CERT Basic Training

Unit 3: Disaster Medical Operations - Part 1

CERT COMMUNITY EMERGENCY RESPONSE TEAM

U.S. DEPARTMENT OF HOMELAND SECURITY

FEMA

Unit Objectives

1. Identify life-threatening conditions resulting from trauma including severe bleeding, low body temperature, and airway blockage
2. Apply correct life saving techniques
3. Provide basic first-aid care for non-life threatening injuries

Treating Life-Threatening Conditions

- Breathing, Airway Obstruction
  - Open Airway
- Severe Bleeding
  - Control Bleeding
- Shock
  - Treat for Shock

Safety Considerations

- Prior to treatment, ensure that both the patient and rescuer are in a safe environment

- Some questions for CERT volunteers
  - Do I feel safe at this spot?
  - Should I leave and move to a safer location?
  - If I leave, can I take anyone with me?

PPE (Personal Protective Equipment)

- Helmet
- Goggles
- N95 Mask
- Gloves (work and non-latex exam)
- Sturdy shoes or boots

Exercise - Gloves

Properly put on and take off
non-latex exam gloves

PM 1-25

Approaching the Patient

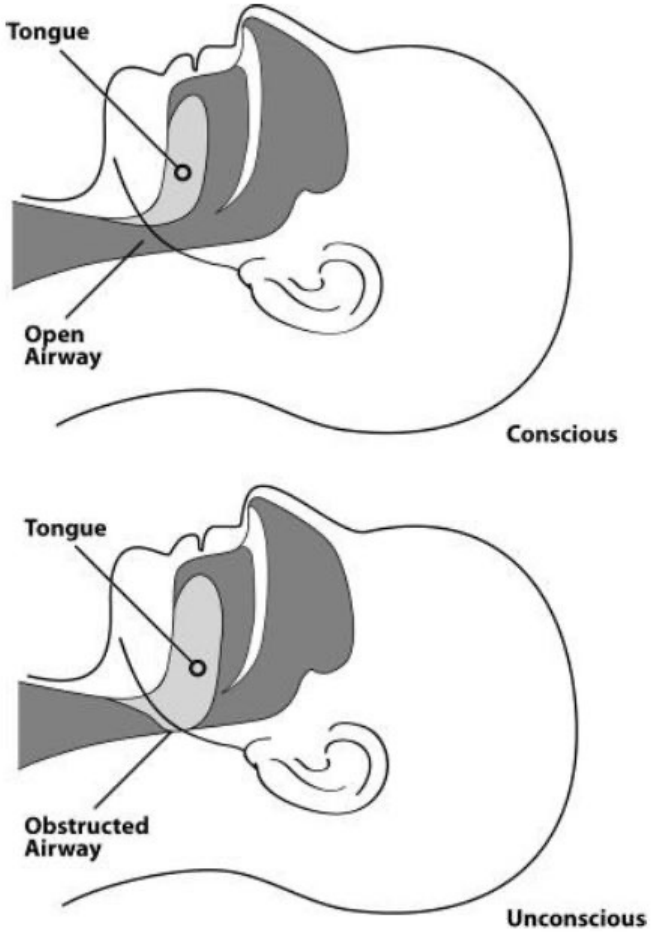
- Be sure patient can see you
- Identify yourself
  - Your name and name of your organization
- Request permission to treat, if possible
- Respect cultural differences
- Protect patient privacy

PM 3-2

Respiration (Breathing)

