



JROTC Virtual Learning

First Aid for Fractures

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STANDARDIZED TRAINING SESSION

JROTC TRAILS WEST BRIGADE: Truman, Van Horn, William Chrisman High Schools

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Student Learning Plan Health and Wellness: First Aid for Fractures [U4C2L4]



What you will accomplish in this lesson:

Determine first aid treatment for fractures, strains and sprains

Why this lesson is important:

Do your share as a good citizen in your school, community, country, and the world

Skills and Knowledge

- Distinguish between closed and open fractures
- Identify procedures for immobilizing fractures using splints and slings
- Distinguish between strains and sprains
- Explain how treating for shock may be needed



Introduction

Mary slips while climbing a tree and tumbles to the ground. She is clearly injured and you've kicked your "life saving steps" into gear. First, you check her level of consciousness, then her breathing and heart rate then whether or not she is bleeding and/or presenting any signs of shock. Next, you'll check for fractures. In this lesson, you'll continue building on your emergency and first aid response skills by learning to help people in shock or who have suffered possible fractures.



Check First for Signs of Shock

As outlined in Life Saving Step 4, check the injured victim for shock. When a victim is in shock, the skin is pale or bluish and cold to the touch. For a victim with dark skin, check the color of the mucous membranes on the inside of the mouth or under the eyelids, or check under the nail beds. The skin may be **clammy** from perspiration. Other signs that may develop in the early stages of shock include:

- Restlessness or nervousness
- Thirst
- Bleeding
- Confusion or loss of awareness
- Breathing rapidly
- Nausea and/or vomiting
- Blotchy or bluish skin around the mouth and lips



Fainting, or "blacking out," is a mild form of shock caused by a lack of blood to the brain. Fright, bad news, **trauma**, breathing polluted air, or standing too long can result in fainting. Before fainting occurs, a shock victim may turn pale, shake, or suddenly fall to the ground.

Treating Shock

Procedures for treating shock include improving circulation of the blood, ensuring an adequate supply of oxygen, and maintaining normal body temperature.

To treat a victim for shock, follow these steps:

1. Position the victim on his or her back, unless a sitting position allows easier breathing. If the victim is vomiting, position that person on the side to let fluid drain from the mouth



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2. Elevate the victim's feet higher than the heart, unless the victim has an abdominal or chest wound or an unplanted leg fracture.
3. Loosen clothing that may bind around the neck and waist.
4. Keep the victim from becoming cold or overheating.
5. Reassure the victim, and do not give him or her any food or drink; however, if you know that help is not going to arrive for over an hour, give the victim small amounts of fluids, at room temperature, every 15 minutes. Add an eighth of a teaspoon of salt, if available, to each half glass of fluid. This will help the victim retain more fluids in his or her system.



Fractures

Bone fractures resulting from falls are common injuries. The most common type of fracture is a **closed** or simple **fracture**. It is a break in the bone that does not penetrate the skin. In the case of a closed fracture, indications of a broken bone include swelling, discoloration, and unusual positioning of the limb in question.

An **open** or compound **fracture** occurs if the sharp edges of a splintered bone have cut through the skin. In the case of an open fracture, it is obvious the bone is broken. Open fractures are often accompanied with bleeding, which increases the risk of infection.



Treating Fractures

When treating fractures, it is important to know what to do and what not to do!

Do Not set or realign the bone.

DO Splint the injured limb in the position you find it. This will immobilize it until professional help can assist the victim.

DO Splint the bone above or below the injury

DO check the circulation regularly and adjust the splint or sling if it becomes too tight.



The Use of Splints

The most important action to take when dealing with a fracture is to immobilize the injured bone to prevent further damage. The best way to immobilize bones is with a **splint**.

For open fractures, control the bleeding before splinting. Keep the exposed bone moist by covering it with a moist, sterile dressing.

The rules of splinting are as follows:

1. Pad all splinting material. Make splints from sticks, boards, and cardboard, rolled newspaper or any other unbendable material.
2. Splint the broken leg or arm in the position in which you found it. Do not try to straighten or reposition the fracture. In most cases, support an arm from above and below and a leg from the sides.
3. Use splinting material that is long enough to immobilize the joint above and below the break. For example, immobilize the ankle and the knee for a fracture in the vicinity of the calf.



