FIRST AID

Department of Physical Education
SH College, Thevara

- ***First aid is the immediate treatment given to the victim of sudden illness before medical aid is available.***

- ***Guiding Principles***

1. **Preserve Life**
2. **Promote Recovery**
3. **Prevent further injury or prevent condition from becoming worse**

General Guidelines

- First aid given for an injury is not a long term solution to a problem, it does not replace treatment provided by a medical personal.
- Safety of (yours and the victim) , Mechanism of injury(How it happened) ,Medical information devises(medical alert tags, or bracelets etc), Number of casualties(if more than one person), bystanders(those who can help you.
- Always avoid contact with blood or other body fluids(If possible use gloves)
- If administering mouth to mouth resuscitation, use face shield, following the instruction on the packet.

In an emergency follow these priorities

- Check out you are not in danger.(If you become injured you will not be able to help others)
- Check to see the victim is conscious, if conscious and breathing stay with the victim while sending some body for help.
- Check to see if the person is breathing, if you are alone call for a doctor/ambulance before starting rescue breathing.
- Check for pulse, if no pulse is found start CPR, if you know it
- Check for bleeding
- Check for ay spinal or neck injuries
- If the person is unconscious do not give any fluids.
- Do not become involved in treatment methods beyond your skill.
- Always stay calm and do not give up until help arrives.

ABC'S OF FIRST AID

A - AIRWAY

B- BREATHING

C- CIRCULATION

- Airway – Airway of the unconscious person may be narrowed or blocked making breathing difficult.(Happens when the tongue drops back and blocks the throat). Lift the chin and tilt the head back- this lifts the tongue away from the entrance of air passage.

Head Tilt- Place two fingers under the chin and lift the jaw, while placing your other hand on the fore head and tilting the head well back.(See for any neck injury)

- BREATHING-Check for breathing by placing your head near the persons nose and mouth. Feel for breath.

MOUTH TO MOUTH VENTILATION

- If stopped breathing use mouth to mouth ventilation. Make sure airway is open. Pinch the nostrils together, take a deep breath and blow into the mouth, firmly sealing your lips around the mouth. So air is not lost. See the chest rise. Remove your lips and let the chest fall. Continue this, giving about ten breaths every minute until help arrives or breathing begins.

CIRCULATION

Circulation- See if the heart is still beating by feeling for the Adams apple with two fingers.

Slide the fingers to the side of the wind pipe and feel for the pulse. If the heart has stopped beating use chest compression to try to start the heart. Place your hand flat just above the point where the ribs meet the breast bone. Bring the other hand on the top of it and lock your fingers together. With your arms straight , press down firmly on the breast bone, pushing it down by 4-5cm. Release the pressure and repeat the compression at the rate of about 80 per minute. If the person is also not breathing , alternate 15 compressions with two breaths until help arrives.