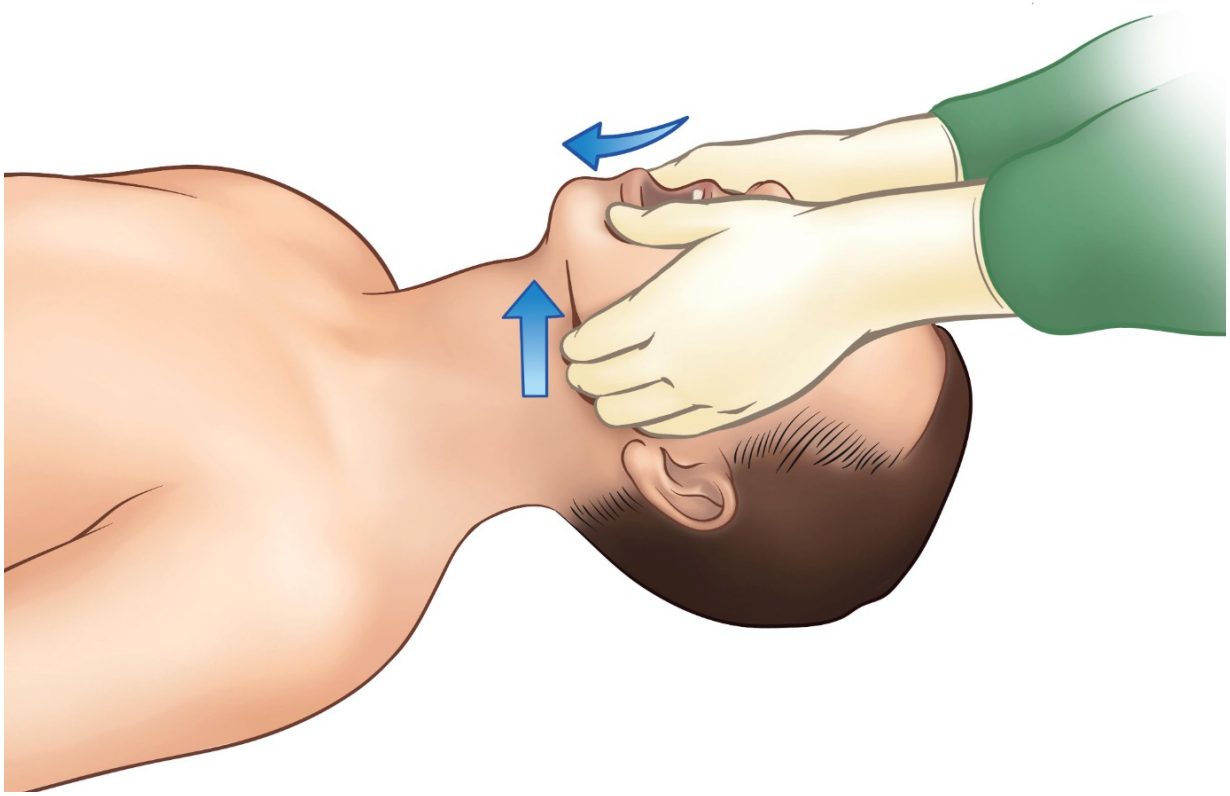
- Positioning a Conscious Patient
  - **When sitting on a raised platform**(e.g., chair, bench): Legs shoulder width apart, elbows or hands on knees, and leaning slightly forward
  - **When standing:** Legs shoulder width apart, hands on knees arms straight, and leaning forward with flat back

