

# HEAT ILLNESS PREVENTION

June/July/August 2019



**Inyo County Risk Management**  
**[inyocounty.us/risk](http://inyocounty.us/risk)**



**WATER.  
REST.  
SHADE.**

*The work can't get done  
without them.*

# Agenda

❖ **Seriousness**

❖ **Shade/rest**

❖ **Symptoms**

❖ **Planning**

❖ **Water**

❖ **Training**

# Serious Hazard

**You risk serious injury and an expensive citation if the outdoor temperature in the work area exceeds 80° F and any of these required elements is not present at the site:**

- ❖ Drinking water
- ❖ Shade
- ❖ Employees or supervisor trained in heat illness prevention
- ❖ Emergency response procedures

**For your protection, Cal/OSHA may come by when temperature exceeds 80. Do not underestimate the gravity of heat illness. Also note small rooms where this temperature may also occur and report the hazard to Risk!**

# This is very serious

## If either of these imminent hazards occur:

- ❖ The temperature is  $\geq 95^{\circ}$  and water, shade, training or emergency procedures are not in place;
- ❖ The temperature is  $\geq 80^{\circ}$ , and there is a heat wave, heavy workload or other critical factor putting employees in danger.

## Then Cal/OSHA may (and should):

- ❖ Shut down the operation
- ❖ Not allow work to resume until we demonstrate and document that the imminent hazard has been corrected
- ❖ Issue a very large monetary citation

# Know the Equation

Your skin is a heat exchanger. Factors can disrupt that.

**SWEAT**  **PERSPIRATION**  **EVAPORATION**

High humidity means that evaporation won't work as well.

Higher temps and higher humidity  **Heat Stress  
Chance is Higher**

High Temp + High Humidity + Physical Work = HEAT STRESS

# Heat Stress Recognition

**Heat Rash:** May be accompanied by a prickly heat sensation on the skin. The resulting skin rash may appear over the arms, shoulders, chest, or behind the knees.

**Heat Exhaustion:** Characterized by a pale moist face, dizziness, nausea, headache, fatigue, weakness and/or an unsteady gait. If the warning signs are disregarded, the employee may suddenly collapse.

**Heat Cramps:** Generally characterized by pain in the affected muscles, but are also accompanied by some heat exhaustion characteristics.

**Heat Stroke:** A serious medical condition. Early signs include erratic behavior, hot, dry flushed skin, weakness, unsteady gait, and irritability. If the warning signs are disregarded, the employee may fully develop heat stroke characterized by elevated body temperature (105°F), convulsions and loss of consciousness.

# Avoiding Heat-Related Illness

Actions to reduce likelihood of suffering heat stress:

- Drink plenty of water before you get thirsty, and continue to drink water throughout the work activity (every 15 minutes!!!)
- Wear light, loose-fitting breathable clothing – cotton is a good choice
- Take frequency short breaks from the high temperature / high humidity environment in shade
- Avoid caffeine and alcohol or large amounts of sugar
- Eat smaller meals before the work activity
- Know what medications you take may adversely affect your performance in high temperature / high humidity environments
- Know that respirators and work suits can increase the probability of heat stress

# Heat Illness Prevention Elements Include:

- ❖ Access to Water
- ❖ Access to Shade
- ❖ Weather Monitoring and Acclimatization
- ❖ High Heat Procedures
- ❖ Employee and Supervisory Training
- ❖ Written Procedures Including Emergency Response



# Access to Water

- ❖ Potable drinking water must be made available at no cost to the employee.
- ❖ Maintain, at all times, sufficient quantities of pure and cool potable drinking water
- ❖ That is enough to provide at least one quart (32 ounces) per employee per hour for the entire shift).



# Access to Water



- ❖ **Water must be fit to drink. Water containers CAN NOT be refilled from non-potable water sources (e.g. irrigation wells, sprinkler or firefighting systems).**
- ❖ **Care must be taken to prevent contamination of the drinking water supplied to the workers.**

# Access to Water

- ❖ Implement and maintain effective replenishment procedures when beginning the shift with smaller quantities.



**Unacceptable**

# Access to Water

- ❖ **Locate the water containers as close as practicable given the working conditions and layout of the worksite.**
- ❖ **Keep it readily accessible, move it with the workers!**
- ❖ **Encourage the frequent drinking of water.**

**DO NOT WAIT until thirsty!**



# Shade Up:

When the temperature exceeds 80° F

- ❖ **Have and maintain one or more areas of shade at all times, when employees are present.**
- ❖ **Locate the shade as close as practical to the area where employees are working.**



# Shade Up:

When the temperature exceeds 80° F

- ❖ Provide enough shade to accommodate the number of employees on recovery or rest periods.
- ❖ Provide enough shade to accommodate the number of employees on meal period who remain on site
- ❖ Remember: Access to shade must be permitted at all times.