CALL

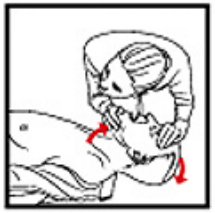
CALL 911

PUMP

POSITION HANDS IN THE CENTER OF THE CHEST

PUSH DOWN IN THE CENTER OF THE CHEST HARD AND FAST TWO INCHES 30 TIMES. PUMP AT 100/MIN

BLOW



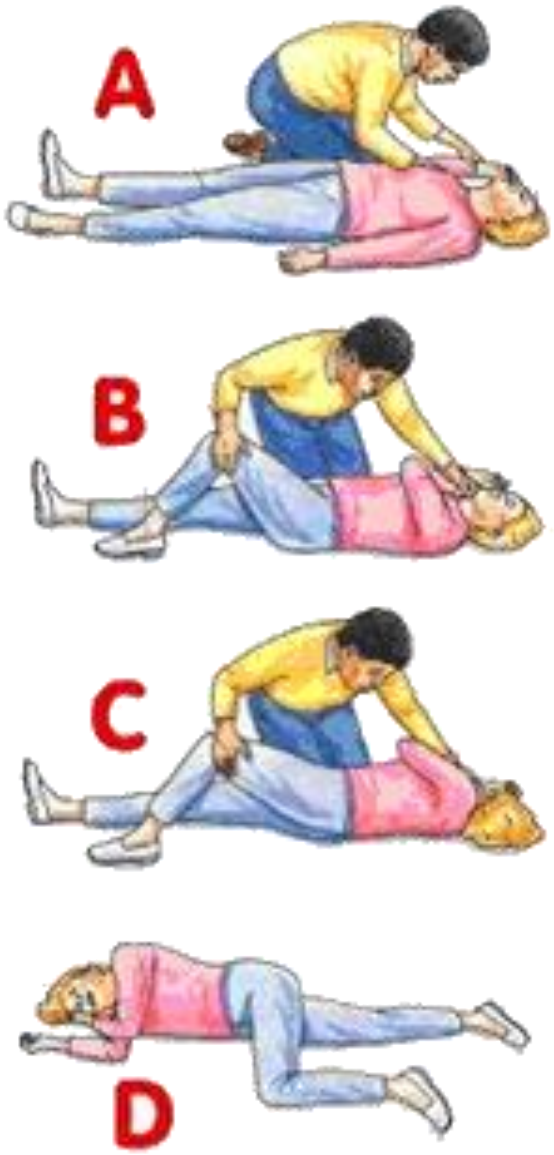
TILT HEAD, LIFT CHIN, CHECK BREATHING

GIVE TWO BREATHS

CONTINUE WITH 30 PUMPS AND TWO BREATHS UNTIL HELP ARRIVES

Recovery Position

This is the best position for an unconscious person or someone having a fit. It allows them to breath easily and prevents them from choking. After checking the ABC, bend the nearest arm to you , putting the hand by head. Then bring the far arm across the chest and hold both hands in one of yours. With your other hand pull the furthest leg up at the knee and role the person towards you to lie in sideways position.



COMMON INJURIES AND THEIR MANAGEMENT

- SPRAINS
- STRAINS
- CONTUSION
- CUTS AND WOUNDS
- FRACTURE
- DISLOCATIONS
- BURNS

- DROWNING
- ELECTRIC SHOCK
- BLEEDING NOSE
- SHOCK
- FAINTING
- CHOKING
- DOG BITES
- SNAKE BITES

SPRAINS

Occurs at your **joints**

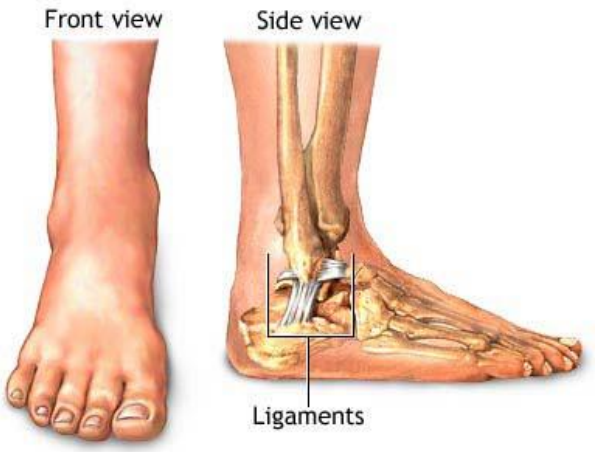
Occurs within a ligament or capsule (non-contractile tissue)

