

HEAT ILLNESS PREVENTION

NFHS GUIDELINES

The Heat Index can be determined by entering the zip code at your location at this Web site:

<http://www.osaa.org/heatindexdefault.asp>

STAGES OF HEAT ILLNESS

1. **Exercise-associated Muscle Cramps (EAMC) -**

Painful muscle spasms following prolonged exercise often, but not always, in a hot environment. These are sometimes called "heat cramps."

Management: EAMC usually responds to rest, prolonged stretching of involved muscle groups, and sodium replacement in fluid or food (e.g., one quarter teaspoon of table salt or one to two salt tablets in 500 ml of water or sports drink, tomato juice or salty snacks). In the case of severe full body cramps, the athlete should be transported by EMS to a hospital to receive intravenous fluids. Protracted cramping in the absence of signs of dehydration suggests dilutional hyponatremia (low sodium) and serum sodium levels should be measured prior to administering intravenous fluids.

2. **Heat Exhaustion -**

Heat exhaustion is the inability to continue to exercise and can occur at any temperature and is not necessarily associated with collapse. Heat exhaustion associated with dehydration is more common in a hot, humid environment.

Recognition: Signs and symptoms of heat exhaustion include tachycardia, fatigue, weakness, piloerection (goose bumps), muscle cramps, nausea, vomiting, dizziness, syncope, headache, poor coordination and confusion.

Management: Elevate the legs to increase venous return and cardiac preload, rehydrate to correct volume depletion, and transfer to a cool, shaded location. Aggressive decrease in core temperature is indicated to prevent progression to heat stroke. If a team physician or athletic trainer is unavailable to assess the athlete, EMS should be activated so the athlete can be transported to an emergency facility. There should be no same-day return to activity for athletes with syncope, altered mental status, neurologic symptoms or core temperature greater than 104 degrees Fahrenheit. Adequate time for full recovery is necessary prior to returning to play.

3. **Exertional Heat Stroke (EHS)** is defined by the presence of a rectal temperature greater than 104 degrees Fahrenheit (40C) combined with altered mental status

Recognition: There is usually sweat

soaked, pale skin. Hyperventilation, tachycardia, vomiting, diarrhea and shock frequently progress to arrhythmia, acute renal failure, rhabdomyolysis (the release of muscle potassium, acid and enzymes into the blood as muscle cells break open and die), pulmonary edema, disseminated intravascular coagulopathy (coagulation of blood throughout the vessels) and cardiac arrest. Often, central nervous system signs are the first to appear: altered mental status, confusion, seizures and coma.

Management: EHS is a medical emergency and EMS must be activated. Successful treatment requires

early recognition. Rapid reduction in core temperature is the key to prevention of organ failure. This is best accomplished by immersion in ice water. Less effective substitutes include ice packs to the groin

and armpits, cool mist fans and alcohol rubs. If optimal cooling can be provided in the field, if there are no other life-

threatening complications and if there is the ability to monitor the athlete during cooling, then cooling may be completed prior to transport. Otherwise, while efforts at cooling may be initiated

in the field, they should not delay "load and go" EMS transport to a facility capable of comprehensive care.