Bites and Stings

- Identify the signals of the most common types of bites and stings.
- Describe how to care for insect stings and tick bites.
- Identify the signals and care of tick-borne illnesses.
- Identify the signals and care of West Nile virus.
- Describe how to care for the following:
  - Spider bites and scorpion stings.
  - Venomous snake bites.
  - Marine life stings.
  - Domestic and wild animal bites.
  - Human bites.
- Identify ways to protect yourself from bites and stings.

Introduction

- Bites and stings are among the most common forms of injected poisonings.
- Some of the most common types of bites and stings are from—
  - Insects.
  - Ticks.
  - Spiders and scorpions.
  - Marine life.
  - Snakes.
  - Domestic and wild animals.
  - Humans.

Insects

- Between 0.5 to 5 percent of Americans are severely allergic to substances in the venom of bees, wasps, hornets and yellow jackets.
- When a highly allergic person is stung, call 9-1-1 or the local emergency number immediately for medical care.
- For most people, insect stings may be painful or uncomfortable but are not life threatening.
Signals of Common Bites and Stings

- Less severe reactions to bites and stings may trigger signals including:
  - A bite or sting mark.
  - A stinger, tentacle or venom sac.
  - Redness.
  - Swelling.
  - Pain or tenderness.

- Specific signals of common bites and stings depend on:
  - The type and location of the bite or sting.
  - The amount of poison injected.
  - The time elapsed since the poisoning.
  - The victim’s size, weight, medical condition and age.

Care for Insect Stings

- Remove any visible stinger, scraping it away from the skin with the edge of a plastic card, or use tweezers.
  - In the case of a bee sting, if you use tweezers, grasp the stinger not the venom sac.
- Wash the site with soap and water.
- Cover the site to keep it clean.
- Apply an ice or cold pack to the area to reduce the pain and swelling.
- Ask the person if he or she has had any prior allergic reactions and observe for signals of an allergic reaction, even if there is no known history.
  - If you observe any signals of anaphylaxis, call 9-1-1 or the local emergency number immediately.

Ticks

- Ticks can contract, carry and transmit disease to humans.
- Some of the diseases spread by ticks including Rocky Mountain Spotted Fever, Babesia infection, Ehrlichiosis, and Lyme disease.
Care for Tick Bites

- Remove the embedded tick.
  - Do not try to burn the tick off.
  - Do not apply petroleum jelly or nail polish to the tick.
- With a gloved hand, grasp the tick with fine-tipped, non-etched, non-rasped tweezers as close to the skin as possible and pull slowly, steadily, and firmly upward.
- Place the tick in a sealable container for analysis.
- If you cannot remove the tick or parts remain, get medical care.
- Wash the bite area with soap and water.
- Apply antiseptic or triple antibiotic ointment.
- Wash your hands.
- If rash, flu-like signals or joint pain appears, seek medical attention.

Rocky Mountain Spotted Fever

- Caused by the transmission of microscopic bacteria from the wood tick or dog tick host to other warm-blooded animals, including humans.
- Initial signals of Rocky Mountain spotted fever usually appear between 2 and 14 days after a tick bite and include:
  - Fever
  - Nausea and vomiting.
  - Muscle aches or pain.
  - Lack of appetite.
  - Severe headache.

Later signals include:
  - Spotted rash, usually starting a few days after fever develops, first appearing as small spots on the wrists and ankles, and then spreading to the rest of the body.
  - Abdominal pain.
  - Joint pain.
  - Diarrhea
- Call a health care provider if the person develops signals; the health care provider is likely to prescribe antibiotics.
- If left untreated, complications can be life threatening.
Babesia Infection

- Babesia, also called Babesiosis is a protozoa infection spread by deer ticks and black-legged ticks.
- Many people infected with Babesia have no apparent symptoms. Some people may have flu-like symptoms, such as:
  - Fever.
  - Sweats.
  - Chills.
  - Body aches and headaches.
  - No appetite.
  - Nausea.
  - Fatigue.
- Others infected with Babesia develop a type of anemia that can cause jaundice and dark urine.
- In some people, such as the elderly or persons without a spleen, or those with a weak immune system or serious health condition, Babesia can be life threatening if untreated.
- If a person develops any of the signals, he or she should seek medical care.
  - Most people with signals of the disease can be treated successfully with prescription medications.

Ehrlichiosis

- Most cases of infection with the bacteria ehrlichia in humans are caused by bites by an infected Lone Star tick.
- Many people with ehrlichiosis do not become ill. Some develop only mild signals that are seen 5 to 10 days after an infected tick bit the person.
- Initial signals include:
  - Fever.
  - Headache.
  - Fatigue.
  - Muscle aches.
Ehrlichiosis

- Other signals that may develop include:
  - Nausea or vomiting.
  - Diarrhea.
  - Cough.
  - Joint pains.
  - Confusion.
  - Rash (in some cases).
- If the person becomes ill with any of the above signals, he or she should seek medical care.
  - Ehrlichiosis is treated with antibiotics.