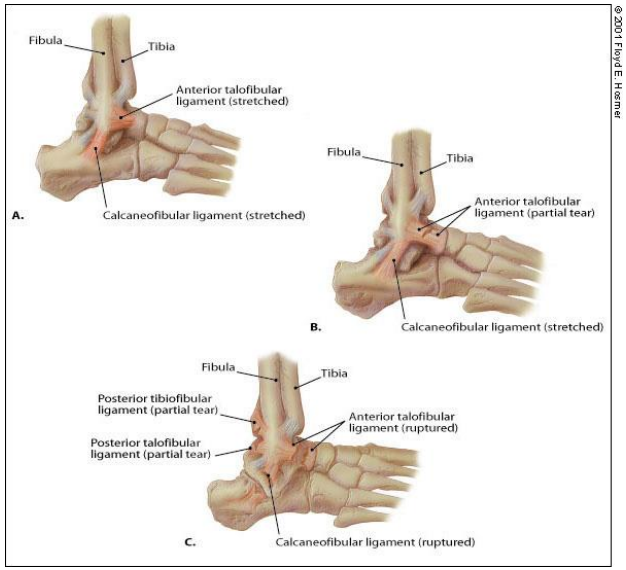
Ex: Ankle or shoulder sprain

Varying amount of tissue injury/tearing from

overstressing the structure

Can be Acute and Traumatic or Gradual with Overuse





Grading Severity

Based upon degree of pain combined with joint instability resulting from the injury

Grade I –Tissue Stretching without instability

Grade II -Partial Tearing with partial instability

Grade III –Complete Tear with gross instability

STRAINS

Occurs in a **muscle**

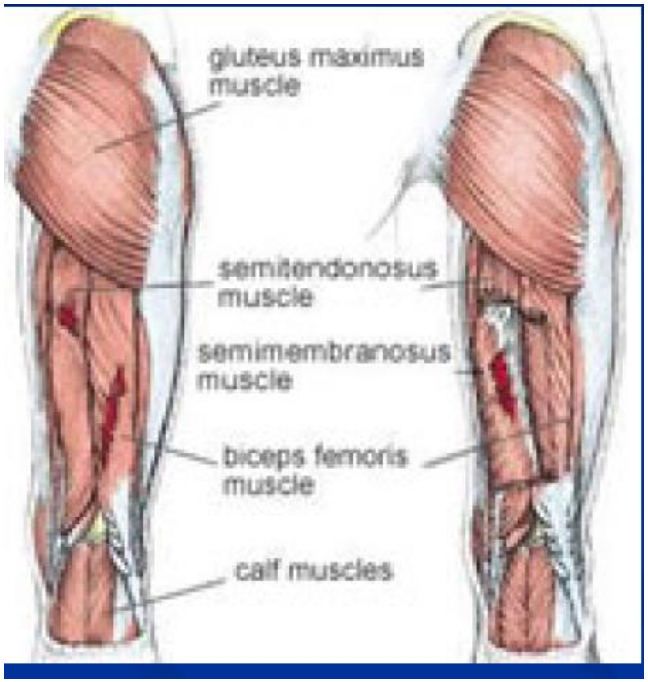
Occurs within the muscle tendon unit (contractile tissue)

Ex: Hamstring Strain, Rotator Cuff Strain

Varying injury to muscle belly or muscle-tendon junction

Most often acute / traumatic injury

Gradual injury most oftenoccurs at tendon-bone insertion(Tendonitis)



TREATING SPRAINS AND STRAINS

- RICE – is the principle followed for the initial treatment.
- R-Rest
- I-Ice
- C-Compression
- E- Elevation

- REST- Injured area should be in complete rest for 24 to 48hrs following the injury.(Protects the area from further injury and slows down the bleeding in the injury site.
- ICE- Ice should be applied immediately.(in thin towel to avoid ice burns, cold reduces any internal bleeding, brings down the swelling, minimize the pain, 10 to 20 mts, every 2 hrs for 24 to 48hrs. After that can be alternated with heat in the following days for up to a week. Gradually reduce time for cold and increase time for heat.)

- COMPRESSION

A bandage or taping as soon as after the injury-either with or after the first application of ice. Compression will physically restrict movement in the injured area. It should not be so tight to restrict blood flow into the limb. Important to check the tightness of bandage. It can applied for several days after the injury first occurs. Helps in controlling inflammation and aiding recovery.

