



Hanford Occupational Health Services

Heat Stress

Safety Meeting Toolkit

What is Heat Stress?

- ◆ The body is unable to cool itself by sweating and core temperature rises.
- ◆ Heat stress illnesses include:
 - Heat rash
 - Syncope
 - Dehydration
 - Heat cramps
 - Heat exhaustion
 - Heat stroke



Environmental Factors

- ◆ Temperature
 - Body stores heat it cannot disperse
 - Core temp and HR increase
- ◆ Humidity
 - High humidity prevents sweat evaporation
- ◆ Direct sun exposure
- ◆ Still air



Effects of Heat Index

Full sun can increase index by 15 degrees

Fahrenheit	Notes
80–90 °F	Caution — fatigue is possible with prolonged exposure and activity. Continuing activity could result in heat cramps
90–105 °F	Extreme caution — heat cramps, and heat exhaustion are possible. Continuing activity could result in heat stroke
105–130 °F	Danger — heat cramps, and heat exhaustion are likely; heat stroke is probable with continued activity
over 130 °F	Extreme danger — heat stroke is imminent

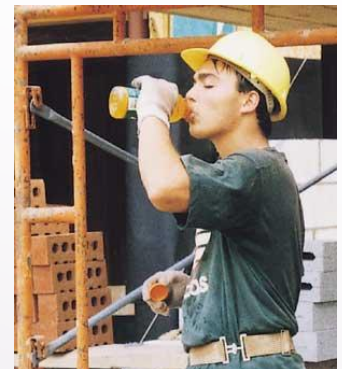
Heat Related Illnesses

◆ Heat Rash

- Sweat is trapped by tight or impermeable clothing.
- Shower after working in multiple layers of clothing or clothing that is not breathable.

◆ Syncope

- Fainting mostly occurs in those who are not acclimated to heat.
- If this occurs:
 - Move person to a cooler environment.
 - Put in reclined position (if they aren't already).
 - Should be evaluated by medical provider ASAP.



Dehydration

- Dehydration refers to the process of reducing body water through:
 - ▶ Illness
 - ▶ Physical exertion
 - ▶ Thermal Stress
 - ▶ Water deprivation
- Maintaining water balance is essential for health and is determined by sophisticated mechanisms that balance water input (drinking) vs. water output (respiration, urination, and perspiration).
- Drink water early and often.

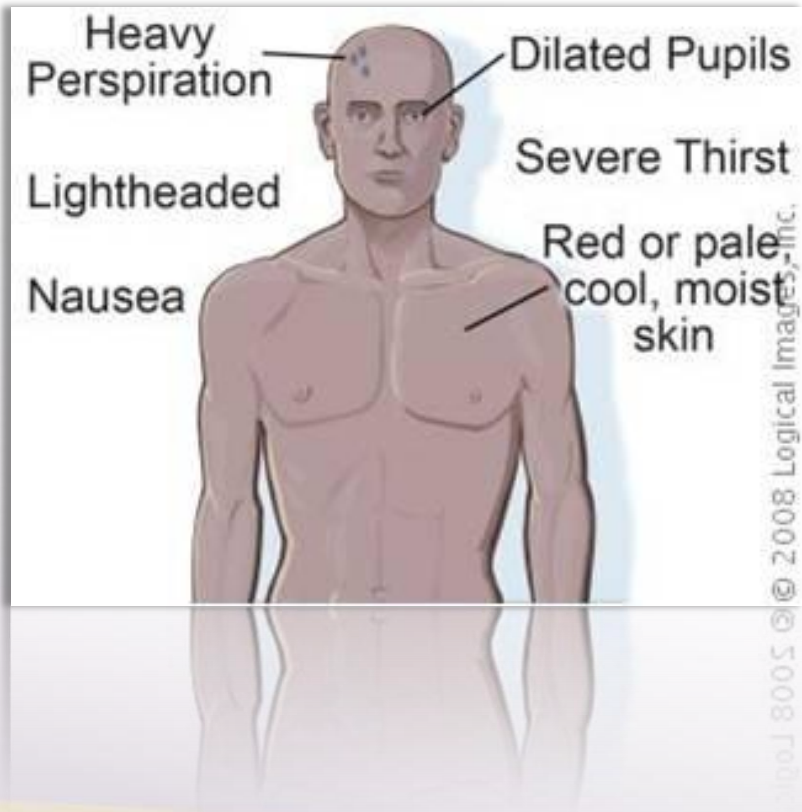


Heat Cramps

- ◆ Painful cramps after heavy work and inadequate fluid replacement.
- ◆ May occur during or after work.
- ◆ Replace fluids with an electrolyte solution.
 - Alternate electrolyte replacement solutions with water if working in hot environment or under high physical stress for more than 2 hours.
 - Otherwise, drink water.



Heat Exhaustion

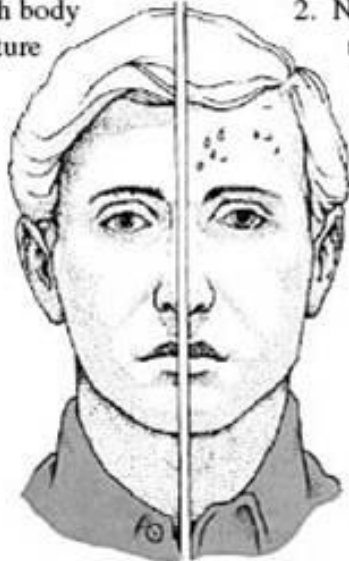


- ◆ Too much sweat loss, not enough fluid replacement.
- ◆ Symptoms
 - Headache
 - Dizziness, weakness
 - Pale, moist skin; profuse sweating
 - Irritability or confusion
 - Loss of consciousness
 - Nausea or vomiting
 - Body temp of 99° F or slightly higher
- ◆ First Aid
 - Move to a cool area.
 - Loosen or remove heavy clothing.
 - Fan patient to move air.
 - Mist with water.
 - Provide cool drinking water.
 - Seek medical attention if no improvement in 30 minutes.

Heat Stroke

Heat Stroke

1. Dry, hot skin
2. Very high body temperature



Heat Exhaustion

1. Moist clammy skin
2. Normal or subnormal temperature

- ◆ Occurs when the body overheats to a point where it can no longer regulate body heat and shuts down.
- ◆ Symptoms:
 - Dry, hot skin
 - No sweating
 - Body temp of 106° F or higher
 - Confusion, loss of consciousness
 - Seizure or convulsions
- ◆ **MEDICAL EMERGENCY: CALL 911!**
 - Move person to a cool place. Remove heavy clothing.
 - Immediately cool patient by any available means.
 - Ice packs under arms, groin and neck
 - Wet towels

Preventing Heat Stress

- ◆ Know signs/symptoms of heat illnesses
- ◆ Know heat illness first aid
- ◆ Block out direct sun
- ◆ Use cooling fans
- ◆ Regular rest periods
 - Reduce work pace or load
- ◆ Drink lots of water, at least 1 cup every 15 minutes (1- 16 oz. water bottle of ½ hour)
- ◆ Wear lightweight, light colored, and breathable clothing
- ◆ Avoid alcohol, caffeine and heavy meals
- ◆ Apply sunscreen





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For more information or to schedule a
presentation, call 376-2109.