



# Heat Illness Prevention

# Agenda

- ✓ Understanding heat stress
- ✓ Ways to limit exposure to heat stress
- ✓ Recognize and treat heat stress

# Heat Stress Occurs

- When employees are assigned to work outdoors on a regular basis
- When there is a sudden and significant increase in temperature and employees have not had time to acclimate



# Employer Responsibilities

- Implementing a written heat stress program by following this training program
- Evaluating and controlling heat stress factors
- Training employees
- Encouraging frequent water consumption (one quart of water per employee per hour)
- Proper response to heat-related illness



# Employee Responsibilities

- ✓ Monitoring personal factors for heat-related illness
- ✓ Frequently drinking water
- ✓ Reporting signs and symptoms of heat-related illness to their supervisor



# Environmental Factors

## Direct sun, heat and humidity

- More direct sun = greater risk

## Limited air movement

- Low or no wind the greater the risk

## Hot equipment

- Engines add more heat

## Heat reflected from the ground or objects

- Asphalt, rocks





## Physical exertion

- What kind of work are you doing?
- How hard are you working?
- How long are you working?

## Clothing and Personal Protective Equipment (PPE)

- Heavy clothing or Multiple layers
- Dark colored clothing
- Protective clothing
- Vapor barrier clothing
- Chemical resistant suits or Respiratory protection



## Physical Factors

- Age
- Weight
- Degree of Physical Fitness
  - Degree of Acclimatization
  - Use of caffeine
  - Smoking
  - Use of alcohol
- Medical Condition







# Helpful Hints for Working in the Heat

- Start and end the work shift early
- When possible, schedule strenuous work during the coolest part of the day
- Increase breaks if:
  - Conditions are very hot
  - Workload is heavy
  - Protective clothing limits cooling
- Take breaks in a shaded, cooler area
- Alternate heavy work with light work when possible
- Have a “Buddy System” to keep an eye on co-workers for symptoms of heat illness

# Helpful Hints for Working in the Heat

- Work in the shade or out of direct sun when possible
- Avoid getting sunburned
- Remove PPE and excess clothing during breaks

REST IN THE **SHADE**  
TO **COOL DOWN**



- Wear proper clothing
  - ❖ Light colored
  - ❖ Light weight
  - ❖ Natural fibers
  - ❖ Hat with a brim
  - ❖ Cooling vest may be helpful in some cases

- It is important to drink small quantities of water throughout the day.
- One quart or more over the course of an hour may be necessary when the work environment is hot, and you may be sweating more than usual.
- Supervisors are responsible for encouraging water consumption.
- Employees are responsible for monitoring their own personal factors for heat-related illness including consumption of water or other acceptable beverages to ensure hydration.

# Proper Hydration is Key

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## DO

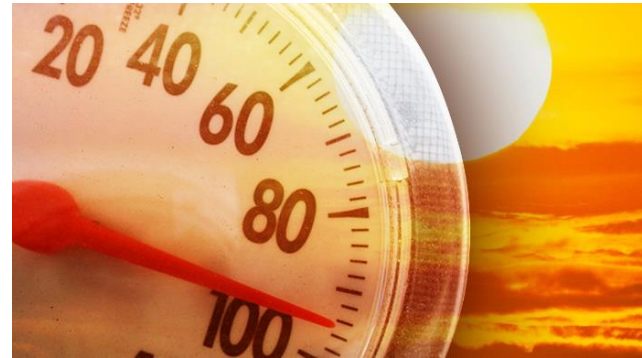
- Start work well hydrated
- Drink plenty of water throughout the day
- Consider sports drinks for electrolyte replacement when sweating a lot

## AVOID

- Drinking pop and other sugary drinks
- Drinking lots of coffee and tea
- Drinking alcohol
- Waiting for thirst before drinking water

# Acclimatization

- When people are not used to being in the heat they need to adjust (acclimate) to hot working conditions over a few days.
- In severe heat, gradually build up exposure time especially if work is strenuous.