ELEVATION

By elevating the injury site above the heart level gravity comes in to assist in reducing blood flow to the injured area and helps reduce swelling. It is an important part of immediate treatment of an acute injury. Should be continued in the next days to maximize its benefits

CONTUSION

Contusion or bruise ,is caused by an object striking the body with enough force to crush the tissue beneath the skin. The greater the force the greater the tissue damage. If the blow is over the boney area, the bone also may be contused.

- SYMPTOMS
- Discoloration under skin, starting from redness, blue and black
- Swelling and pain on the contused part
- Stiffness over the area

TREATMENT - RICE

CUTS AND WOUNDS

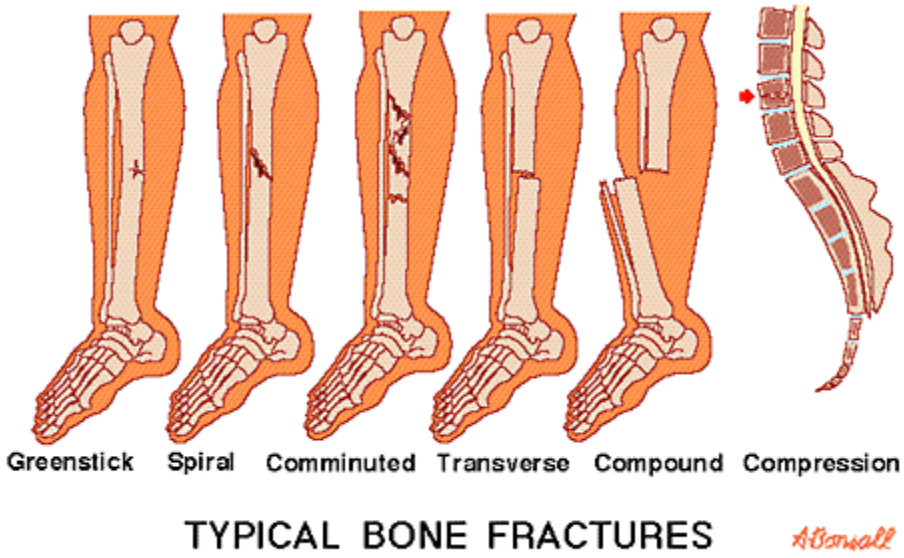
A cut or laceration is an injury that results in a break or opening in the skin. May be near the surface or deep. Injure deep tissues, such as tendons, muscle, ligaments, nerves, blood vessels or bone.

Minor cuts may not requires a trip to emergency room. But proper care is essential to aviod infection or other complecations.

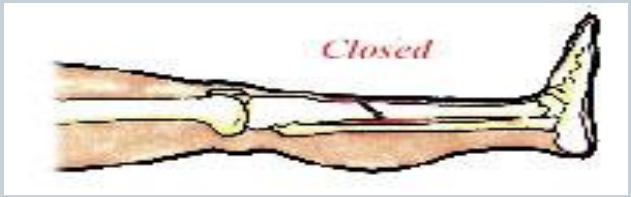
- TREATMENT
- Examine the patient for any fracture /dislocations.
- Stop bleeding by applying pressure
- Clean the wound with clean water
- Apply antibiotic and cover the wound with bandage
- Get stitches for deeper wounds
- Watch for signs of infection. See the doctor if the wound is not healing or you notice any redness, increasing pain, drainage or swelling.

FRACTURE

Fracture is complete or incomplete break in a bone resulting from the application of excessive force .



- Simple Fracture also known as Closed Fracture. In this the bone will be broken & there is no wound in the fracture site



