Bites and Stings

Date: ______________________________________________  Time: _________________________

District: _______________ Site: _______________________  Department: _______________

Manager/Supervisor Name: _________________________________________________________________

Insect Stings, Snake and Spider Bites and Scorpions
Each year many workers experience insect and spider bites serious enough to make them lose time off the job. Though snake bites are less common, they are a concern, especially in spring, summer and fall.

Bee, Yellow Jacket, Hornet and Wasp Stings
If you are stung by a bee, remove the stinger gently by scraping with the edge of a credit card or other similar sharp edged object. Avoid squeezing the poison sac. Apply an ice pack or a cloth dipped in cold water to reduce swelling and itching. A sting from a yellow jacket, hornet or wasp will directly inject poison into its victim and will not leave a poison sac. These insects feed on dead animals and can cause blood poisoning. If you have an allergic reaction to a sting, get medical help immediately.

Spider Bites
The black widow and brown recluse are the main spiders considered to be serious threats. The black widow has a shiny black body, about the size of a pea. With legs extended, it’s about an inch long. Females have a red or yellow hourglass mark on their underside. The black widow spider is partial to outdoor areas and other places that attract flies. The black widow spider will attack with even the slightest provocation. Its bite is less painful than a pinprick, and does not cause a hole in the skin, but soon, intense pain and stiffness set in. Symptoms also may include fever, nausea, abdominal pain and chills. For children and the elderly, black widow bites can be lethal.

Also beware of the brown recluse spider. When it comes to insect bites, the bite of the brown recluse spider is one of the most feared. This yellowish-tan to dark brown spider is 1/4-1/2 inch long. It has a characteristic fiddle-shaped mark on its upper body. Its bite can have painful, disfiguring, and even deadly results. Within hours of a bite, victims may suffer severe pain and stiffness, fever, weakness, vomiting or a rash. The recluse’s venom destroys cells and clots blood, blocking blood vessels and leading to gangrene. Within 24 hours, the wound erupts into an open sore ranging from the size of a thumbnail to that of an adult’s hand. Anyone bitten by either spider should seek medical help immediately.

Experts say, spiders typically don’t go looking for human prey. Spiders are generally shy and try to avoid contact with humans. Leave them to their dark, secluded spaces – under rocks, in debris piles, sheds, closets and attics, and there’s no worry. Invade their space, though, and risk a bite. Spiders will attack if trapped or if pressed against the skin.

Not all people react the same way to these spider bites. The variation may be due to the amount of venom injected or the person’s physiology or immune system. The first line of treatment, if you suspect a bite is to apply a cold compress. However, if you have a bite and experience other side effects, get medical treatment immediately.
Snake Bites

Snakes are found in many parts of California and may pose a hazard for those who work outdoors. Although snakes generally avoid humans or animals, they can attack, particularly if they're surprised or are protecting their young or territory. Some snakes are considered “harmless,” but others release poisonous venom when they bite. If you'll be working or walking where snakes are found, be aware of their habits, dress for protection, and know what to do or not to do if you encounter or are bitten by a snake.

Poisonous snakes commonly found in California include coral snakes and pit vipers: rattlesnakes, copperheads, and cottonmouths (water moccasins). A bite from one of these snakes should always be considered a medical emergency even though 25% of all bites are “dry bites”. A dry bite occurs when no venom is injected into the victim. Apparently, snakes can control the amount of venom injected into their victim. Although deaths from snakebites are relatively rare (9-15 die each year in the U.S.), people who are bitten can't always positively identify the snake, so should get prompt medical care. Even a bite from a so-called “harmless” snake can cause an infection or allergic reaction in some people.

The key to avoiding snakebites is understanding their habits and staying alert. Snake seasons are spring, summer, and early fall. They're usually found where food (rodents), water, and protection are available such as abandoned structures, irrigation ditches, water holes, and in rock piles. They like places that offer both a place to sun and a place to hide. At night when it's cool, snakes become active hunting their prey. If you'll be working or walking in snake infested areas, wear protective clothing such as long pants, leather boots, and gloves. Be aware of your surroundings. Be cautious in tall grass and watch where you step. Walk in areas where the ground is clear so you can see where you step. Always watch where you put your hands. Don't reach blindly into rock cracks, wood piles, animal burrows or under bushes. And when you sit, look first, especially in shady areas.

Most snakebites happen when a snake is accidentally stepped on, handled or harassed. Many people are bitten because they try to get a closer look or try to kill it. So, leave snakes alone! If you encounter a snake, stay calm and freeze in place. The snake will often move away. If it doesn't move then you should slowly walk around it, keeping as far away as possible. Usually snakes are not aggressive and will not “chase” a person. They'd rather escape from noise and commotion or remain quiet and hidden.

The symptoms of a poisonous snake bite vary depending on the snake's size and species, the amount of poison in its venom, the bite's location, and the victim's age and underlying medical problems. Specific treatment for a snake bite should be left to the emergency medical personnel. Most medical professionals recommend against incisions in the wound, tourniquets, ice or any other type of cooling on the bite and against electric shock. However, if someone is bitten, the American Red Cross suggests a few basic first-aid steps:

- Keep the victim calm and still.
- Have the victim lie down, with the affected limb immobilized and placed lower than the heart.
- Remove rings, bracelets, boots or other restricting items from the bitten extremity.
- Get medical care. Responding quickly is crucial.
- Use common sense when you're in areas where there may be snakes. Keep in mind that an unprovoked snake doesn't want trouble any more than you do. Caution and respect are your best weapons against snake bites.

