

Arizona's Biting, Stinging, and Infecting Arthropods

Melissa Sikes, Chloe Fung, Annaka Gouge-Smith, A'ser Mostafa, & Dawn H. Gouge



About the Western Widow Spider

The venom of the western widow spider is a potent nerve toxin, and adult females can inflict a dangerous bite to humans. They are hairless black spiders, with long legs, and a red hourglass marking on the underside of the abdomen. Males and juveniles are harmless. The smaller males are rarely noticed; juvenile females are highly variable in appearance and covered in brown and white stripes. The spiders remain in protected crevices during the day, emerging at dusk. Webs are typically created in protected outdoor corners and shrubbery where spiders can catch prey.

Bite Effects

Female widow spiders rarely bite unless crushed against skin. There will be immediate pain and inflammation at the site of the bite. Common symptoms include abdominal pain, muscle pain, salivation and dry-mouth alternations, sweating, swollen eyelids, and paralysis of the diaphragm which can be life-threatening.

What You Should Do

Fatalities are rare. If a child or person with compromised health is bitten, seek medical attention immediately. Most healthy adults recover completely after two to five days.



About the Conenose Bug

Also called kissing bugs, they are blood-feeding parasites. Adults can grow up to an inch in length and have piercing mouthparts, and pear-shaped bodies that are brown in color with reddish or cream colored stripes. Adults can fly and are drawn to light. They enter homes through open doors and windows including gaps around poorly fitting door and window screens. The bugs feed at night, often around the face, and are found in bedding, drapes, furniture, closets, and other dimly lit areas during the day. Outside, they can be found in animal nests.

Bite Effects

Typically, bites occur at night while victims sleep. The bite is initially painless, but may swell and cause a welt that itches for several days. The bugs often bite around the mouth. Half of those bitten react more severely the second time they receive a bite, with symptoms ranging from itchy welts to swelling of the tongue, and throat. Subsequent bites may lead to increased allergic reaction, including life-threatening allergic reactions.

What You Should Do

Clean the bite site with soap and water. Antihistamines and bathing in Epsom salts may help reduce itching. Severe reactions require immediate medical treatment. EpiPens are prescribed for patients following severe reactions. North American conenose species have not been implicated as vectors of disease causing parasites to humans.



About the Africanized Honey Bee

All wild bee colonies in Arizona are Africanized. Honey bee workers are golden yellow in color with dark markings, a fury thorax, and striped abdomen. They are defensive of their colony and well known for their foraging, swarming, and stinging tendencies. Bees are valuable pollinators, but if colonies are found in places of high human activity, they can pose a serious safety hazard.

Sting Effects

Honey bee stings cause pain, itching, and swelling that can last two to three days. Depending on the severity of the reaction, other symptoms can include swelling of the throat, lips and mouth, abdominal cramping, diarrhea, nausea, vomiting, breathing distress, decreased blood pressure, and loss of consciousness. People allergic to stings may experience life-threatening allergic reactions.

What You Should Do

If stung, and you are allergic to bees, or have difficulty breathing, or swallowing call 911 immediately. Otherwise, reactions usually pass in a week or less. Bee attacks are rare, but if you receive numerous stings, they can be life-threatening. If attacked, move indoors immediately. If you are out in the open, run the length of two football fields before resting. Remove stings once you are in a safe place.



About the Arizona Bark Scorpion

Bark scorpions are the most frequently encountered scorpion around homes in Arizona. They invade structures entering under or around doorways, and other entrance points. Growing to 3 inches in length they are found in groups, and are proficient climbers. All scorpions have eight jointed legs and two claws for grasping prey. They rarely pose a problem if they remain outdoors, and with the aid of a UV light, they can be seen moving around after dark.

Sting Effects

Scorpions sting defensively and have a neurotoxic venom which causes severe pain at the site of the sting, numbness, and paralysis. Children are most severely affected and may froth at the mouth, have difficulties breathing, muscle twitching, roving eyes, flailing limbs and convulsions. Death is rare given medical support.