- A Compound Fracture pierces through the skin. Serious bleeding may occur with this kind of wound. Do not apply pressure to a compound fracture to stop the bleeding.
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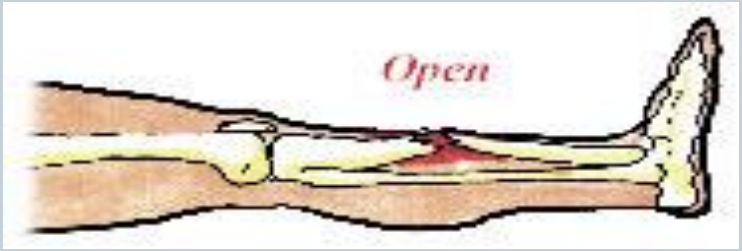
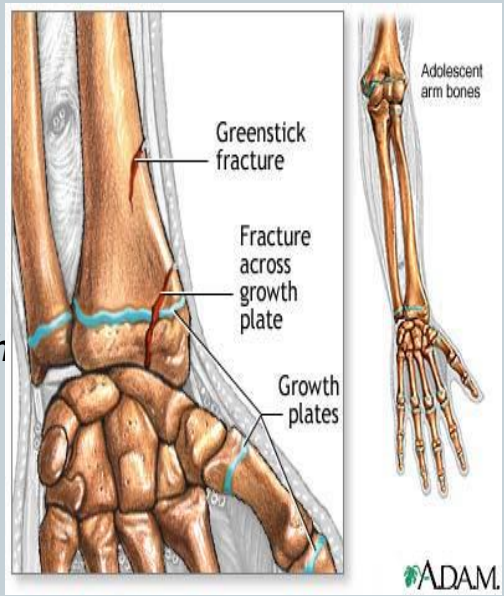


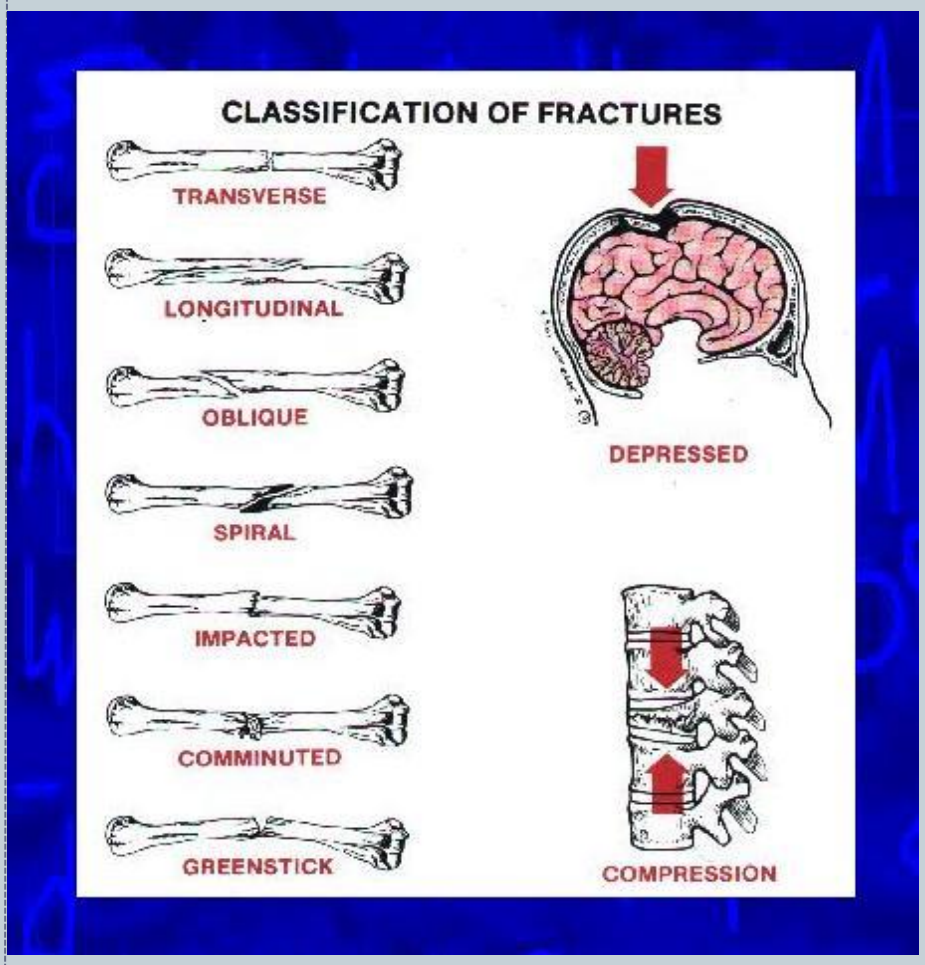
A green stick fracture is an incomplete fracture in a long bone of a child who has not finished growing.

