

HEAT ILLNESS PREVENTION TRAINING

2014

Risk Management/Environmental Health & Safety

PURPOSE

- ▣ Convey requirements of 8 CCR 3395.
- ▣ Training must be provided to all field personnel supervisory and non-supervisory employees.
- ▣ Identifying, evaluating and controlling exposures, symptoms, control measures, the importance of drinking water, risk factors, emergency procedures, and University procedures.



Environmental Factors

- ▣ Working conditions that create a possibility for heat illness:
 - Working in direct sunlight
 - Temperature above 85 deg. [Cal OSHA Trigger]
 - Elevated humidity
 - PPE that slows cooling
 - Workload & Duration

Heat Index Chart

Relative Humidity (%)

Air Temperature °F	Relative Humidity (%)													
	40	45	50	55	60	65	70	75	80	85	90	95	100	
110	136													
108	130	137												
106	124	130	137											
104	119	124	131	137										
102	114	119	124	130	137									
100	109	114	118	124	129	136								
98	105	109	113	117	123	128	134							
96	101	104	108	112	116	121	126	132						
94	97	100	103	106	110	114	119	124	129	135				
92	94	96	99	101	105	108	112	116	121	126	131			
90	91	93	95	97	100	103	106	109	113	117	122	127	132	
88	88	89	91	93	95	98	100	103	106	110	113	117	121	
86	85	87	88	89	91	93	95	97	100	102	105	108	112	
84	83	84	85	86	88	89	90	92	94	96	98	100	103	
82	81	82	83	84	84	85	86	88	89	90	91	93	95	
80	80	80	81	81	82	82	83	84	84	85	86	86	87	

Heat Index
(Apparent
Temperature)

With Prolonged Exposure and/or Physical Activity

Extreme Danger

Heat stroke or sunstroke
highly likely

Danger

Sunstroke, muscle cramps,
and/or heat exhaustion likely

Extreme Caution

Sunstroke, muscle cramps,
and/or heat exhaustion possible

Caution

Fatigue possible

What do YOU Need?

- ▣ Water

- ▣ Shade

- ▣ Rest

Risk Factors

- ▣ Unaccustomed to working in heat.
- ▣ Physical exertion - work at a pace that can be sustained.
- ▣ Medications.
- ▣ Wearing PPE that traps body heat.
- ▣ Overweight generates more heat.
- ▣ Over age 65, may have less body water and lower sweat efficiency.

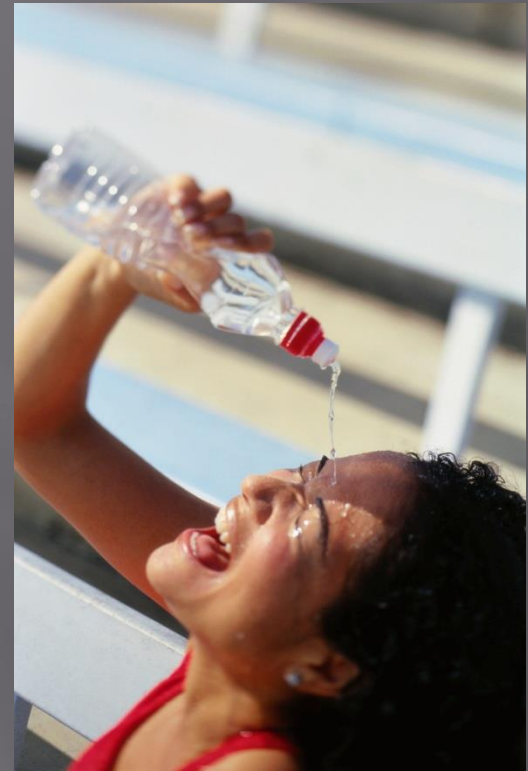


***Work Together when possible,
especially in remote Areas.***

Water

- ▣ Employers required to provide sufficient access potable water at the beginning of the work shift.

- ▣ **Provide one quart per employee per hour** per shift.



- ▣ $1 \text{ quart} \times 8 \text{ hrs.} = 2 \text{ Gallons}$ for every employee/day.
- ▣ $1 \text{ quart} = 2 \text{ pints}$

DRINK WATER!!

- ▣ Drink water before and during work in the heat. Electrolyte drinks are OK. Other beverages will not replenish your body!
- ▣ Avoid alcohol, sugary, carbonated and caffeinated drinks.



