but the brightly colored *Argiope* are the largest and best known (Figure 7). *Argiope* are marked with yellow, black, orange, or silver. The body of the female is more than 1 inch



Figure 7. Garden spider (orb weaver).

long, but the legs are much longer. The male *Argiope* is often less than a quarter the size of the female and sometimes can be found in the web with the female. These spiders are often called garden spiders but they may be found in fields, on fences, around the home, and in other locations. These garden spiders are generally harmless but are considered a nuisance by some since the webs are large and may be placed inconveniently for humans. However, garden spiders are beneficial as they catch many pest insects around homes and gardens.

Control of Spiders

As a precautionary measure, become familiar with the appearance and habits of venomous spiders. Since spiders nest in quiet, undisturbed areas, frequent cleaning in closets, cellars, and other such areas helps keep spiders away. Use screening, weather stripping, and caulk to seal buildings to prevent spider entry. Where possible, use a water hose to wash off outside areas, particularly under roof eaves. When chemical control is necessary, check the labels of products recommended for household pest control to see if they list spider control in the areas you intend to treat.

Treat outside under roof eaves, window ledges and porch and patio roofs. Inside, treat around windows, door facings, baseboards, basements, attics, and storage places.

Note: Brown recluse spiders can be extremely difficult to control. If fiddleback spiders are commonly seen, it is suggested that a pest control firm be employed to make thorough treatment to all areas of the house. Control often requires more than one treatment.

First Aid

Relieve local swelling and pain by applying an ice pack or alcohol directly to the area of the spider bite.

In case of severe reaction, or if the bite is from a brown recluse or black widow, consult a physician immediately. If possible, take along the biting spider for positive identification. Specific antivenom is only available for black widow treatment.

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