Open vs. Obstructed Airway



PM 3-6

Jaw-thrust Maneuver



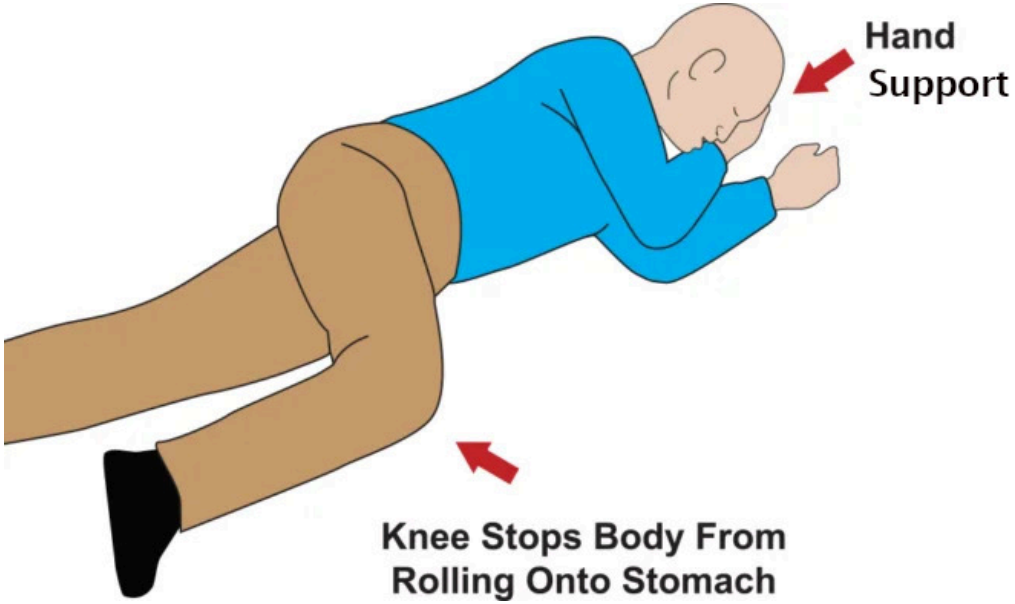
PM 3-6

Open Airway Manuever

PM 3-6

Positioning an Unconscious Patient

- **Maintain airway in recovery position**



Recovery Position

- **Body:** Laid on its side
- **Bottom Arm:** Reached outward
- **Top Arm:** Rest hand on bicep of bottom arm
- **Head:** Rest on hand
- **Legs:** Bent slightly
- **Chin:** Raised forward
- **Mouth:** Pointed downward

Exercise – Jaw Thrust & Recovery Position

Jaw Thrust on Mannequin

Recovery Position

PM 3-8

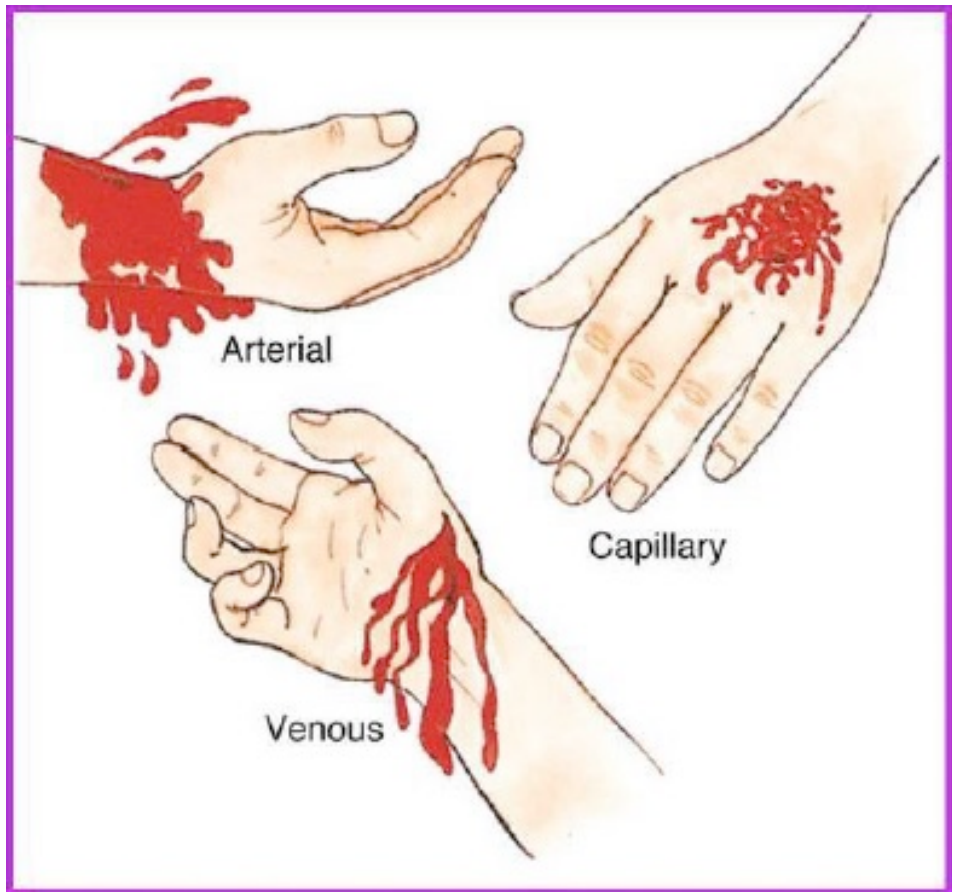
Life-Threatening Bleeding

- Indicators of life-threatening bleeding:
  - Spurting/steady bleeding
  - Blood is pooling
  - Blood is soaking through over lying clothes
  - Blood is soaking through bandages
  - Amputation