A fracture involving a growth plate (the cartilage plate near the end of the bone of a growing child where growth occurs) can lead To disturbances in growth of the bone, even if treated properly.



- Comminuted Fractures

A fracture in which bone is broken, splintered or crushed into a number of pieces. This fracture is usually produced by high forces or by normal forces in a very fragile bone



SIGNS AND SYMPTOMS AND TREATMENTOF FRACTURE

SIGNS AND SYMPTOMS

Pain
Tenderness
Swelling
Loss of Power
Deformity of the limb
Shortening of the limb
Irregularity of the bone
Bone grating
Unnatural movement at the site of the fracture

TREATMENT

- Do not move the injured part
- Immobilize or splint the damaged extremity before moving the patient
- Always move the patient to the hospital in a lying down position.
- Never sit the patient up or bend or move the injured part any more than its absolutely necessary.

- * if you think there maybe an injury to the back, neck chest or pelvis, do not try to move the person, get help
- * Be careful when carrying a person with broken and dislocated bone. If he is carried in the wrong way, his injury may become worse
- * Any stick-like object or material that is hard can be used for splinting .
- * The splint should go beyond the joints above and below the fractured or dislocated bone to prevent these from moving
- * Place the cloth between the injured limb and the splint or wrap the splint with a cloth so as not to hurt the person
- * Place the splint on both sides of the injured limb
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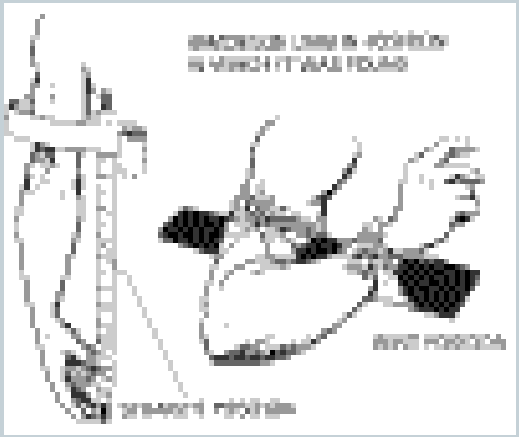


DISLOCATION

Dislocation or luxation occurs when a bone in a joint becomes displaced or misaligned. Caused by the sudden impact to the joint. Ligaments become damaged.

SYMPTOMPS

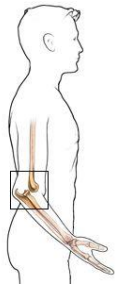
Swelling

Intense pain

Immobility of the effected joints

Deformity of the dislocated area

Warmth, brusing or redness in the injured area



Dislocated elbow

- Treatment- RICE
- Don't delay medical care
- Don't move the joint
- Splint the affected joint into its fixed position.
- Don't try to move a dislocated joint or force it back into place. This can damage the joint and its surrounding muscles, ligaments, nerves or blood vessels.
- Put ice on the injured joint to reduce swelling and controlling internal bleeding in and around joint.

BURNS

Burn is an injury caused by heat, electricity, chemical light, radiation, friction.

