Unit V – Wellness, Fitness and First Aid

Chapter 10 - First Aid for Emergency and Nonemergency Situations

Section 6 – Bites, Stings, and Poisonous Hazards

What You Will Learn to Do

Determine first aid procedures and apply them as needed

Objectives

1. Give first aid treatment for bites, stings, and poisonous hazards.

Key Terms

Venom - A poison produced by animals such as snakes and spiders

Tetanus (Lockjaw) - An acute infectious disease caused by the poison of a certain bacterium that enters the body through a wound, resulting in muscle contractions, rigidity, and death; preventable by immunization

Antivenin - An antitoxin used to counteract venom

Key Terms

Rabies - A viral disease affecting the central nervous system of mammals that is transmitted by a bite from an infected animal; it can result in paralysis and death if left untreated

Allergic Reaction - A physical reaction that some people have when they come in contact with certain substances, often marked by sneezing, breathing difficulties, itching, rash, or swelling

Bites, Stings, and Poisonous Hazards

With many outdoor activities, such as hiking, camping, cycling, skateboarding and skiing, it is common to come across emergencies involving bites, stings, and poisonous hazards.

Bites, Stings, and Poisonous Hazards

An estimated 50% of all Americans will be bitten at some time by an animal. Dogs are responsible for 80% of all animal-bite injuries.

A sting from a bee or wasp or other insect can not only be painful but also fatal if the person is allergic.

Depending on where you live, you may need to know what to do for snake bites or poisonous plants.

Snakebites

Your chances of snakebites are remote if you remain alert and careful. The severity of a snakebite depends on the:

- Type of snake
- Location of the bite
- Amount and type of venom injected

Types of Snakes

There are approximately 130 different varieties of non-poisonous snakes in the United States.

Checkered Garter Snake

They have oval-shaped heads and round pupils.

Unlike pit vipers, these snakes do not have sensory pits which sense the body heat of their prey.

Types of Snakes

Poisonous snakes exist throughout the world, primarily in tropical to moderate climates. There are four kinds of native poisonous snakes in the US.

Three of them are shown below, and are pit vipers.

Rattlesnake

Cottonmouth

Copperhead

Types of Snakes

These pit vipers are found in other parts of the world…

Bushmaster
Central and South America

Tropical Rattlesnake
Central America

Fer-de-Lance
Central and South America

Malayan Pit Viper
Eastern Asia

Types of Snakes

Pit vipers have:

- Slit-like pupils
- Flat, triangular-shaped heads
- Small, deep, heat-sensing pits between their nostrils and eyes
- Usually, hemotoxic venom

Types of Snakes

When a pit viper bites, it injects venom from sacs through long, hollow fangs. This produces a severe burning pain, along with discoloration and swelling around the fang marks.

Hemotoxin destroys blood cells, which causes the discoloration of the skin. Blisters and numbness in the affected area follow this reaction.

Types of Snakes

Pit viper bites attack the circulatory system, possibly causing:

- Weakness
- Rapid pulse
- Shortness of breath
- Vomiting
- Shock

Types of Snakes

Some snakes from the cobra family are shown below. Only the coral snake is native to the United States.

Coral

Krait

Mamba

Cobra

Types of Snakes

A coral snake has rings of red, yellow, and black color encircle a coral snake's body.

Some nonpoisonous snakes have the same colors, but only the coral snake has a red ring next to a yellow ring.

Types of Snakes

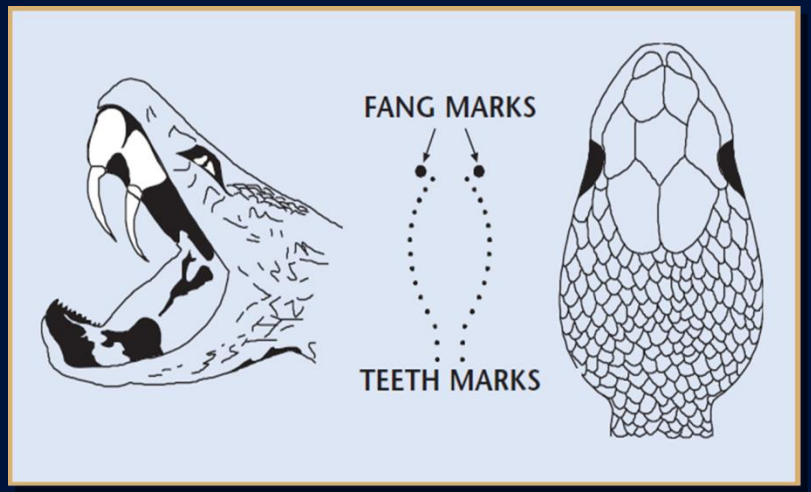
The cobra, found in Africa and Asia, forms a hood with its neck when on the defensive.

The krait, found in India and Southeast Asia, is brightly banded.

The mamba in Africa is either almost black or green.

