



Worksite: \_\_\_\_\_ Instructor: \_\_\_\_\_ Date/Time: \_\_\_\_\_

## Topic C009: Beat the Heat (A)

**Introduction:** In order to work safely and effectively during long, hot summer workdays, certain precautions must be taken. Over-exposure to high temperature and humidity levels during prolonged physical exertion may result in heat disorders such as heat cramps, heat exhaustion, or heat stroke. Hyperthermia is the medical term used to describe the over-heating of the human body's core temperature to dangerous levels. Common sense and thoughtful scheduling is the best way to prevent heat related illnesses but sometimes the situation calls for first aid to get a person cooled-down before serious injury or illness occurs.

**Operations involving very** hot environments or poorly ventilated work-spaces should be avoided during the peak heat hours of the day. Fluids and salts (electrolytes) lost through heavy sweating must be continuously replaced. Commercially available sports drinks such as Gatorade contain the extra salts. Drinking plenty of these kinds of fluids and doing everything needed to keep your core body temperature within manageable levels is imperative. Let's take a look at the progressions of the three primary categories of hyperthermia.

### **Heat Cramps "Phase I" (also includes heat syncope):**

This condition results from over-exertion and heavy sweating. Heat cramps are severe muscle spasms that often begin suddenly in the hands, calves, or feet; they are painful and disabling. This is caused from salt depletion as sweat losses are replaced by water alone. The muscles become hard, tense, and difficult to relax.

When it is determined a person is suffering from hyperthermia, it is vitally important to reduce the victim's core body temperature and then control the secondary effects.

### **Heat Exhaustion "Phase II" (also called heat prostration):**

This condition results from prolonged exposure to extreme heat for many hours. This causes excessive fluid loss from heavy sweating, leading to increased fatigue, weakness, anxiety, drenching sweats, low blood pressure, faintness, and sometimes collapse. The over-heating is due to the electrolytic fluid loss that reduces blood volume, which lowers blood pressure and the pulse.

### **Heat Stroke "Phase III" (sometimes called sunstroke):**

This life threatening condition is caused by over-exertion and over-exposure in extreme heat environments. Heat stroke is imminent when the core body temperature approaches 106F (41C); any higher may result in coma, or even death. The symptoms are dizziness, weakness, emotional instability, nausea/vomiting, confusion, delirium, blurred vision, convulsions, collapse, and unconsciousness. The skin is flushed, hot to the touch, and at first may be covered with sweat that soon dries. Be aware of these warning signals.

**When it is determined** a person is suffering from hyperthermia, it is vitally important to reduce the victim's core body temperature immediately and then control the secondary effects. This must be done before permanent injury to the internal organs occurs. Hyperthermia is an emergency situation, with death being a possibility. Contact Emergency Medical Services immediately and get the person out of the heat. Place cool damp towels over the head, on the neck, between the thighs, and under the armpits.

**Conclusion:** Although electrolyte loss is the root cause, it is not recommended that salt tablets be made generally available without supervision. Avoid directing workers into extreme heat environments. Proper conditioning, appropriate clothing such as a head covering, wet bandana around the neck, continuous re-wetting of clothing, and frequent water breaks are simple, but effective methods to prevent hyperthermia.

**Employee Attendance:** (Names or signatures of personnel who are attending this meeting)

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*These guidelines do not supersede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.*