

North Country National Scenic Trail
“TAILGATE SAFETY SERIES”



HEAT DISORDERS

Heat becomes a problem when humidity and air temperature combine with hard work to raise body temperature beyond safe limits. Sweat is the body’s main defense against heat disorders. Drinking water often is crucial to staying healthy in such environments.

There are three forms of heat related illness: heat cramps, heat exhaustion, and heat stroke.

Heat Cramps is the mildest of the heat illnesses.

- Heat cramps can progress to heat exhaustion and eventually heat stroke
- Heat cramps are involuntary muscle contractions, typically in the large muscle groups, caused by failure to replace fluids or electrolytes, such as sodium and potassium
- Cramps can be relieved with stretching and by replacing fluids and electrolytes
- Heat cramps can be prevented by maintaining an adequate intake of water, electrolyte replacement drinks, and by eating fresh fruits and vegetables

Heat Exhaustion is more serious than heat cramps.

- Heat exhaustion is characterized by weakness; extreme fatigue; nausea; headaches; and wet, clammy skin
- Heat exhaustion results when the body produces more heat than it can dissipate
- Inadequate fluid intake is a major contributing factor
- Treat heat exhaustion by resting in a cool/shaded environment, by removing clothing so that one’s sweat can evaporate, and by replacing fluids and electrolytes

Heat Stroke is a medical emergency—brain damage and death may result if treatment is delayed.

- Heat stroke is a failure of the body’s heat controls. Sweating stops and the body temperature rises
- Although classic teaching describes a heat stroke patient as “hot and dry,” recent studies have shown that over 50% of heat stroke patients are sweating heavily. Therefore, the hallmark symptom of heat stroke is altered mental status

- Heat stroke is characterized by hot, often dry skin; body temperature above 105.8 degrees Fahrenheit; mental confusion; loss of consciousness, convulsions, or even coma
- Begin rapid cooling with ice or cold water, fanning the victim to promote evaporation
- For rapid cooling, partially submerge the victim's body in cool water, and treat for shock if necessary
- Provide oxygen if it is available
- Whereas heat cramps and heat exhaustion may be treated locally, heat stroke patients should be medivaced/transported to a hospital ASAP

You can prevent the serious consequences of heat disorders by improving your level of fitness and becoming acclimated to the heat. Maintaining aerobic fitness is one of the best ways to protect against heat stress. The fit trail worker has a well-developed circulatory system and increased blood volume. Both are important to regulate body temperature. Fit workers start to sweat sooner, so they work with a lower heart rate and body temperature. They adjust to the heat twice as fast as the unfit worker.

References:

Standards for Fire and Fire Aviation operations, Interagency, www.nifc.gov/references/index.html

Fitness and Work Capacity—Second Edition

Six Minutes for Safety, http://www.nifc.gov/sixminutes/dsp_sixminutes.php