



**Today's discussion is from the
First Aid / Health Category.**

HEAT DISORDERS

Heat becomes a problem when humidity, air temperature, and radiant heat combine with hard work to raise body temperature beyond safe limits. Sweat is your main defense. Everyone on the fireline must understand the importance of drinking water often.

- Heat disorders are a group of illnesses caused by prolonged exposure to hot temperatures, restricted fluid intake, or failure of the body's ability to regulate its temperature. The general term used for heat disorders is hyperthermia (pronounced hi-per-THUR-mee-uh). The three most common forms of hyperthermia are;
 - Heat cramps
 - Heat exhaustion
 - Heat stroke

- Heat cramps are the least serious form of hyperthermia. They are the first sign that the body is having difficulty with increased temperature. Heat cramps are a warning sign that more serious problems may soon develop.

- Heat exhaustion is more serious than heat cramps. Heat exhaustion results when the body produces more heat that it can dissipate. Or the body may become dehydrated, or its temperature regulation system may begin to fail. Heat exhaustion is characterized by:
 - Weakness
 - Extreme fatigue
 - Nausea
 - Headaches
 - Wet, clammy skin Urine dark yellow or orange

Mental confusion may develop (This is a serious trigger point of the onset of Heat stroke).

- The first steps in treating any form of hyperthermia include:
 - Moving the patient to a cooler location.
 - Providing the patient with cool water.
 - Giving the patient liquids that contain electrolytes.

Electrolytes are chemicals that occur naturally in the body and that maintain the proper balance of fluids in the body. The usual liquids given a patient are sports drink such as Gatorade.

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 environment, by removing clothing so that one's sweat can evaporate, and by replacing fluids and electrolytes.

Prompt treatment of heat cramps and heat exhaustion is usually successful. Patients recover in a matter of hours or, at most, a day or two. Heat stroke poses more serious problems.

- Heat stroke is a medical emergency. Heat stroke is caused by failure of the body's heat controls. Sweating stops and the body temperature rises. Brain damage and death may result if treatment is delayed. 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. 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 off the line ASAP, by air if possible, as their condition may worsen suddenly. (Was repetitive)
- 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. Typically, on the fireline we do not have medical thermometers. Therefore, the hallmark of heat stroke is altered mental status. You should suspect heat stroke if a firefighter is hot, fatigued, and shows some altered mental status, such as inability to remember the day or the current situation. They may ask, "Where am I?"
- 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
- Heat stroke is a medical emergency. Brain damage and death may result if treatment is delayed. 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. 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 off the line ASAP, by air if possible, as their condition may worsen suddenly.
- You can prevent the serious consequences of heat disorders by improving your level of fitness and becoming acclimated to the heat. Maintaining a high level of aerobic fitness is one of the best ways to protect against heat stress. The fit 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:

[Interagency Standards for Fire and Fire Aviation Operations](#)

[Fitness and Work Capacity--Second Edition](#)

<http://www.faqs.org/health/Sick-V2/Heat-Disorders.html>

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