Lyme Disease

- Spread by the deer tick and black-legged tick, which attach themselves to mice and deer.
- The tick attaches itself to any warm-blooded animal, including humans.
- Most cases of infection occur between May and late August when ticks are most active and people spend more time outdoors.
- The tick must remain embedded in human skin for about 36 to 48 hours to transmit the disease.

Signals of Lyme Disease

- A rash, appearing a few days or a few weeks after a tick bite, starting as a small red area at the site of the bite, possibly spreading up to 7 inches across.
  - In fair-skinned people, the center of the rash is lighter in color and the outer edges are raised and red, sometimes giving the rash a bull's-eye appearance.
  - In dark-skinned people, the rash area may look black and blue, like a bruise.
  - The rash may or may not be warm to the touch and usually is not itchy or painful.
  - Some people with Lyme disease never develop a rash.
Signals of Lyme Disease

- Fever.
- Headache.
- Weakness.
- Joint and muscle pain.
  - Signals are similar to those of the flu and can develop slowly and not occur at the same time as a rash.
  - Lyme disease can get worse if not treated, affecting the brain and nervous system and the heart.
  - If rash or flu-like signals develop, the person should seek medical care immediately.
  - Antibiotics are highly effective against Lyme disease.
  - If you suspect Lyme disease, do not delay seeking treatment.
  - Treatment time is longer and less effective when the person has been infected for a long period of time.

Mosquito Bites: West Nile Virus

- West Nile virus (WNV) is passed on to humans and other animals by mosquitoes that bite them after feeding on infected birds.
  - It cannot be passed from one person to another.
- Most people with WNV have no signals. Signals, typically develop between 3 and 14 days after the bite of an infected mosquito and include:
  - High fever, Headache, Confusion
  - Neck stiffness, Tremors, Muscle weakness, Convulsions.
  - Vision loss, Numbness, Paralysis.
- These signals may last several weeks; in some cases, WNV can cause fatal encephalitis, which is swelling of the brain that leads to death.
- If you suspect a person may have signals of severe WNV illness, such as unusually severe headaches or confusion, seek medical attention immediately.
- There is no specific treatment for WNV infection or a vaccine to prevent it.

Spider Bites

- Few spiders in the United States have venom that can cause death.
- Two spiders that can cause illness and occasionally death are the—
  - Black widow spider.
  - Brown recluse spider.
- Bites usually occur on the hands or arms of people reaching into places, such as wood, rock and brush piles, or rummaging in dark garages and attics.
### Spider Bites

- A black widow spider bite usually causes a sharp pinprick pain followed by a dull pain in the area of the bite.
- Other signals of this spider bite include—
  - Muscular rigidity.
  - Restlessness.
  - Anxiety.
  - Profuse sweating.
  - Weakness.
  - Drooping eyelids.

### Spider Bites

- The bite of the brown recluse spider may produce little or no pain initially.
  - Pain in the area of the bite develops an hour or more later.
  - A blood-filled blister forms under the surface of the skin, sometimes in a target or bull’s-eye pattern.
  - Over time, the blister increases in size and eventually ruptures, leading to tissue destruction and a black scab.

### Scorpion Stings

- Scorpions live in dry regions of the southwestern United States and Mexico and are most active at night, which is when most stings occur.
- Since it is hard to distinguish poisonous scorpions from the non-poisonous scorpions, all scorpion stings should be treated as medical emergencies.
Spider Bites and Scorpion Stings

- Signals of spider bites and scorpion stings may include—
  - A mark indicating a possible bite or sting.
  - Severe pain in the area of the bite or sting.
  - A blister, lesion or swelling at the entry or bite site.
  - Nausea and vomiting.
  - Trouble breathing or swallowing.
  - Sweating or salivating profusely.
  - Irregular heart rhythm.
  - Muscle cramping or abdominal pain.

Care for Spider Bites and Scorpion Stings

- If a person is bitten by a spider (i.e., brown recluse or black widow) or stung by a scorpion—
  - Wash the site with soap and water.
  - Bandage the wound. Apply an antibiotic ointment to the bandage first if the person has no known allergies or sensitivities to the medication.
  - Apply an ice or a cold pack to the site to reduce pain and swelling.
  - If 9-1-1 or the local emergency number has not been called, encourage the person to seek medical attention.
  - If you transport the person to a medical facility, keep the bitten area elevated and as still as possible.

Snakes

- Medical personnel are not in general agreement about care for snakebites.
- Most deaths from snakebites occur because—
  - The victim has an allergic reaction.
  - The victim is in poor health.
  - Too much time passes before the victim receives medical care.
- Signals that indicate a poisonous snakebite include—
  - One or two distinct puncture wounds.
  - Severe pain and burning at the wound site.
  - Swelling and discoloration at the wound site.
Care for Snakebites

- Follow these guidelines to care for someone bitten by a snake:
  - Call 9-1-1 or the local emergency number.
  - Wash the wound.
  - Immobilize the affected part.
  - Keep the affected area lower than the heart, if possible.
  - Minimize the victim’s movement.
- If the bite is from a venomous snake:
  - Apply an elastic roller bandage.
    - Use overlapping turns, gently stretching the bandage as you wrap.
    - Begin at the point furthest from the heart.
  - Check for circulation of the limb beyond the point where bandaging begins. (Note changes in skin color and temperature.)