Types of Bleeding

- **Arterial bleeding:** Arteries transport blood under high pressure
  - Blood coming from an artery will spurt
- **Venous bleeding:** Veins transport blood under low pressure
  - Blood coming from a vein will flow
- **Capillary bleeding:** Capillaries also carry blood under low pressure
  - Blood coming from capillaries will ooze

Types of Bleeding



PM 3-3

Controlling Bleeding: Direct Pressure

- Step 1: Find the source(s)
- Step 2: Cover the source
- Step 3: Apply pressure
- Step 4: Maintain pressure until bleeding has stopped

Controlling Bleeding: Tourniquets

- CAT (Combat Application Tourniquet)
- Place above bleeding
- Pull strap through buckle
- Twist rod until bleeding stops/slows
- Secure the rod
- Write time on tourniquet

PM 3-4

Controlling Bleeding: Improvised Tourniquets

- Use whatever is available
- Strip of cloth, not a leather belt
- Strong stick, dowel, wooden spoon
- Write time on tourniquet or limb

Exercise – Improvised Tourniquet

Approach patient

Apply direct pressure

Apply an improvised tourniquet

Stop The Bleed Training

Shock

- Main signs of shock (**RPM**):
  - **R**espirations - Rapid and shallow breathing – more than 30 a minute
  - **P**erfusion - Capillary refill of greater than two seconds
  - **M**ental Status - Failure to follow simple commands, such as “squeeze my hand

Maintaining Body Temperature

- Remove wet clothing
- Place something between patient and ground (e.g., cardboard, jacket, blanket)
- Wrap patient with dry layers (e.g., coat, blanket, Mylar emergency blanket)
- Shield patient from wind

Providing Comfort

- What can you do?
  - Keep them warm
  - Offer a hand to hold
  - Maintain eye contact
  - Be patient and understanding
  - If you have to move on to provide aid to another person, let them know

Review

- Open airway and position patient correctly
- Control bleeding using direct pressure and/or a tourniquet
- Maintain normal body temperature (prevent shock)

Break Time

Basic First Aid

- Burns
- Wounds
- Amputations and impaled objects
- Fractures, dislocations, sprains, and strains
- Cold-related injuries
- Heat-related injuries
- Insect bites/stings

Treating Burns

- Prevent hypothermia
- Manage pain
- Reduce risk of infection

Burn Severity

- Factors that affect burn severity:
  - Temperature of burning agent
  - Period of time survivor exposed
  - Area of body affected
  - Size of area burned
  - Depth of burn

Treating Heat Burns

- **Cool the burn**
  - Remove from source of burning
  - Cool skin or clothing (No ice)
- **Dress the burn**
  - Cover loosely with dry, sterile dressings
  - Wrap fingers and toes loosely and individually
- **Treat patient for shock**

Treatment for Chemical Burns

- Remove cause of burn and affected clothing or jewelry
- If irritant is dry, gently brush away as much as possible
- Flush with lots of cool running water
- Apply cool, wet compress to relieve pain
- Cover wound loosely with dry, sterile or clean dressing

PM 3-10

Wound Care

- Main treatment for wounds:
  - Control bleeding
  - Apply dressing and bandage
- Apply dressing and bandage:
  - Apply dressing directly to wound (sterile)
  - Bandage holds dressing in place

Signs of Infection

- Signs of possible infection:
  - Swelling around wound site
  - Discoloration
  - Discharge from wound
  - Red striations from wound site

PM 3-11

Amputations

- If amputated body part is found:
  - Save tissue parts, wrapped in clean material and placed in plastic bag
  - Keep tissue parts cool, but NOT directly on ice
  - Keep severed part with survivor