Shade

- ▣ Employees ... “suffering from heat illness or believing a preventative recovery period is needed shall be provided access to an area with **shade** that is either open to the air or provided with ventilation or cooling **for a period of no less than five minutes.**”

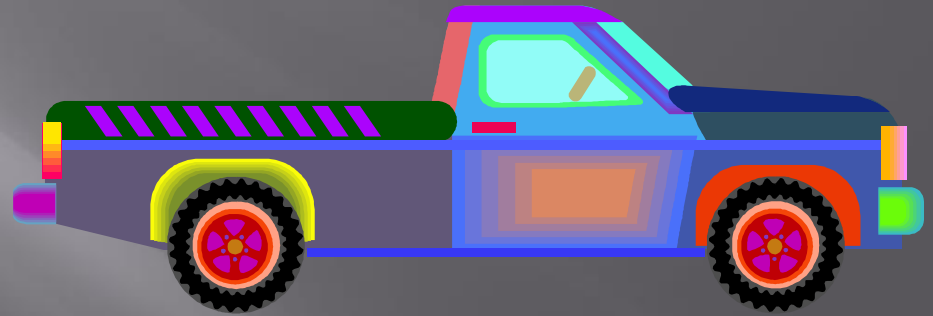
(Cal OSHA)



...such access to shade shall be permitted at all times...

Find Shade!

- ▣ 5-Minute cool-down rest period per hour.
- ▣ Alternate cooling methods if shade is not readily available.
- ▣ > 85 deg. accessible shade close to work.



A vehicle can provide shade if there is effective and operating A/C.

If No A/C, then NO Vehicle!

Heat Illness Symptoms

Heat Exhaustion

- Headache
- Feeling faint, dizzy, weak
- Nausea
- Muscle cramps
- **Cool skin, heavy sweating**, increased pulse

Heat Stroke

- **Hot, dry skin**
- Rapid breathing
- Delirium
- Convulsions
- Unconsciousness or marked abnormal mental status

Another Cal OSHA trigger: >95 deg. F
Supervisors observe workers for heat illness symptoms and ensure communication exists for relaying problems.

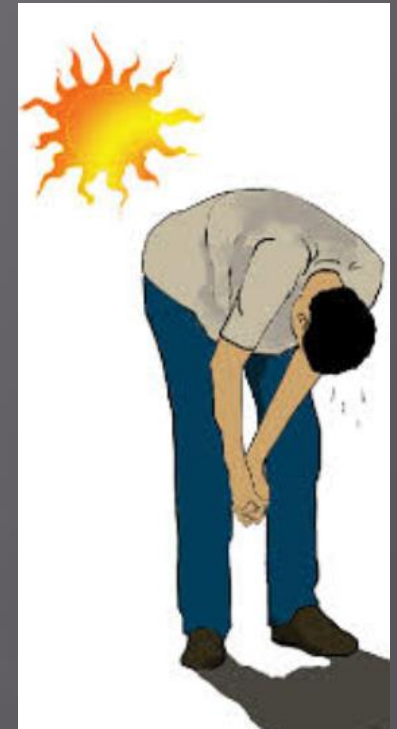
Heat Cramps

- ▣ Heat cramps- occurs when the body has lost:
 - too much salt to sweating
 - or,
 - is low on other electrolytes.
- ▣ What to do- **drink Water.**



Heat Exhaustion

- ❑ **Heat exhaustion-** the body can't replace fluids/salt lost in sweating.
- ❑ What to do- Move to a cool place.
- ❑ Loosen clothing, apply wet compress to skin.
- ❑ Drink Water slowly
- ❑ Elevate feet 8-12 inches.



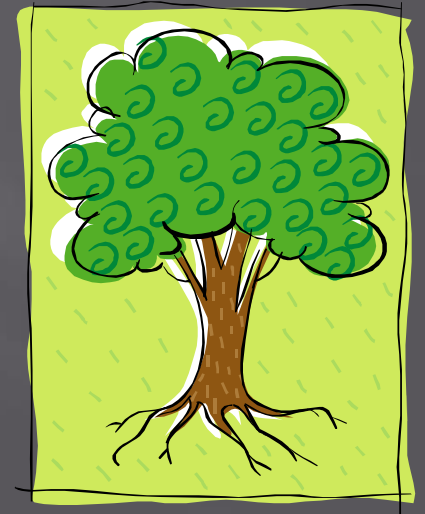
DANGER!!

- ▣ **Heat Stroke** - the body no longer sweats, fluid is reserved for core functions (blood flow and respiration)
Dangerous increase in body temperature (>105 deg.).
- ▣ Can lead to delirium, convulsions, unconsciousness and death.
- ▣ **Call 911!**



Review Program at Employee Pre-Job/Task Meetings

- ▣ Ensure that there is at least 2 gallons of water/each employee/8 hour shift.
- ▣ Point out areas that may provide shade at your work site- Trees, Vehicles, umbrellas, etc.
- ▣ Review & discuss periods of excessive temperature/humidity.
- ▣ Discuss how employees recognize symptoms and call for help – Use a buddy system.