Types of Snakes

Snakes from the cobra family inject their venom (a neurotoxin), through short, grooved fangs leaving a characteristic bite pattern.



There is minimal pain and swelling compared to a pit viper bite, but their powerful venom affects the central nervous system.

Types of Snakes

Sea snakes found in the Pacific and Indian Oceans

They have small heads, thick bodies, and tails flattened along the sides.

Their fangs are only one-quarter inch long, but their venom is very poisonous.

Check On Learning Questions

CPS Lesson

Questions 3 - 4

Types of Venoms

Venoms are characterized as:

1. Neurotoxins – affect the nervous system
2. Hemotoxins – digest tissue including blood cells
3. Cardiotoxins – affect the heart directly

Treating Snakebites

Snakebites are rarely fatal if treated within an hour or two of injury, but they can cause pain and illness and may severely damage a bitten hand or foot.

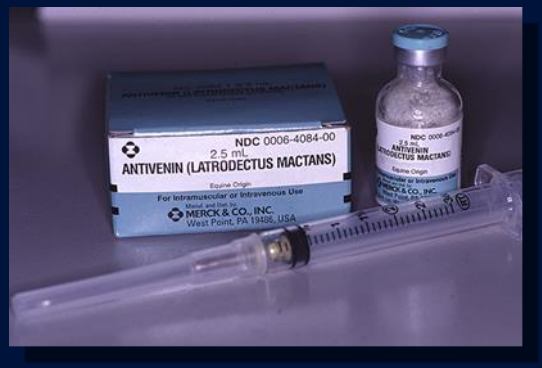
Snakes do not always inject venom. All snakes may carry tetanus (lockjaw).

So, anyone bitten by a snake should receive immediate medical attention.

Treating Snakebites

One of the most important parts of treating snakebites is identifying the type of snake that made the bite.

The type of antivenin used in medical treatment of snakebites varies depending upon the type of venom injected.



If you can identify the type of snake, let EMS know when you call for help or phone the information ahead to the hospital.

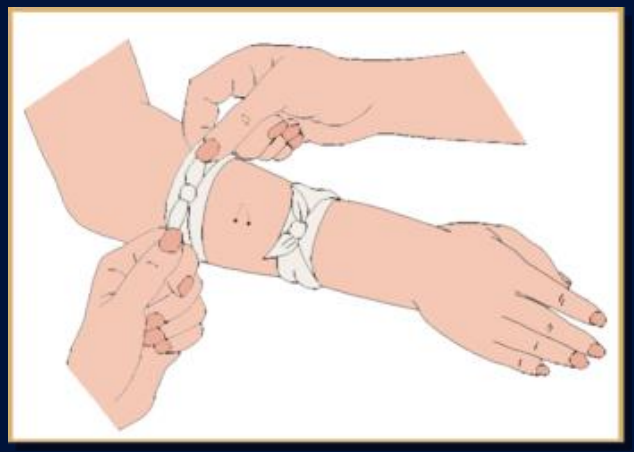
Treating Snakebites

To treat snakebites, follow these steps:

1. Get the victim away from the snake.
2. Reassure and keep the victim quiet and still.
3. Immobilize the affected part in a position below the level of the heart.
4. Remove all jewelry from any affected limb in case of swelling.

Treating Snakebites

5. Wash the bite thoroughly with soap and water.
6. Place an icepack or freeze pack over the bite, but not directly on the skin.
7. For bites to arms, legs, hands, or feet, apply constricting bands two to four inches away from the bite. Be sure the band is not too tight by inserting a finger between band and skin.



Treating Snakebites

8. If swelling from the bite reaches the band, tie another band a few inches farther away from the bite and the old band, then remove the old band.
9. Do not give the victim any food, alcohol, tobacco, medication, or drinks with caffeine.
10. Seek medical aid immediately.

Prevention of Snakebites

Most snakes are shy and passive. Unless they are injured or disturbed, they tend to avoid contact with humans.

You can prevent snakebites by using caution and common sense.

Human and Animal Bites

The mouths of people and animals are full of bacteria, so human and animal bites that break the skin spread germs and may result in serious infection and disease.

A person bitten by a diseased animal may come down with tetanus, rabies, and various types of fevers. If you think an animal is carrying a disease, notify the proper authorities.

Treating an Animal Bite

1. If bleeding is severe, control it first before continuing with other first aid
2. Cleanse the wound thoroughly with soap or a detergent solution and water.
3. If there is minor bleeding, cover the wound with gauze or a clean cloth, press firmly on the wound.
4. When minor bleeding stops, cover the wound with a sterile dressing.
5. Immobilize an injured arm or leg.
6. Seek medical assistance as soon as possible.

Insect Bites and Stings

In the outdoors, you may come in contact with various types of biting and stinging insects, including bees, mosquitoes, ticks, fleas, and spiders.