CLASSIFICATION OF BURNS

First Degree

Second Degree

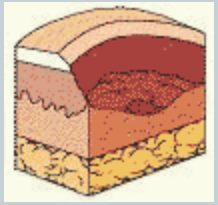
Third Degree

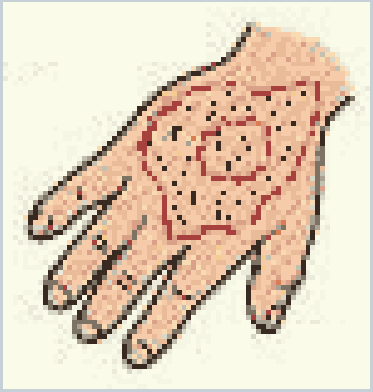
1. **First-degree burn**
   a. **Only the top layer of skin is burned**
   b. **The skin is only mildly discoloured**
   c. **There is only a little swelling**
   d. **These burns usually heal within a week.**

1. Second-degree burn
    a. Several layers of skin are burned.
    b. The skin has a spotty or blotchy appearance.
    c. There is greater swelling, and there are blisters
    d. These burns take up to three weeks to heal and should be attended by a Physician

- Second Degree Burn
- Damage to both outer skin and underlying tissue layers (epidermis and dermis), causing pain, redness, swelling, and blistering.

1. Third-degree burn
    a. Many layers of skin are burned.
    b. There is severe discoloration.
    c. Some skin may be charred
    d. These burns can be life threatening





FIRST AID FOR BURNS

For minor burns , including the first degree burns and second degree burns limited to an area no larger than 3 inches(7.6 cm) in diameter, you can take these precautions

- Reassure the causality and give him/her support.
- Cool the burn. Hold the burned area under cool running water for 10 to 15 minutes or until the pain subsides. Can immerse the burn in cool water. Cooling the burn reduces swelling by conducting heat away from the skin.
- Cover the burn with a sterile gauze bandage. Dot use fluffy cotton or other materials that may get lint in the wound. Wrap the gauze loosely to avoid putting pressure on burned skin. Bandaging keeps air off the burn, reduces pain and protects blistered skin.
- **Caution.**
- Do not put ice on the burn or apply cold water
- Do not apply butter or ointments to the burn. This could cause infection.
- Do not break blisters.
- Do not remove burned clothing
- Do not immerse large severe burns in cold water.(It can drop in body temperature (hypothermia) and deterioration of blood pressure and circulation(Shock)
- Check for signs of circulation. If there is no signs of circulation ,give CPR.
- Elevate the burned part.
- Cover the area of burn.

DROWNING

- Drowning is the process of experiencing respiratory impairment from submersion / immersion in liquid.
- Quickly remove any obstruction such as mud from the casualty's mouth and begin artificial ventilation immediately.
- Put the victim in a prone lying position with the back up and face down , on one side and press the b ack to bring out the water from the lungs and stomach.
- When the casualty can be placed on a firm surface, check breathing , pulse and continue resuscitation if necessary.
- Keep the victim warm, remove wet clothing and dry him off, cover with spare clothes .
- Provide hot tea or coffee as soon as he is capable to swallow.
- Do not allow him to sit up.
- Remove false teeth
- Pull tongue forward
- Ensure medical attention for the casualty

Electric shock

The human body is a good conductor of electricity and contact with live power source can cause significant burns or may interfere with heart's electrical system.

First Aid

- The victim usually get struck to the source. So first separate him from the source.
- Turn off the power supply switch
- Do not touch the victim with bare hands.
- Throw a blanket over the victim and try to separate him. Can use dry ,non conductive materials such as wooden broom handle, chair etc to separate the victim from the live current. Make sure you are not standing on anything that is wet.
- Once the victim is separated, check if he is breathing. If breathing has stopped or seems to be slow administer CPR immediately.
- Let his head be slightly lower than the rest of the body, and raise his legs.
- Cover the victim with a blanket.
- Move the victim as little as possible , may have suffered injuries to neck or spine.
- If the victim has burns , administer the first aid for burns.

BLEEDING FROM NOSE

The nose is the part of the body rich in blood vessels and is situated in a vulnerable position as it protrudes on the face. As a result ,trauma to the face can cause nasal injury and bleeding . Bleeding form the nose can also be due to rupture of tiny blood vessels inside the nostrils, or as a result of sneezing, picking or blowing.