# Access to Shade, cont.



- ❖ Encourage employees to take a cool-down rest in the shade.
  - ❖ Monitor employees on cool down rests
  - ❖ Ask them if they're experiencing symptoms of heat illness
  - ❖ Don't order back to work until symptoms abated, allow at least a 5 minute rest
  - ❖ Take appropriate first aid steps or emergency response as necessary



# Access to Shade, cont.



- ❖ **Shaded area must not cause exposure to another health or safety hazard. Areas underneath mobile equipment, or areas that require crouching in order to sit fully in the shade, are not acceptable.**



- ❖ **Inside a vehicle is not necessarily adequate shade.**

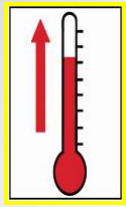


If temperature is below 80° F



*That's a  
mobile  
canopy*

- ❖ **When the temperature does not exceed 80° F, provide timely access to shade upon request.**



# Monitor the Weather

[www.nws.noaa.gov](http://www.nws.noaa.gov)

- ❖ Supervisors must track the temperature by monitoring predicted temperature highs and periodically using a thermometer.
- ❖ Supervisors must consider the temperature when assigning schedules and tasks outdoors or in overheated rooms.

The screenshot displays the National Weather Service website interface. At the top, the NOAA logo and the text "National Oceanic and Atmospheric Administration's National Weather Service" are visible. Below this, there are navigation tabs for "Site Map", "News", and "Organization". The main content area is titled "California State Information" and features a map of California with various weather stations marked. A sidebar on the left contains a search box for "Local forecast by 'City, St'", a "Go" button, and a list of links including "XML RSS Feeds", "Warnings", "Current", "By State/County...", "UV Alerts", "Observations", "Radar", "Satellite", "Snow Cover", "Surface Weather...", "Observed Precip", "Forecasts", "Local", "Graphical", "Aviation", "Marine", "Hurricanes", "Severe Weather", "Fire Weather", and "Text Messages". A "Back to Main Lvl" button is located at the bottom right of the page.

# High Heat Procedures

Heat regulation applies to those who work outside, including:

- ❖ Parks
- ❖ Water
- ❖ Landfills
- ❖ Gardeners
- ❖ Custodians
- ❖ Trades
- ❖ SO/PO
- ❖ HHS outdoor activities

# When the temperature equals or exceeds 95° F

You must implement **FIVE** additional preventive measures:

- ❖ (1) Ensure effective communication (by voice, observation or electronic means).



# When the temperature equals or exceeds 95° F

You must implement additional preventive measures:

- ❖ (2) Observe employees for alertness and signs and symptoms of heat illness.
  - ❖ Supervisory or designee observation of 20 or fewer employees
  - ❖ Mandatory buddy system
  - ❖ Regular communication
  - ❖ Other effective means



# When the temperature equals or exceeds 95° F



- ❖ (3) Designate one or more employees to call for emergency services
- ❖ (4) Give more frequent reminders to drink plenty of water.
- ❖ (5) Hold pre-shift meetings on prevention

# Emergency Response Procedures

- ❖ **Ensure effective communication**
- ❖ **Respond to signs and symptoms of possible heat illness**
  - **Supervisor to take immediate, appropriate action**
  - **If indicators of serious heat illness, implement emergency response procedures**
  - **Employees exhibiting or reporting signs or symptoms of heat illness shall be monitored and not left alone. Onsite first aid or appropriate emergency medical services shall be offered.**
  - **Contact emergency medical services and ensure that clear and precise directions to the site can be provided**

# Address Lack of Acclimatization

- ❖ **Supervisors must have a plan, as necessary, to:**
  - **lessen the intensity and/or shift length of the newly-hired employees' work during a two or more week break-in period;**
  - **modify the work schedule or reschedule non essential duties, during the hot summer months;**
  - **be extra-vigilant with your employees to recognize immediately symptoms of possible heat illness.**



# Address Lack of Acclimatization

- ❖ The supervisor is responsible for the working conditions of their employees, so the supervisor must act effectively when conditions result in sudden employee exposure to unusual heat.
- ❖ All employees shall be closely observed by a supervisor or designee during heat waves (consistent temperature above 80).
- ❖ Employees newly assigned to higher heat areas shall be closely observed by a supervisor or designee for the first 14 days of assignment

# Employee & Supervisor Training

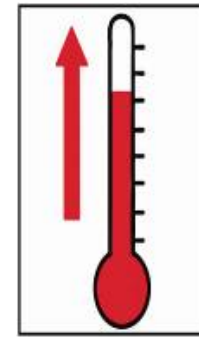
**Ensure all employees and supervisors:**

- ❖ **Are trained before beginning work that should reasonably be anticipated to result in a heat illness.**



# Employee Training

- ❖ The environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body



# Employee Training

## ❖ Our heat illness prevention procedures

- Our responsibility to provide water, shade, cool-down rests
- Access to first aid
- Right of employees to exercise their rights under the heat illness regulation without retaliation



# Employee Training

- ❖ Importance of frequent consumption of small quantities of water
- ❖ Different types of heat illness, common signs and symptoms; and appropriate first aid or emergency response
- ❖ Knowledge that heat illness may progress rapidly

 **Stay safe and healthy!**  
**WATER. REST. SHADE.** *The work can't get done without them.*


**Drink water even if you aren't thirsty – every 15 minutes.**  



**Rest in the shade.**  



**Watch out for each other.**  



**Wear hats and light-colored clothing.**  


**2**  
"Easy does it" on your first days of work in the heat. You need to get used to it. Rest in the shade – at least 5 minutes as needed to cool down.

