

Tully Hose Co. #1

Standard Operating Guidelines
Heat / Stress Management
Guideline # TF-403 – Rev.1

Purpose: To establish guidelines and responsibilities for minimizing the effects of heat stress on our fire fighters. This guideline should be used in conjunction with TF-301 Incident Rehabilitation.

Introduction: Operations involving high air temperatures, radiant heat sources, high humidity, direct physical contact with hot objects, or strenuous physical activities have a high potential for inducing heat stress in fire fighters engaged in fire ground operations. This fact is also compounded by the wearing of our P.P.E.

How heat affects the body:

The body's internal core temperature must be maintained within a fairly rigid range of temperature. This core temperature is 99.5 degrees, plus or minus 1.8 degrees. Determined to maintain that core temperature, the body strives to strike a balance between the amount of heat produced internally and the amount of heat lost (or gained) to the outside environment. This is done largely through sweat. As sweat evaporates, it takes heat with it. Work harder and the body will crank up the heat exchange system: you will sweat more. The internal core temperature stays within safe ranges as long as this heat/cooling mechanism functions properly. But, if it is very hot and or humid, if you are near a heat source, and are wearing your P.P.E. the mechanism of heat exchange can be altered dramatically.

The Heat Index:

This takes into account factors such as temperature, and relative humidity. These factors can significantly affect how the heat actually feels. Keep in mind the following cautionary guidelines for heat indexes:

- 90 to 104 degrees F - Heat cramps or heat exhaustion possible
- 105 to 130 degrees F – Heat cramps or heat exhaustion likely; heat stroke possible
- 131 F or higher – Heat stroke highly likely

Heat Disorders and Health Effects:

- Heat stroke:** Occurs when the body's system of temperature regulation fails and body core temperature rises to a critical level. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke is confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature.
- Heat exhaustion:** The signs and symptoms of heat exhaustion are headache, nausea, vertigo, weakness thirst, and giddiness.
- Heat cramps:** Usually caused by performing hard physical labor in a hot environment. Cramps have been attributed to an electrolyte imbalance caused by sweating.

Command's Responsibilities:

1. Will establish incident rehabilitation when needed
2. Will ensure no fire fighters will be permitted to continue operations beyond a safe level of their physical and mental endurance.
3. Will ensure that fire fighters will receive hydration and replenishment as needed.
4. Will ensure that fire fighters will receive medical treatment and transport if needed.

Firefighter's Responsibilities:

1. The fire fighters must recognize their own Physical and Mental limitations.
2. They must communicate their need for rehabilitation and rest to their supervisors.