4. Tie the splints above and below the suspected fracture. Make two ties above and two below the break. Never make a tie directly over the break.

5. Tie all knots on the outside of the splints.

6. Check that circulation is not restricted by splints that are too tight.

Note: If no splinting material is available, immobilize a leg fracture by placing padding between the injured leg and the uninjured leg and tying them together. Using the uninjured leg as the splint, draw two ties above



Using Slings

For arm fractures in which the entire arm is not splinted, use a sling to support the weight of the arm. If necessary, pin the victim's shirttail up to serve as a field expedient sling.

Joint Injuries

Joint injuries occur when excess stress or strain is placed on the joint. This can happen during normal activities such as walking or running and is common in sports activities. Dislocations and sprains are the most common joint injuries.

Dislocations

A **dislocation** occurs when a joint comes apart and stays apart with the bone ends no longer in contact. The shoulders, elbows, fingers, hips, kneecaps, and ankles are the joints most frequently affected.



Dislocations have signs and symptoms similar to those of a fracture: severe pain, swelling, and the inability of the victim to move the injured joint. The main sign of a dislocation is deformity—its appearance will be different from that of a comparable uninjured joint. The procedures for treating a dislocation include the following:

1. Do not try to set the joint. Immobilize and support the injured joint as if treating for a fracture
2. Use the **R**est, **I**ce, **C**ompression, and **E**levation (RICE) procedures (discussed below).
3. Seek medical attention.



RICE: Procedures for Bone, Joint, and Muscle Injuries

RICE is the acronym for the first aid procedures—rest, ice, compression, and elevation. Most often, the RICE procedures are used to treat bone, joint, and muscle injuries. By performing RICE within the first 48–72 hours following such an injury, people will often recover from the injury more quickly.

- Rest. Injuries heal faster if rested. Rest means the victim stays off the injured part. Do not attempt to move or set the injured area.
- Immobilize. Stabilize the victim in the position he or she was found. If the victim must be moved, splint the injured limb before moving.
- Cold. Ice the injured area for 20–30 minutes every two to three hours during the first 24–48 hours. When the skin becomes numb, remove the ice pack.



Elevation. Gravity has an important effect on swelling. The force of gravity pulls blood and other tissue to the lower parts of the body. After fluids get to your hands or feet, they have nowhere else to go; therefore, those parts of the body tend to swell the most. Elevating the injured areas, in combination with ice and compression, limits circulation to that area, which in turn helps limit internal bleeding and minimize swelling. Whenever possible, elevate the injured part above the level of the heart for the first 24 hours after an injury.



Sprain

A **sprain** is an injury to a joint in which the **ligaments** and other tissues are damaged by violent stretching or twisting.

Attempts to move or use the joint increase the pain. The skin about the joint may be discolored because of bleeding from torn tissues. It is often difficult to distinguish between a severe sprain and a fracture, because their signs and symptoms are similar. If you are not sure whether an injury is a sprain or a fracture, treat it like a fracture. It is better to immobilize a sprain than to take the chance of a victim sustaining further damage from an un-splinted closed fracture. Use RICE procedures to treat the sprain and seek medical attention.



Muscle Injuries

Muscle injuries are as common as joint injuries. These can be very painful and need treatment as soon as possible after the injury occurs. The most common muscle injury is a strain.

Strain

A muscle **strain**, or muscle pull, occurs when a muscle is stretched beyond its normal range of motion, resulting in the muscle tearing. Signs and symptoms include:

- sharp pain
- extreme tenderness when the area is touched
- slight swelling, and difficulty moving or using the affected part

When treating a strain, use RICE procedures!



Conclusion

This lesson reinforced the first aid procedures for treating shock and fractures. Remember that shock can follow severe injuries and can be life threatening if left untreated. Treating a victim for shock involves improving circulation, ensuring an adequate oxygen supply, and maintaining normal body temperature. Additionally, the lesson reviewed how to properly treat fractures, joint injuries, sprains and strains. By following these first aid procedures, you can lessen the severity of shock caused by an injury and ensure that no further damage occurs to a victim because of a broken bone, sprain, or strain.



Lesson Check-up

1. Why is it important to check for shock before treating a fractured bone?
2. What can cause a victim to faint and what is the emergency response for someone who has fainted?
3. What should you do when you suspect or know that a bone is broken?
4. Distinguish between the characteristics of a strain and sprain?