- Make the patient sit down with head erect or bend slightly forward so that the blood does not trickle down the throat.
- Loosen clothing at the neck
- Pinch the soft part of the nose firmly for five minutes to compress the blood vessels.
- Ask the patient to breathe through his mouth.
- Apply a cold compress to the nose and seat the patient near an open window to let plenty of fresh air.
- Patient should be instructed not to blow his nose for some hours.

SHOCK

Shock is a condition of profound depression of the vital functions following injuries, hemorrhage, severe pain or an emotional upset.

- Symptoms
- Pale, cold, clammy skin
- Shallow irregular breathing
- Weak rapid pulse
- General Weakness
- Reduced consciousness or unconscious
- Dilation of the pupils
- Nausea and vomiting

- First aid treatment for shock

- Lay the patient flat with legs elevated about 9 inches, unless there are fracture in which case wait till the fracture is immobilized.
- Stop any bleeding
- Loosen clothing at neck and waist

- Keep the patient warm
- Handle as gently as possible and aviod any unnecessary movement.
- See that there is plenty of air surrounding the patient
- Give drinks or sweetened hot tea or coffee, if there is no chest or abdominal injury or unconscious.
- Get a doctor or send to a hospital as early as possible.

FAINTING

sudden loss of consciousness from lack of blood flow to the brain.

- If the patient has not lost consciousness sit him down and lower his head between the knees, or lay him down with the head lower than the feet.
- Check to see if the airways are clear and breathing/pulse is normal
- If not provide CPR
- Loosen clothing at neck and waist.
- Allow plenty of fresh air
- Keep body warm.
- Pour face with cold water
- When consciousness returns gradually raise the patient and give sips of water, tea coffee.

C H O C K I N G

- Chocking occurs when a foreign body become lodged in the wind pipe, blocking the flow of the air. In adult , apiece of food often is the culprit. Young children often swallow small objects.
- Chocking cuts off oxygen to the brain , so administer first aid as quickly as possible.

CHOCKING SYMPTOMS

- Sign of Chocking- Hands clutched to the throat.
- If the person doesn't give the signal of chocking, look for these indications.
- i. Inability to talk
- ii. Difficulty in breathing or noisy breathing
- iii. Inability to cough forcefully
- iv. Skin , lips, and nails turning blue or dusky
- v. Loss of consciousness

FIRST -AID FOR CHOCKING

- If the patient is conscious

i. First deliver five back blows between the person's shoulder blades with the heel of your hand

Heimlich Maneuver

1. Stand behind victim.
2. Wrap arms around victim's waist and not around the ribs.
3. Make a fist and place the thumb side of your fist just slightly above the navel.
4. Grab your fist with your other hand.
5. Press into the victim's stomach with five quick upward thrusts. Each thrust should have a pause in between.
6. After every five thrusts, recheck the victim. Repeat until the object has been dislodged of until the victim loses consciousness.

Abdominal Thrusts

1. Place victim on his or her back.
2. Straddle the victim by sitting on their thighs.
3. Place the heel of one hand just slightly above their navel. Your fingers should be angled slightly upward, pointed toward the victim's head.
4. Grasp your hand by placing your other hand on top and lacing your fingers into the first hand.
5. Press inward and upward with five quick thrusts. Each thrust should have a pause in between.
6. After every five thrusts, recheck the victim. Repeat until the object has been dislodged or until you are relieved by another person or an EMT.
7. Perform finger sweep after each set of five thrusts.

DOG BITES

- i. Should be washed thoroughly washed with running water.
- ii. Wound should never be rubbed or scrubbed, as this will push virus deeper inside.
- iii. Apply an antibiotic ointmentand cover with a non stick bandage.
- iv. Go for medical attention

SNAKE BITE

- i. Hang the bitten limb down and immediately apply a triangular bandage, neck tie or handkerchief on the hard side of the bite, just tight enough to congest the veins and to prevent the flow of poison to general circulation.
- ii. Rest the patient
- iii. Gently wash the wound
- Iv. Do not let the victim walk
- V. Transfer to the hospital for anti-venom injection.