- Regardless of what you may have otherwise heard or read—
  - Do not apply ice.
  - Do not cut the wound.
  - Do not apply suction.
  - Do not apply a tourniquet.
  - Do not use electric shock.

Marine Life

- Some marine life, such as jellyfish, can inflict painful injuries that can make you sick.
- The side effects of marine life stings include allergic reactions that can cause—
  - Trouble breathing.
  - Heart problems.
  - Paralysis.
Care for Marine Life Stings

- Remove the victim from the water.
- Call 9-1-1 or the local emergency number if the victim—
  - Does not know what stung him or her.
  - Has a history of allergic reactions to marine life stings.
  - Is stung on the face or neck.
  - Develops trouble breathing.

- For jellyfish or sea anemone:
  - Soak the injured part in vinegar (or baking soda slurry)
  - Do not apply fresh water or ammonia.
  - Do not rub the area.
- For Portuguese man-of-war stings—
  - Use ocean water instead of vinegar
  - Once the stinging action is stopped and tentacles have been removed, care for pain by hot-water immersion.
- For stingray, sea urchin or spiny fish stings—
  - Flush the wound with tap water or ocean water.
  - Immobilize the injured part.
  - Soak the body part in hot water.
  - Clean the wound.
  - Bandage the wound.
- Watch for signals of infection and check with a health care provider to determine if a tetanus shot is needed.

Domestic and Wild Animals

- The bite of a domestic or wild animal, like a human bite, carries the risk of infection as well as soft tissue injury.
  - Dog bites are the most common of all bites from domestic or wild animals.
- One of the most serious diseases that can result from a wild or domestic animal bite is rabies.
  - Rabies is fatal if not treated. Professional medical attention is needed as soon as possible.
Domestic and Wild Animals

- Tetanus is a potentially fatal infection that affects the central nervous system.
  - It is caused by the transmission of bacteria that produce a toxin when someone is bitten by an animal or human.
- Signals of tetanus include—
  - Irritability.
  - Headache.
  - Fever.
  - Painful muscular spasms.
- One of the most common signals of tetanus is muscular stiffness in the jaw, which is why tetanus is sometimes known as “lockjaw.”

Care for Domestic and Wild Animal Bites

- If someone is bitten by an animal, try to get the person safely away from the animal.
- For a minor wound—
  - Wash the wound with soap and water.
  - Control bleeding.
  - Apply triple antibiotic ointment.
  - Apply a dressing.
  - Monitor for signals of infection.
  - Advise the person to see additional care from their health care provider or a medical facility.

- If the wound is bleeding heavily—
  - Control the bleeding, but do not clean the wound.
  - Call 9-1-1 or the local emergency number.
  - Contact animal control authorities, if possible and if necessary.
Human Bites

- Human bites differ from other bites because they may be more contaminated, tend to occur in higher-risk areas of the body and often receive delayed care.
- Human saliva has been found to contain at least 42 different kinds of species of bacteria.
- According to the CDC, human bites are not considered to carry a risk of transmitting hepatitis B or HIV.

Care for Human Bites

- If the wound is not severe:
  - Wash the wound thoroughly with soap and water.
  - Control the bleeding.
  - Apply a dressing.
  - Advise the victim to seek further care from a physician or medical facility.
- If the bite is severe:
  - Control the bleeding.
  - Call 9-1-1 or the local emergency number.

Preventing Bites and Stings

- Preventing bites and stings from insects, spiders, ticks, snakes, scorpions and marine life is the best protection against the transmission of injected poisons.
Guidelines to Prevent Bites and Stings

- Apply repellent.
- Wear sturdy boots.
- Wear long-sleeved shirts and long pants.
- Tuck pant legs into socks or boots and tuck shirt into pants.
- Wear light-colored clothing.
- Use a rubber band or tape where pants and socks meet to prevent ticks or insects from getting under clothing.
- Inspect yourself carefully after being outdoors.

Guidelines to Prevent Bites and Stings

- Shower immediately after coming indoors.
- Keep an eye out for and avoid nests.
- Spray pets that go outdoors with repellent.
- Stay in the middle of trails when hiking.
- Avoid walking in areas known to be populated with snakes.
- Make noise as you walk.
- If you encounter a snake, walk away on the same path you were on.

Guidelines to Prevent Bites and Stings

- To prevent stings from marine animals, you might consider wearing a wetsuit or drysuit or protective footwear in the water.
- To prevent dog bites—
  - Do not run past a dog.
  - Avoid eye contact, try to remain motionless.
  - Do not approach a strange dog.
  - Always let a dog see and sniff you before you pet the animal.
Closing

- Learning how to recognize, care for and prevent some of the most common types of bites and stings can help you give care to a victim.
- For suspected injected poisonings, call the National Poison Control Center, 9-1-1 or the local emergency number if the victim shows life-threatening conditions.
- The best way to avoid any kind of poisoning is to take steps to prevent it.
- Questions?