Impaled Objects

- When foreign object is impaled in patient's body:
  - Immobilize affected body part
  - Do not attempt to move or remove
  - Try to control bleeding at entrance wound
  - Clean and dress wound, making sure to stabilize impaled object

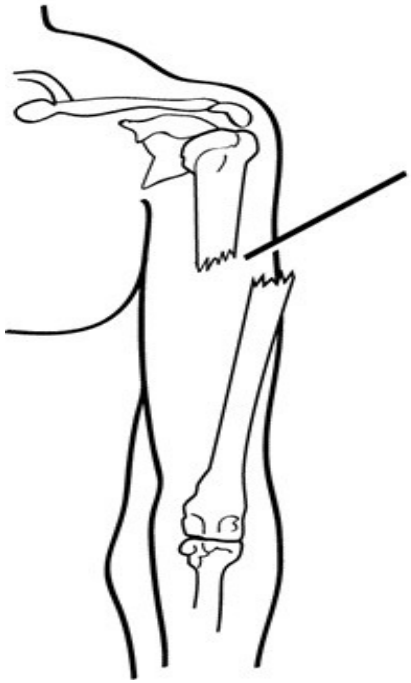
Exercise - Bandaging

Apply dressing and bandaging to forearm

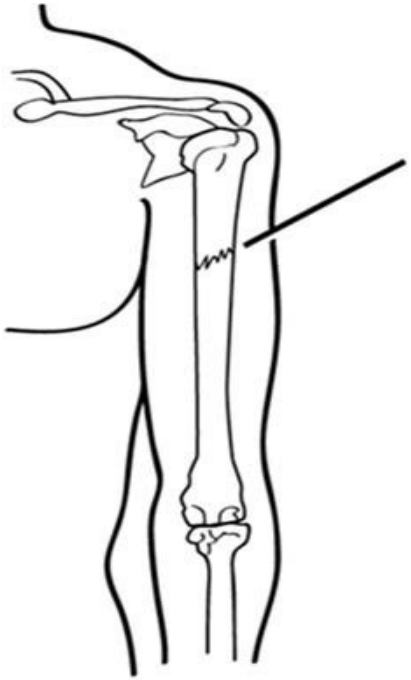
Fractures, Dislocations, Sprains, Strains

- Immobilize injury and joints immediately above and below injury site
- If uncertain of injury type, treat as fracture

Types of Fractures



Open Fracture
Open Fracture in which the bone protrudes through the skin.

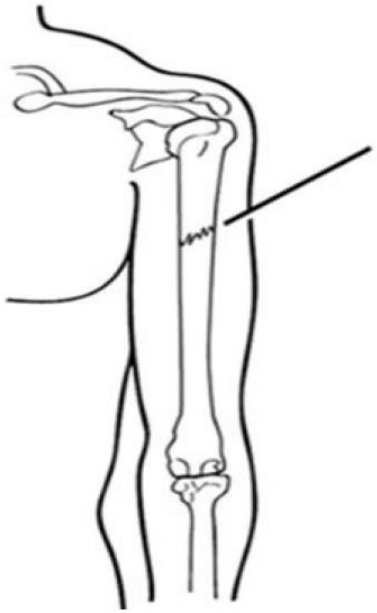


Closed Fracture
Closed Fracture in which the fracture does not puncture the skin.

PM 3-12

Types of Fractures

Displaced Fracture
Displaced Fracture in which the fractured bone is no longer aligned.



Nondisplaced Fracture
Nondisplaced Fracture in which the fractured bone remains aligned.