What You Should Do

Envenomation of a child or a person weighing less than 90 lbs. is a medical emergency (call 911). Antivenin is available for severe cases. Most often this is a child under 9 years of age, or a person with hypertension. Otherwise, clean the sting site with soap and water. Over-the-counter pain relief medications may be helpful. Healthy adults should recover completely within a couple of days.



Scorpions glow under black lights due to a protein in their exoskeleton



About the Body Louse

Body lice are closely related to head lice and appear very similar, but larger in size. They bite and take blood meals, but move off the skin, hiding, and laying eggs on clothing. Body lice are most often found on homeless, and transient populations who do not change or launder clothes, or have access to bathing facilities.

Vectored Diseases

Body lice can vector a number of pathogens, including those causing trench fever, typhus, and louse-borne relapsing fever. Cases are rare in the United States, trench fever being the most common concern. Severe itching of the skin particularly in the hip, groin and upper thigh areas, and secondary skin infections occur. Discolored, rough patches of the skin, which may be thickened and darkened result from the feeding of the body lice. Secondary skin infections can occur due to scratching irritated skin.

What You Should Do

Launder clothing, bedding, and bath towels. Deep cleaning and vacuuming will help remove body lice from the environment. Body lice can survive several days off the host, and nits (eggs) can still hatch for over a week on abandoned clothing and bedding.



About the Yellow Fever Mosquito

The yellow fever mosquito is identified by white bands on the hind legs, and a distinct white lyre-shape on the top of the back. The mosquitos are prevalent around homes and develop readily in water-holding manmade receptacles. This mosquito is a day-biting species which favors human hosts.

Vectored Diseases

Yellow fever mosquitoes vector several viral pathogens that cause diseases in humans, and dog heartworm in dogs. Diseases of concern include dengue fever, chikungunya and Zika, all of which are periodically brought into Arizona by travelers acquiring the viruses abroad and then entering the United States. Bites cause itchiness and irritation.

What You Should Do

If infected with a disease-causing pathogen after a bite, early recognition and prompt supportive treatment can substantially lower the risk of medical complications and death. If you experience serious symptoms such as high fever, joint pain, muscle aches, headaches, nausea, vomiting or rash, seek medical attention immediately. Wear long sleeves, pants, and apply mosquito repellent to avoid bites if you expect to encounter mosquitoes.



Western widow spider juvenile
Western widow spider with egg sacs

Biters



About the Bed Bug

Bed bugs are blood-feeding parasitic insects that preferably feed on humans. Adults are about the size of an apple seed, and juveniles look similar, but are smaller and lighter in color. They can be found on and near to beds, and places where people rest. During the day they move into cracks, crevices, seams, and folds of fabric. They feed at night and have not been found to vector disease causing pathogens under normal living conditions.

Bite Effects

Bed bug bites can go unnoticed for several weeks. The majority of people become sensitized over time and develop an itchy reaction, that can become severe. About 15% of people seek medical attention.

What You Should Do

The sooner bed bug eradication is started, the easier and faster the process is. Try to avoid scratching bites as much as possible, as secondary infections can occur. Clean skin areas where bites have occurred with soap and water. Go to work, and send students to school in freshly laundered clothing to avoid carrying bed bugs elsewhere.



About the Head Louse

These blood feeding insects spend their entire life on the human head. They crawl rapidly across the scalp avoiding bright light. Most often one will find nits (eggs) attached to hair, near the scalp. Adults are about the size of a sesame seed. Nits are oval and often camouflaged with the host's own hair pigment. Nits may be found on the hair around the ears and neck. Once they hatch, a nymph leaves the egg case. The empty nits are white and more obvious. Unless they are physically removed, they will remain attached to the hair and grow out over time.

Bite Effects

The feeding of this ectoparasite causes itching and scratching that can lead to secondary skin infections, sleepless nights, stress, and missed school days and work days for parents and guardians.

What You Should Do

Only use a pediculicide if you find hatched live lice on the head. Avoid pyrethrin and permethrin shampoos as many head lice are resistant to them. Benzyl alcohol products are highly effective, and safe. Follow product instructions carefully to ensure success. Nit combing, hair washing, brushing, and hair drying helps to mechanically injure head lice. Be sure to launder bedding and clothing. Vacuuming car seats and furniture is recommended. Head lice die within two days off a host, so items and areas that are left unused for a couple of days will harbor no live head lice.