Scorpions

Scorpions are venomous arthropods of the class Arachnida and are considered relatives of the spiders, mites, ticks and harvestmen. There are approximately 1,300 species of scorpions worldwide, characterized by an elongated body and a segmented tail that is tipped with a venomous stinger.
Range
Scorpions are commonly thought of as desert animals, but in fact, they occur in many other habitats as well, including grasslands and savannahs, deciduous forests, mountain pine forests, rain forest and caves.

Habitat
Scorpions have even been found under snow-covered rocks at elevations of over 12,000 feet in the Andes Mountains of South America and the Himalayas of Asia. About 90 species occur in the U.S., and all but four of these naturally occur west of the Mississippi River.

Behavior
Scorpions are nocturnal, predatory animals that feed on a variety of insects, spiders, centipedes, and other scorpions. The larger scorpions occasionally feed on vertebrates, such as smaller lizards, snakes, and mice. Prey are located primarily by sensing vibrations. The pedipalps have an array of fine sensory hairs called trichobothria that sense air-borne vibrations; the tips of the legs have small organs that detect vibrations in the ground.

Scorpion Venom
The venom of scorpions is used for both prey capture and defense. Scorpion venoms are complex mixtures of neurotoxins (toxins which affect the victim's nervous system) and other substances; each species has a unique mixture. Despite their bad reputation, only one species in the U.S. and about 20 others worldwide have venom potent enough to be considered dangerous to humans.

The US species, *Centruroides exilicauda* (formerly called *C. sculpturatus*), is found over much of Arizona. A small population occurs in extreme southeastern California, and a few records exist for southern Utah. The venom of this scorpion may produce severe pain and swelling at the site of the sting, numbness, frothing at the mouth, difficulties in breathing (including respiratory paralysis), muscle twitching, and convulsions. Death is rare, especially in more recent times. An antivenin is available for severe cases.

The stings of most North American scorpions require no special treatment. Placing an ice cube on the wound reduces pain, as does an ointment containing a combination of an antihistamine, an analgesic, and a corticosteroid.

Ticks
Ticks belong to the class Arachnida, which includes spiders, scorpions, and mites. Ticks go through four life stages: egg, larvae, nymph, and adult. The larvae have six legs while the nymphs and the adults have eight. Ticks are divided into two families, "soft" ticks and "hard" ticks. The only source of nutrition that ticks use is the blood sucked from their hosts.
In the United States, seven kinds of hard ticks and five kinds of soft ticks carry diseases, are a nuisance, or cause paralysis. Often these diseases are transmitted by the tick’s saliva during feeding behavior. However, some diseases, such as tularemia, can enter through the skin if a person comes into contact with a crushed infected tick. In recent years, Lyme disease has become the most reported arthropod borne disease in the country. Many experts feel that if it were not for AIDS, Lyme disease would be the number one infectious disease in the United States.

The front part of a tick consists of the "head" area and the mouthparts (see photo, left). The mouthparts have a central structure, the hypostome, which is shaped like a blunt harpoon, flat on the top and curved on the bottom where many sharp barbs are located.

A tick pushes its hypostome into a hole in the skin of a host that has been made by sharp teeth in the front of the hypostome. The barbs anchor the tick to the skin and make it difficult to pull the tick out. Some ticks also produce a cement-like substance that helps anchor them to the host. Sharp teeth at the front of the hypostome cut blood vessels under the skin, causing the blood to form a pool. The tick then sucks this blood into its gut through the hypostome. To keep the blood from clotting, ticks inject saliva containing a kind of anticoagulant into the blood pool. The saliva may also contain disease organisms, which cause Lyme disease.

Ticks are found wherever their hosts are found. Some ticks feed on only one type of host, while others suck blood from many different animals. When not attached and feeding on their hosts, most hard ticks live on the ground in vegetation, such as grassy meadows, woods, brush, weeds, leaf litter, etc. Most ticks will crawl to the tips of grasses, brush, leaves, or branches and wait. With their front legs outstretched, they will wait for a host to brush up against them. This behavior is called questing. When the tick does come into contact with an animal, it will grab on and crawl to an appropriate area on the animal to feed.

**Ticks Symptoms**

Tick bites are generally painless. You may not even notice the bite. And you may never find the tick if it falls off. Small ticks, like the deer tick that transmits Lyme disease, are so tiny they may be nearly undetectable. Some ticks are about as small as the period at the end of this sentence.

The actual bite may cause symptoms only after the tick drops off. You may notice local redness, itching, and burning—and, rarely, localized intense pain. The results of the illnesses transmitted by ticks often begin days to weeks after the tick is gone. That's why doctors may not suspect a tick-related illness.

You may have any of these symptoms:

- Feel as if you have the flu
- Fever
- Numbness
- Rash
- Confusion
- Weakness
- Pain and swelling in joints
- Palpitations
- Shortness of breath
- Nausea and vomiting
Medical Treatment

The treatment of a given tick exposure will depend on the length of attachment, the type of tick, the diseases that are seen in the community, and your symptoms.

- Local cleansing and antibiotic cream may be applied.
- For itching, the doctor may recommend preparations containing diphenhydramine (Benadryl). You can apply these directly to the skin for itching, or you may take tablets by mouth.
- Blood tests for Rocky Mountain spotted fever or Lyme disease may be done if there are significant symptoms. These tests are generally not recommended to screen people who do not have symptoms.
- Oral antibiotics may be prescribed for some diseases. With more significant symptoms, you may need antibiotics given through an IV and may need to be hospitalized.
- Other treatments may involve more detailed blood tests, fluids and medications given by IV, and admission to the hospital.

| Suggested SIPE Safety Videos | None Available on this Subject |