- Pay special attention to:
  - New employees
  - People just back from being sick
  - Anyone absent for more than 2 weeks
  - People who have just moved from a cooler climate
  - Everyone during heat wave events

Heat stress is a serious hazard in the workplace as well as at home.

Excessive heat can place an abnormal stress on your body. When your body temperature rises even a few degrees above normal (which is about 98.6 degrees Fahrenheit) you can experience

- muscle cramps
- become weak
- disoriented
- dangerously ill





# Causes of Heat Related Illness

- ✓ So much sweat is lost that
  - ❑ Dehydration results
  - ❑ The body cannot cool itself by sweating and the core temperature rises
- ✓ Salt loss causes heat cramps
- ✓ So much blood flow goes to the skin that other organs can not function properly
- ✓ The body is subject to more heat than it can cope with and heat exhaustion and heat stroke can occur

# How to Respond to Heat Related Illness

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- Employees showing signs and symptoms of heat related illness are to:
  - Cease work and report their condition to their supervisor
  - Be relieved from duty and provided means to reduce body temperature
- Employees experiencing sunburn, heat rash or heat cramps will be monitored to determine whether medical attention is necessary
- 911 must be called if employees experience signs and symptoms of heat exhaustion or stroke
- Fill out an Incident Report for any heat related incident

# Recognize Heat Stress

Heat Stress will reduce your work capacity and efficiency.  
Signs of heat stress include:



- Tiredness
- Irritability
- Inattention
- Muscular cramps

# Heat Cramps

May occur after prolonged exposure to heat.

They are the painful intermittent spasms of the abdomen and other voluntary muscles.



First aid for heat cramps will vary.

The best care is:

Rest

Move to a cool environment

Drink plenty of water- No soda, sparkling water, or Alcohol.

Electrolyte fluids such as Gatorade may also be used.

# Heat Exhaustion

May result from physical exertion in hot environments.

Symptoms may include:

Profuse sweating

Weakness

Paleness of the skin

Rapid pulse

Dizziness

Nausea

Headache

Vomiting

Unconsciousness

Drink water often

Rest in the shade

Report heat symptoms early

Know what to do in an  
emergency

The skin is cool and clammy with sweat. Body temperature may be normal or subnormal

# Heat Exhaustion – First Aid

- Rest in the shade or cool place.
- Drink plenty of water (preferred) or electrolyte fluids.

- Loosen clothing to allow for your body to cool.
- Use cool wet rags to aid cooling

## Treatment of Heat Exhaustion





## HEAT STROKE (Hyperthermia)

### ➤ Symptoms

- Hot, dry skin or profuse sweating
- Hallucinations
- Chills
- Throbbing headache
- High body temperature
- Confusion/dizziness
- Slurred speech

### ➤ Causes

- Due to the failure of the heat-regulating mechanisms of the body.
- Due to high heat and humidity.



## HEAT EXHAUSTION OR HEAT STROKE?

### HEAT EXHAUSTION SYMPTOMS

1. Faint or dizzy
2. Excessive sweating
3. Cool, pale, clammy skin
4. Nausea, vomiting
5. Rapid, weak pulse
6. Muscle cramps

### HOW TO TREAT IT

1. Move to cooler location
2. Drink water
3. Take a cool shower or use cold compresses



### HEAT STROKE SYMPTOMS

1. Throbbing headache
2. No sweating
3. Body temp above 103°  
Red, hot, dry skin
4. Nausea, vomiting
5. Rapid, strong pulse
6. May lose consciousness

### HOW TO TREAT IT

1. Get emergency help
2. Keep cool until treated

# Be Careful in Summer

- ✓ If you are sensitive to sunburns avoid being in the sun from 10 AM to 2 PM when the sun is at its peak.
- ✓ Consume lots of water to stay hydrated.
- ✓ Cool down in air-conditioned rooms or near fans.
- ✓ Wear light colored, natural fiber clothing to help your body to repel heat absorption and cool easier.
- ✓ Pace yourself during strenuous activities





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