

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

## Topic C009: Beat the Heat (A)

**Introduction:** There are a variety of factors beyond just the temperature that lead to heat illnesses like heat cramps, heat exhaustion and even hyperthermia. If you work in a hot environment you should know how these factors contribute to the heat stress that affects your body.

### Air Temperature & Humidity

The air temperature is the most obvious risk factor. Humidity is another, because the main way the body cools itself is due to the energy lost from evaporating sweat, and a higher humidity hinders this process. OSHA refers to the U.S. National Oceanographic and Atmospheric Administration's (NOAA) heat index with a table that illustrates the effective temperature: air temperature and humidity

### Heat Sources

Direct sunlight is one source of heat stress. Another source is known as radiant heat. When the ground absorbs heat from sunlight or when machinery generates its own heat, radiant heat is created. Some surfaces absorb and give off more heat than others. For example, asphalt will have more radiant heat than grass.

### Air Movement

The lack of air movement is another heat stress factor. Moving air increases the evaporation of sweat and helps the body cool itself. Circulating air evens out the temperature inside, can bring in cooler fresh air, and removes heated air.

### Workload

The intensity and duration of the work being done are two specific factors that can affect your risk. A heavy workload is tiring and inhibits the body's ability to cool itself. The length of time worked in heat-related conditions also plays a part in heat stress.

### Clothing & PPE

Clothing and any additional personal protective equipment (PPE) are also to be considered. Long pants, sleeves, and gloves may be necessary for the work at hand but in a hot environment inhibit cooling. As an example, a full face respirator prevents breathing and cooling to such a degree that a medical evaluation must be conducted to ensure the person can wear it under necessary conditions.

### Personal Fitness

A person's age, weight, fitness, life style, and acclimation are all factors. Medications can affect the body's ability to regulate its own temperature. Caffeine and alcohol decrease hydration in hot environments.

### Acclimatization

If a person hasn't adapted to working in hot conditions, they can be especially exhausted. This is common for new workers, but also affects seasoned workers who have been away from the worksite for as little as three days. This also applies to all workers during a heat wave when the temperature suddenly increases.

**Conclusion:** All of these factors work together to impact your ability to work in a hot environment. Keep these in mind to know when you should be extra vigilant in watching for heat illness symptoms.

**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.*