Nit
Growth of head louse from nit to adult



Stingers



About the Southern Fire Ant

Southern fire ants are active outdoor ants, that will invade structures seeking food and water. They colonize warm, sunny, bare ground areas and dry fields, avoiding shady areas. They sting defensively in groups.

Sting Effects

The sting causes immediate pain often described as a burning or stinging sensation that can last for several minutes. Some people are more sensitive to the stings and develop red bumps, swelling, or even hypersensitivity reactions have occurred, which can be life-threatening. In most cases the stinging sensation stops without medical intervention.

What You Should Do

Seek immediate medical treatment by calling 911, if severe reactions develop, including difficulty breathing or swallowing, headaches, nausea, dizziness, or severe swelling. Most people will have mild to moderate sting reactions in which case the affected area should be washed with soap and water.



About the Tarantula Hawk

Tarantula hawks are solitary wasps with large, blue-black bodies and orange wings. They feed on flower nectar and adult females parasitize tarantulas. The females hunt for the spiders by flying low to the ground and entering burrows with tarantulas inside them. The tarantula hawk stings the spider, paralyzing it completely. If they are above ground, the wasp drags the spider below ground, then lays her eggs on the spider, which hatch and consume the spider.

Sting Effects

Tarantula hawks do not target people, and rarely sting without being provoked, but the sting is ranked as the second most painful of all insect stings, however the pain lasts less than ten minutes, and no lasting injury is sustained.

What You Should Do

Try to remain calm, and do not put yourself in danger while reacting to the pain. It will pass without treatment and as a general rule, it is best to sit or laydown on the ground until you are calm and the symptoms pass.



Tarantula hawk attacking a tarantula



About the Southern House Mosquito

The southern house mosquito is a night biting species. Adult females readily feed on birds, humans, and other animals. Adults are brown in color with solid brown legs, and a white-banded abdomen. Commonly found around homes and human activity, they prefer to breed in abandoned swimming pools, drainage pipes, drainage ditches, and storm drains.

Vectored Diseases

They are a key vector of West Nile virus and St. Louis encephalitis virus. If you have been infected, symptoms may include fever, headache, body aches, swollen lymph glands, tiredness, and rash. Severe infections result in encephalitis (inflammation of the brain), or meningitis (inflammation of the lining of the brain and spinal cord). Severe infections are indicated by high fever, neck stiffness, disorientation, muscle weakness, paralysis, headache, stupor, tremors, convulsions, and coma. Death can occur. This mosquito can also vector heartworms to dogs. Bites can cause itchiness and irritation.

What You Should Do

If a virus infection is suspected, seek medical attention. Try to avoid scratching the bites and clean affected areas with soap and water. Wear long sleeves, pants, and apply mosquito repellent to avoid bites if you expect to encounter mosquitoes.



Mosquito larvae



About the Brown Dog Tick

Adult brown dog ticks are reddish-brown in color without any bright markings. Adults and nymphs have eight legs, but larval (newly hatched) ticks have six, and may not be immediately recognized as ticks because of this. This tick can complete its entire lifecycle indoors, and although it prefers to feed on dogs, it will attach to humans and feed.

Vectored Diseases

The brown dog tick is a vector of several disease-causing pathogens, including the bacteria that causes Rocky Mountain spotted fever in humans and dogs.

What You Should Do

Pull or scrape an attached tick off immediately! The sooner you remove the tick, the less likely you will be infected with disease-causing pathogens. Avoid irritating or injuring the tick during removal as this can promote the transmission of pathogens. If you know, or suspect, you have been bitten by a tick and develop symptoms such as fatigue, joint pain, fever, chills, muscle ache, headache, or a rash, visit a doctor as soon as possible. Tests for tick-borne diseases are available and if antibiotics are needed, they should be started as soon as possible. Wear long sleeves, pants, and apply tick repellent to avoid bites if you expect to encounter ticks.



Size comparison of the tick to a penny