Treating Open Fractures

- Do not draw exposed bone ends back into tissue
- Do not irrigate wound
- Cover wound with sterile dressing
- Splint fracture without disturbing wound
- Place moist dressing over bone end

Dislocations

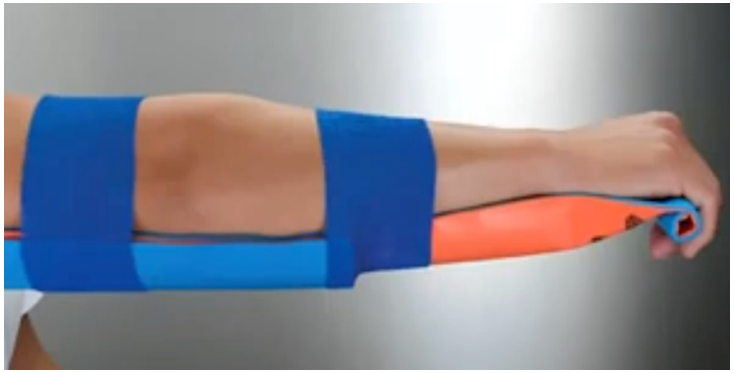
- Dislocation is injury to ligaments around a joint
  - It is so severe that it permits separation of bone from its normal position in a joint

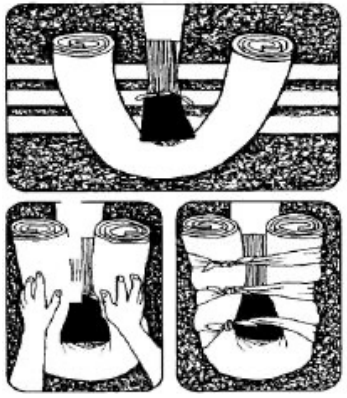
- Treatment:
  - Immobilize; do NOT relocate

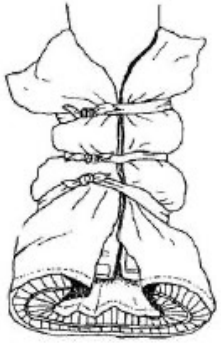
Signs of Sprain

- Tenderness at site
- Swelling and bruising
- Restricted use or loss of use

Splinting







PM 3-14

Splinting

- Check Pulse, Movement, and Sensation (PMS) before and after splinting/immobilization
- Immobilize joint above and below fracture
- Add padding for comfort

PM 3-14

Splinting

- Blanket and Anatomical Splints

PM 3-14

Sling

- Immobilizes elbow
- Provides Comfort
- Reduces Swelling

PM 3-14

Exercise – Splint & Sling

Apply splint for fractured radius bone (forearm)

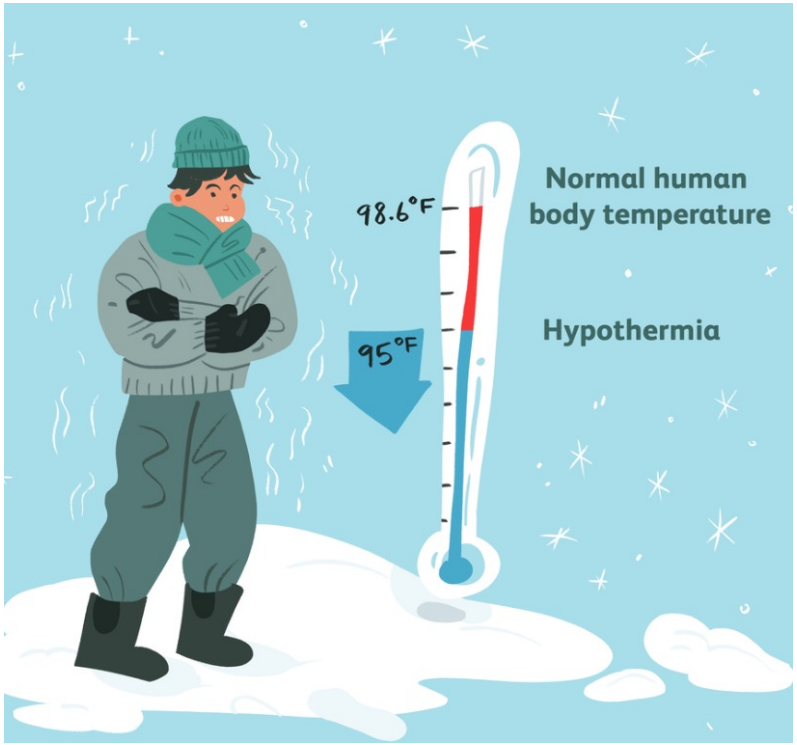
Put arm in sling

Cold-Related Injuries

- Hypothermia:
  - Occurs when body's temperature drops below normal
- Frostbite:
  - Occurs when extreme cold shuts down blood flow to extremities, causing tissue death