Insect Bites and Stings

Scorpions and certain spiders can inject powerful poisons when they bite or sting.

Some people may have an allergic reaction to bites/stings, especially from bees and wasps.

Those who are seriously allergic should seek medical attention immediately.

Insect Bites and Stings

Some bites can be particularly dangerous…

Black widow venom is neurotoxic and may cause stomach and muscle cramps, breathing difficulties, nausea, sweating, vomiting, and convulsions.

Tarantula venom is basically neurotoxic and may produce symptoms similar to those of a black window bite, but in some cases can affect the heart and may digest tissue.

Insect Bites and Stings

Some bites can be particularly dangerous…

The brown recluse spider can produce severe tissue damage around the bite, possibly leading to gangrene.

Although stings from certain types of scorpions are painful but not dangerous, some can cause nausea, fever, stomach cramps, and possible convulsions and shock.

Insect Bites and Stings

In most cases, bee and wasp stings produce minimal swelling, pain, redness, itching, and burning.

Multiple stings may cause headaches, fever, muscle cramps, and drowsiness.

There are basic first aid steps to be followed

to treat a bite or sting from any insect…

Insect Bites and Stings

1. Remove any stinger left in the skin by scraping the skin's surface with a finger-nail or knife.

Do not squeeze the stinger because it may inject more venom.

Insect Bites and Stings

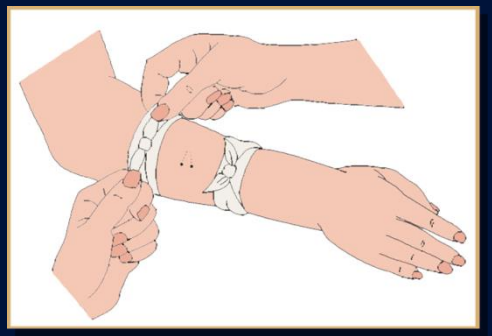
2. For tick bites, remove the tick with your fingers if it will come off easily. If not, use a pair of tweezers, getting as close to the head as you can to pull it out. Do NOT cover the tick with Vaseline or thick oil. It will not make it let go.

Insect Bites and Stings

3. Wash the area of the bite/sting with soap and water. Apply an antiseptic, if available, to minimize the chances of infection.

Insect Bites and Stings

4. Use an icepack or cold compress on the bite/sting site to help reduce swelling, but not directly on skin.
5. Apply calamine lotion or a baking soda and water paste to the bite to relieve pain and itching.
6. If there is a serious allergic reaction:
   - Apply constricting bands above and below the site as reviewed before
   - Be prepared to perform basic life-support
   - Attempt to capture the insect to identify it
   - Seek medical help right away



Insect Bites and Stings

7. Immediately seek medical attention if signs of infection occur within hours or several days after an insect bite, including these signs:
   - Pus
   - Red streaks leading away from the bite
   - Swollen glands
   - Fever

Prevention of Insect Bites and Stings

Wear insect repellent when biting insects are present outside.

Reapply repellent every few hours when participating in activities that cause heavy perspiration.

Wear appropriate protective clothing when hiking or camping in the wilderness or working in a yard, garden, or other woodsy or overgrown area.

Poisonous Plants

Most plants are harmless, but a few can cause allergic reactions on contact.

Plants of the poison ivy group produce an oily substance that irritates the skin of many people.

Poison Oak

Poison Sumac

Poisonous Plants

Reactions to the poisonous oily substance in plants may include:

- A rash characterized by
  - Redness
  - Blisters
  - Swelling
  - Intense burning and itching
- Headaches
- Fever

Poisonous Plants

Treat someone after contact with a poisonous plant as follows:

1. Remove contaminated clothing.
2. Wash all exposed areas of the skin with soap and water, then apply rubbing alcohol.
3. Apply calamine lotion to relieve itching and burning. Avoid covering rash with a dressing.
4. Seek medical care is rash is severe, or if it's on the face or mouth, where it could interfere with breathing.

Prevention of Exposure to Poisonous Plants

Become familiar with what poison ivy and other poisonous plants look like, so that you can recognize them and avoid contact with them.

Poison Ivy

Prevention of Exposure to Poisonous Plants

Other precautions you should take are:

- Dress appropriately when participating in outdoor activities
- Avoid areas where poisonous plants grow
- Do not eat plants you do not recognize
- Do not put grass, twigs, stems, or leaves in your mouth

Conclusion

- First aid should be given to an injured person until qualified medical personnel arrive and can give treatment. Each situation will be different depending on the person and injury, and you must act quickly with a rapid assessment and appropriate action.
- Prepared, stay calm, think logically, then act. Be careful not to become a victim yourself.
- Being able to adjust to new environments and conditions is important in the outdoors. Stay aware! Use common sense and the skills you have learned.

Questions?


correctly identifies th
number of fat cells ar
weight adult has?
A. 20 million
B. 200 million
C. 30 billion
D. 200 billion