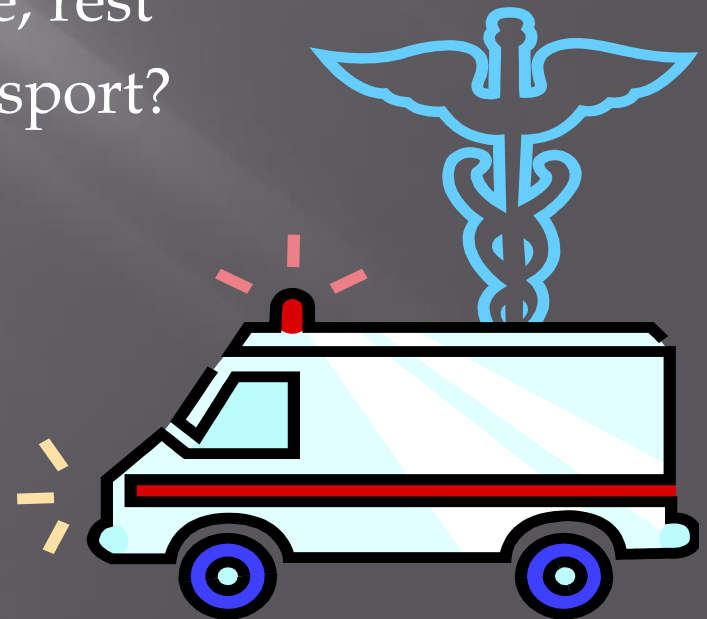
A Brief Video Reinforcement

<http://www.youtube.com/watch?v=9iyvlkVQm14>



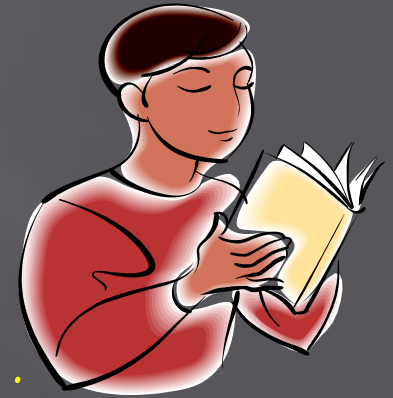
Emergency Procedures

- ▣ Plan and Discuss what to do in advance of an employee's complaint or visible signs of heat stress, heat exhaustion or heat stroke.
 - Communications, buddy systems, radios, phones
 - Local treatment: water, shade, rest
 - Clinic evaluation. What transport?
- ▣ Emergency (heat stroke):
 - get to shade
 - cool body down fast.
 - **Call 911**
 - all actions immediate



Reporting an Injury

- ▣ Report all injuries to your Supervisor.
- ▣ Additionally – heat-related injury/illness MUST be reported to Risk Mg/EHS office.
 - Section 6.8.5. in University Heat Illness Prevention Program.
 - *The Supervisor and/or Leadperson shall notify the University EHS Office and the Workers' Compensation Coordinator upon the identification and diagnosis of an employee suffering symptoms or exposure to a heat-related illness. This shall occur as soon as practical but no longer than 24 business hours from event .*



Test Questions

- ▣ The most dangerous form of Heat related illness is?
 - A) Heat Cramps
 - B) Heat Stroke
 - C) Heat Exhaustion

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 - A) Heat Cramps
 - **B) Heat Stroke**
 - C) Heat Exhaustion

Heat Stroke is the most dangerous and can be fatal.

How to Protect Yourself.

- ▣ The best type of beverage to help prevent heat stress is?
 - A) Gatorade
 - B) Beer
 - C) Water

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- ▣ Water is the best defense against heat related illnesses.

Who is at Risk?

- ▣ You may be more likely to experience heat stress if you are..
 - A) over weight
 - B) Older
 - C) Not use to working in the heat.
 - D) All of the above

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Symptoms

- ▣ The symptoms of heat stroke are:
 - A) Slow pulse, numbness in extremities
 - B) Chills, high body temperature, and lack of sweating.
 - C) Dilated pupils.

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- ▣ Call 911 or transport employee to nearest hospital.

Shade Provision

- ▣ If I feel heat stress how long can I stay in the shade to recover?
 - A) until the end of my shift
 - B) at least 5 minutes
 - C) until lunch

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- ▣ If I feel heat stress how long can I stay in the shade to recover?
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 - C) until lunch

- ▣ **If you are suffering from heat illness or need a recovery period... shade shall be provided for no less than 5 minutes.**

Questions??

- ▣ Call your EHS Office at 3-3531.

or,

- ▣ Or ask your Supervisor or Leadperson.

STAY SAFE AND BE PROACTIVE