

Heat Illnesses

1. **Heat Cramps:** Painful, involuntary muscle spasms caused by excessive water and electrolyte loss during or after intense exercise in heat.

Signs and Symptoms of Heat Cramps

- Fatigue
- Thirst
- body temperature is not usually elevated
- skin remains moist and cool (sweating)
- pulse and respiration may be normal to slightly elevated
- dizziness may be present
- Pain and intense muscle contraction

Treatment for Heat Cramps:

- ◆ Stop activity
- ◆ Rest in cool place
- ◆ Massage cramp with ice and do passive stretching
- ◆ Drink cool water with diluted electrolyte/sodium solution

2. **Heat Exhaustion:** Illness usually presenting in poorly acclimatized people, early in the summer during the first few intense training sessions. Individuals who wear protective equipment or heavy uniforms are also at greater risk for this occurrence.

Signs and Symptoms of Heat Exhaustion

- Dehydration
- Lightheadedness
- Loss of consciousness
- Diarrhea
- Persistent muscle cramps
- Profuse sweating
- Chills
- Cool, clammy skin
- increased metabolic heat load
- reduced blood volume due to dehydration and/or salt depletion secondary to fluid losses
- appears ashen or gray
- fatigue and/or weakness
- uncoordinated gait
- dizziness
- nausea and/or vomiting
- decrease in urine output
- headache
- low blood pressure in the upright position
- rapid and shallow respiration
- rapid and weak pulse
- elevated core temperature possible (102°-103° F)

Treatment for Heat Exhaustion:

- ◆ Rest in cool room or in the shade out of direct sunlight
- ◆ Remove equipment and clothing
- ◆ Execute rapid cooling of body (fans, ice towels, or ice bags)
- ◆ Initiate fluid replacement
- ◆ Individual may need IV fluids

- 3. Heat Stroke:** The least common heat illness, but the most serious and life threatening. This condition is preceded by prolonged strenuous exercise in individuals who are poorly acclimatized or in situations where evaporation of sweat is prohibited. This is a case when an individual's cooling mechanism is starting to fail.

Signs and Symptoms of Heat Exhaustion

- Loss of consciousness
- Drowsiness
- Dehydration
- Weakness
- Hot and wet or dry skin
- Elevated heart rate 100-120bpm
- Hyperventilation
- Vomiting
- diarrhea
- rapid heart rate
- emotional instability
- aggressiveness
- apathy
- staggering
- seizures
- decreased to no sweating present
- Core temperature is rising 104°F -106°F *As temperature continues to rise permanent brain damage may result!
- skin becomes hot and dry
- deep breaths
- irritability
- disorientation/confusion
- dilated pupils with the presence of a glassy stare

Treatment for Heat Stroke:

- ◆ ACTIVATE EMS IMMEDIATELY!
- ◆ Rest in cool room get out of direct sunlight immediately
- ◆ Remove clothing and equipment
- ◆ Rapidly cool the body with ice on the major blood vessels (immersion in an ice bath is best)
- ◆ Treat for shock
- ◆ Monitor for organ-system complications for at least 24 hours

*Every second a person is not treated properly in this condition could prove to be life threatening