Symptoms of Hypothermia

- Body temp of 95°F or lower
- Redness or blueness of skin
- Numbness and shivering
- Slurred speech
- Unpredictable behavior
- Listlessness



Hypothermia Treatment

- Remove wet clothing
- Put something under the patient
- Keep them sheltered and/or covered
- Do not attempt to use massage
- Place in the recovery position if unconscious

Symptoms of Frostbite

- Skin discoloration
- Burning or tingling sensation
- Partial or complete numbness

Frostbite Treatment

- Immerse injured area in warm (NOT hot) water
  - Warm slowly!
- Do not allow part to re-freeze
- Do not attempt to use massage
- Wrap affected body parts in dry, sterile dressing

Heat-Related Injuries

- **Heat cramps**
  - Muscle spasms brought on by over-exertion in extreme heat
- **Heat exhaustion**
  - Occurs when exercising or working in extreme heat results in loss of body fluids
- **Heat stroke**
  - Survivor's temperature control system shuts down
  - Body temperature rises so high that brain damage and death may result

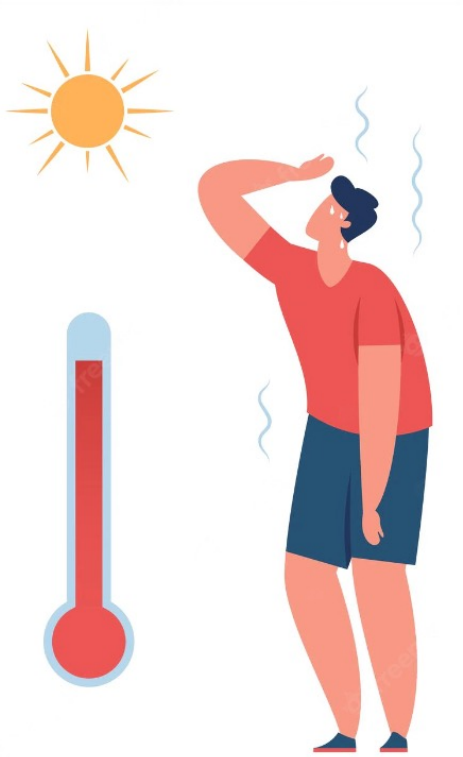
Symptoms of Heat Exhaustion

- Cool, moist, pale or flushed skin
- Heavy sweating
- Headache
- Nausea or vomiting
- Dizziness
- Exhaustion

PM 3-17

Symptoms of Heat Stroke

- Hot, red skin
- Lack of perspiration
- Changes in consciousness
- Rapid, weak pulse and rapid, shallow breathing



PM 3-17

Treatment of Heat-Related Injuries

- Remove from heat to cool environment
- Cool body slowly, damp cool towel, no ice
- Have the heat exhaustion patient drink water, SLOWLY
- Do not provide food or drink to the patient if he or she is experiencing vomiting, cramping, or is losing consciousness

Treatment for Bites/Stings

- If bite or sting is suspected, and situation is non-emergency:
  - Remove stinger if still present by scraping edge of credit card or other stiff, straight-edged object across stinger
  - Wash site thoroughly with soap and water
  - Place ice on site for 10 minutes on and 10 minutes off

Anaphylaxis

- Calm the individual
- If possible, find a patient's Epi-pen
  - Patient must administer (CA law)
- Do not give any medicine aside from the Epi-pen
  - This includes pain relievers, allergy medicine, etc.

Unit Summary

- Life-saving measures CERT volunteers can take:
  - Open airway and position patient correctly
  - Control bleeding using direct pressure and/or a tourniquet
  - Maintain normal body temperature (prevent shock)
- Other injuries that are common after disasters:
  - Burns
  - Wounds
  - Amputations and impaled objects
  - Fractures, dislocations, sprains, and strains
  - Cold-related injuries
  - Heat-related injuries
  - Insect bites/stings