## S.1 Physical Education

## Unit 2: SAFETY, CARE, FIRST AID, INJURY, AND PREVENTION

## Terms used

1. **Safety**; measures taken to avoid injury.
2. **Care**; provision of protective measures and management to avoid further injury.
3. **Prevention**; How to overcome problems before they occur
4. **First Aid**: First help given to the casualty before taken to the health center for further treatment
5. **Injury**: A mishap occurring during sports activity which results in inability to train or compete normally.
6. **First aid kit**; the collection of all materials that are used in giving first aid.

**CONTENTS IN THE FIRST AID KIT/BOX**

- Cotton wool
- Bandage.
- Vaseline
- Iodine
- Splints
- Pair of scissors
- Razor blade
- Gloves
- Pads
- Methylated spirit

***Task;***

- ***How can you use each of the contents listed above?***
- ***Identify any locally available materials which you can use to provide first aid other than those mentioned above. How can you use each of these materials?***

**Importance of first aid**

- Save life of injured
- Reduce pain
- Reduce further bleeding
- Shorten the healing process
- Prevent further injuries and infections

**Purpose of studying safety, prevention and care of sports injuries**

- Create awareness of the dangers of sports injuries.
- Eliminate time wastage.
- Be able to handle sports injuries.

**Task; (i)** Why do you think it is important to give first aid?

(ii) Identify areas where you would expect to find a first aid kit.

**Causes of common sports injuries**

- Lack of warm up
- Slippery surface
- Undemarcated area of play
- Poor instructions
- Poor attire
- Poor diet
- Foul play
- Poor officiation
- Indiscipline
- Bad health
- Lack of skills or fitness
- Attitude
- Physique
- Recklessness
- Mishandling equipment

**Preventive measures of injuries in P.E, Games and sports.**

- Proper warm up
- Cool down
- Safe equipment
- Good climate
- Proper instructions
- Proper distribution and collection of equipment
- Sports attire
- Proper surface

**HARD TISSUE INJURIES AND SOFT TISSUE INJURIES**

**HARD TISSUE INJURIES**

These are injuries which affect bones. They include fractures and dislocations.

- **Dislocation** refers to the displacement of bones at the joint.
- **Fracture** is the cracked or broken bone.

**<u>Fractures</u>**

Fractures are sub-divided into the following:

- ✓ **A simple Fracture**; where the bone is broken or cracked just once.
- ✓ **A compound Fracture**; That is, single bone is broken more than once.
- ✓ **A multiple Fracture**; Is when more than one bone are broken or cracked e.g Ulna and Radius, Fibula and Tibia
- ✓ **An open Fracture**; Where the broken bone protrudes and sticks out of the skin.

- ✓ **A complicated Fracture**; Is when the broken bone involves other tissues e.g blood vessels, nerves or for instance the ribs may break and pierce the lung or heart.

There are other types of fractures like **Green Stick** in children where the bone may not break completely but bend because they are still soft.

**Signs and Symptoms of Fractures**

- There is pain and tenderness in the region of the fracture i.e inability to move the affected limb.
- Deformity of the affected part
- Moderate /severe swelling or discoloration of the surrounding skin due to loss of blood.
- In case of open fracture, the bone protrudes from the skin.
- The victim may feel the broken bone grating each other.
- The victim may have bone snap at the time of accident.

**First aid treatment for fractures**

- Immobilize the injured part using splints or sticks.
- Treat for shock.
- In open fractures, control bleeding by:
    a) Cutting away the victims clothing around the wound if any.
    b) Apply large sterile pressure dressing to control blood loss (Hemorrhage).
    c) Don't wash, probe or put your fingers in then wound.
    d) If the bone fragment is protruding, cover the entire wound with large sterile pad and don't attempt to replace the bone into its normal position.
- Protect the victim from further injury.
- Keep the victim quiet and Immobile.
- Ice packs may be used over closed part to help control swelling and reduce pain.
- If possible, elevate the injured limb without disturbing the fracture.
- Refer the victim to the hospital.

**<u>Dislocation</u>**

Where two or more bones meet/come together, they form a joint. The bones forming a join are held together by Ligaments. There are three types of joints namely:

a) **Immovable joints**
b) **Slightly movable joints.**
c) **Freely movable joints.**

When bones that form a joint are displaced, a dislocation results. The ligaments holding these bones in proper position are stretched and sometimes become loose .Many times, dislocations are associated with fractures.