 **Health effects of heat**  
**Two types of heat illness:**

**Heat Exhaustion**  


**Heat Stroke**  




**1**  
Watch out for early symptoms. You may need medical help. People react differently – you may have just a few of these symptoms, or most of them.

# Employee Training

- ❖ **The concept, importance, and methods of acclimatization**

**Training must include the importance of acclimatization, how it is developed, and how your procedures address it.**

- ❖ **Importance of immediately reporting signs or symptoms of heat illness to a supervisor**
- ❖ **Procedures for responding to possible heat illness**



# Employee Training

- ❖ Procedures to follow when contacting emergency medical services, providing first aid, and if necessary transporting employees.
- ❖ Procedures that ensure clear and precise directions to the work site, including designating a person to be available to ensure that emergency procedures are invoked when appropriate.



# Supervisor Training

**Supervisors must be trained on the following:**

- ❖ **The heat standard requirements**
- ❖ **The procedures they must follow to implement the requirements**
- ❖ **Procedures to follow when a worker exhibits or reports symptoms consistent with possible heat illness, including emergency response procedures and first aid.**
- ❖ **How to monitor weather reports and how to respond to hot weather advisories.**



# Written Procedures

- ❖ **Our Heat Illness Procedures are Section XVI in the IIPP.**
- ❖ **A copy of that section is available on the Risk website ([inyocounty.us/risk](http://inyocounty.us/risk)) and in IIPP binders in main offices.**
- ❖ **You may request a printed copy from your supervisor.**
- ❖ **A copy must be maintained near the worksite where heat illness may occur.**

# Written Procedures

## Our procedures include guidance on

- ❖ Providing access to water and shade
- ❖ Monitoring the weather
- ❖ Instituting high heat procedures
- ❖ Addressing acclimatization methods and procedures
- ❖ Training employees and supervisors
- ❖ Responding to heat illnesses without delay
- ❖ Providing first aid and emergency services
- ❖ Providing clear and precise directions to the worksite.

# Heat Illness Materials

English and Spanish educational materials can be downloaded free from the [www.99calor.org](http://www.99calor.org) website



**WATER. REST. SHADE.**  
*The work can't get done without them.*

[Educational Resources](#) [For Employers](#) [Campaign](#) [FAQ's](#) [Contact](#) **877-99-CALOR**

**YOU'LL LAST LONGER AFTER  
A LITTLE REST.**

**HEAT SAFETY TIPS:**

- Drink water often
- Rest in the shade
- Report heat symptoms early
- Know what to do in an emergency
- Employers must train workers about heat safety and provide water, rest, shade.

*Welcome to the California campaign to protect outdoor workers from HEAT ILLNESS.*

# For Additional Information

Visit the Cal/OSHA Heat Illness Webpage:

<http://www.dir.ca.gov/DOSH/HeatIllnessInfo.html>



The screenshot shows the Cal/OSHA Heat Illness Prevention webpage. The header includes the State of California Department of Industrial Relations logo and navigation links. The main content area features a yellow box with a sun icon and the text: "California employers are required to take these four steps to prevent heat illness". The four steps are: 1. Training, 2. Water, 3. Shade, and 4. Planning. A sidebar on the right contains "Quick Links", "Educational Materials", and "About Cal/OSHA" sections.

State of California  
Department of Industrial Relations

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Cal/OSHA

## Heat Illness Prevention

**California employers are required to take these four steps to prevent heat illness**

- 1. Training**  
Train all employees and supervisors about heat illness prevention.
- 2. Water**  
Provide enough fresh water so that each employee can drink at least 1 quart per hour, and encourage them to do so.
- 3. Shade**  
Provide access to shade and encourage employees to take a cool-down rest in the shade for at least 5 minutes. *They should not wait until they feel sick to cool down.*
- 4. Planning**  
Develop and implement written procedures for complying with the Cal/OSHA Heat Illness Prevention Standard.

Outreach and Education Campaign

- Final Performance and Evaluation Report on the Heat Illness Prevention Campaign - 2012

**Cal/OSHA**

**Quick Links**

- Index of Cal/OSHA services
- File a workplace safety complaint
- Learn about worker rights
- Obtain a free consultation
- Report an accident or injury

**Educational Materials**

- Cal/OSHA publications
- Consultation eTools

**About Cal/OSHA**

- Contact Us
- Locations - Consultation offices
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Cal/OSHA Home

Or contact your supervisor or Risk