**CH 16 MFR: Environmental Emergencies:**

Thermoregulation: the way the body creates and releases heat

**Heat Transfer**1. Conduction: direct transfer from a warmer to a cooler object

2. Convection: heat loss through the heating of cooler water or air as it passes over a warmer surface-

 Example-skin. Loos heat faster in water than in air-25x faster

3. Evaporation: air or water passes over the moisture on skin-perspiration

4. Radiation: direct transfer-object warmer gives off heat. Keep skin covered prevents heat loss

5. Respiration:

**Cold Related Emergencies: Localized or general**

 **Frostbite: Localized**

Superficial: Blanching or whitening of skin, loss of sensation, skin is soft to touch,

 Complains of tingling when it is rewarmed

Deep Frostbite: white waxy skin, skin is firm or feels frozen, swelling, blisters,

skin can look purple and blanching or mottled and bluish when warmed

 Remove wet clothes, warm passively, due not rub vigorously or put on direct heat

 \*\*Elderly are susceptible to frostbite

 **Hypothermia: Below 95 degrees**

 Prolonged exposure to cold or wet environment

 Being very old or young-susceptible

 Underlying medical conditions

 Alcohol or drug abuse

 Certain medications or drugs

 Primary: refers to body temp below 95 degrees because of environment

 Secondary: occurs when illness, alcohol, or aging influences body’s ability to keep heat

 Mild: 89.6-95 degrees

 Moderate: 78.8-89.6

 Severe: below 78.8

 **Signs and symptoms:** cold skin temp, shivering, decreased mental status or motor

 function, poor judgment, dizziness, stiff or rigid posture, speech difficulties,

 poor communication ,low or absent blood pressure, mood changes, memory disturbances, poor coordination, muscle stiffness

**Heat Related Emergencies:**

 Heat cramps: Legs/ abdomen- result from fluid loss and salts being loss from the body

 Might complain of dizziness, faintness, exhaustion

 Heat Exhaustion: rapid shallow breathing, excessive sweating, total body weakness, dizziness

 Circulatory system is failing

 Heat Stroke: Life threatening emergency!

 Deep breathing followed by shallow breathing, rapid strong pulse followed by rapid

 Weak pulse, dry, hot skin, dilated pupils, loss of consciousness, muscle twitches, seizure

Poisonings:

 Ingestion:

 Inhalation:

 Absorption

 Injection: IV or bite

 Allergic Reaction: red, swollen, itchy skin, wheezing, airway closes

 \*\*Anaphyaxis: Severe reaction constricts airway, dilates blood vessels—Epi Pen

Water related Emergencies:

 Decompression Sickness (Dysbarism)—the bends\

 Scuba divers-as diver ascends bubbles form from the gases they have inhaled-

 Can develop days after heart attack, pneumothorax pain in joints

 Drownings: reach, throw, row, and go

Lightning and electrocution:

 Lightning can travel 6 miles

 Unplug electric unit patient is near or touching

Emergencies in the wilderness:

 Discontinue CPR after 30 mins unless hypothermic or electrocution

 Spinal injury: difficult to make hand made. Send for team if needed

 Wound care: boil water and use iodine-if not allergic to iodine or shellfish

 Altitude: 21% o2..pressure changes

 Acute Mountain Sickness: headache, dizziness, loss of appetite, vomit, shortness of breath

 Blisters: donut hole to protect it

 Poison Ivy: Sumack/oak

Bites and Stings:

 Insects: bees, wasps, spiders: black widow, brown recluse

 Mammals: infection, rabies

 Snakes:

 Marine animals: jellyfish

 Bites and Stings: wash and cold compress,

scrap stinger off and immobilize snake bitten extremities