**Causes of Dislocation**

- Force applied at or near the joint.
- Sudden muscular contractions.
- Twisting of ligaments at the joint.
- Falling

**Signs and Symptoms**

- Rigidity and loss of function
- Deformity of the affected joint
- Tenderness
- Swelling
- Pain and dislocation at the joint

**First aid treatment**

- Apply splints and dressing to immobilize the joint inline of deformity.
- Treat for shock
- Apply ice to relieve pain and to keep the swelling down.
- Get medical help immediately

**NB**: In all these cases where you need to give first aid, its advisable to seek medical help for further examination and diagnosing after you have given first aid.

**SOFT TISSUE INJURIES**

These are injuries on body tissues except the bones e.g skin , muscle etc.

There are 5 types of Injuries which are common and these are;

- ✓ Shin splints
- ✓ Sprain
- ✓ Strain
- ✓ Contusion
- ✓ Muscle cramps

**1. Shin splints**

This is pain sensed along the lower legs between the Tibia and Fibula. The muscles tend to increase in size and rubs along the bone which causes some friction and results into pain. It is likely to occur to one who has not been training and starts to train hard. Also when one is not used to running on a particular surface for example on tarmac because hard or the ground may be uneven as the case of cross country. It can also be to change of foot wear one is not used to.

**Treatment**

- Analyse your activity and make necessary changes
- Massage using Vaseline along the Tibia

- Rest and apply inflammatory drugs or pain killers like Panadol and then continue with the activity.

**2. Sprain**

This is the over stretching or tearing of the ligament tissue resulting from over stress. The most common in sports is the Ankle sprain.

**3. Strain**

This is the over stretching or tearing of the muscle unit i.e the muscle, tendon or attachment to the bone caused by over use which is chronic/over stress which is acute. This is the most common of all sports injuries.

**4. Contusion (bruise)**

This is the bruise under the skin, the skin is not cut but the underlying tissues may be bleeding. This may sometimes cause swelling, it is caused by heavy impact/blow on to the muscle. The degrees of severity of an injury differs depending on how bad the injury is .There are 3 degrees of severity ie;

- 1st degree(Mild)
- 2nd degree(Moderate)
- 3rd degree(Severe)

**1st Degree (Mild)**

The following area characteristics of mild degree severity:

a) A tear is minor
b) There is no swelling
c) The pain is minimal
d) The actual point of tenderness is minimal
e) The range of movement is not limited

**2nd Degree (Moderate)**

Characteristics include:

a) There is partial tear of the tissue involved(ligament, muscle or tendon)
b) There is swelling and in case of the contusion ,there is discoloration
c) There is the actual point of tenderness
d) The range of movement is painful

**3rd Degree (Severe)**

Characteristics include:

a) There is severe tearing or complete rupture of the tissue
b) There is intense pain and actual point of tenderness
c) There is a lot of swelling ,discoloration and muscle spasm
d) There is an immediate loss of function

**Treatment for the 3 injuries**

The following steps are taken:

✓ Stop the activity. The victim rests from the activity

- ✓ Apply something g cold preferably ice. Do not apply it directly on the skin but wrap it in the polythene so as to avoid frostbite. Ice is applied in order to reduce circulatio9n of fluids and blood to the injured part. It reduces pain.
- ✓ Apply compression by using an elastic bandage. This is too done to avoid flow of bodily fluids and blood to the injured part.
- ✓ Elevate the injured part. This is too done to avoid flow of bodily fluids and blood to the injured part.

The above treatment can simply be summarized with "**RICE" (**Rest, Ice, Compression and Elevate) .This should be applied at once at least 20-30 minutes every hour**. Massage or use of liniment should not be applied because this increases pain and heat which is against the rule.**

Stretching should be done at later stages when the person is healing so as to reduce stiffness of the scar. This should be done gently to increase metabolism at that area. The victim should be taken to the doctor /hospital in case of intense pain or swelling ie if the degree is moderate or severe.

**Recover time**

In case of mild injury, after 3 days, the pain should be calm and swelling should disappear. After about a week, the symptoms are reduced and the person can now do some stretching exercises.

After one month, the person is ready to begin undertaking activity he/she was doing before injury.

**5. Muscle cramp**

This is a painful involuntary spasmodic contraction of the muscle. It is believed to be caused by salt reduction from the body lost in perspiration (Swelling).Also restriction of blood flow may lead to muscle cramp. Tight bandaging and tight clothing restrict blood flow and cause accumulation of waste products. Over fatigue may also lead to muscle cramps because of reduced oxygen supply to the muscle.