

Heat Illness Prevention Plan



California State University, Chico

**Department of Environmental Health and Safety
April 2017**

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The purpose of the Heat Illness Prevention Plan is designed to meet the requirements as set forth in California Code of Regulations, Title 8, Subchapter 7, Group 2, Section 3395, and also to serve as a supplement to California State University, Chico's Injury and Illness Prevention Program (IIPP). This plan is intended to be used in conjunction with the IIPP.

The Heat Illness Prevention Program provides information and establishes procedures which are necessary to ensure that members of the University Community are knowledgeable in the prevention, recognition, and emergency procedures required for preventing and properly responding to a heat related illness.

This document provides information about the types of heat illness and how employees can prevent the occurrence, as well as provides information regarding the signs and symptoms, and what actions to take, including when to seek emergency treatment.

Heat related illnesses are preventable if employees are aware of contributing factors and take the appropriate steps before, during, and after working in either indoor or outdoor high temperature environments.

The Chico area has frequent high temperatures from June through September, with the occasional occurrence of higher temperatures as early as May. Some CSU, Chico employees can anticipate to be exposed to high heat which can result in heat illnesses. Any employee whose job duties require them to work in the outdoors during summer months are exposed to the seasonal elevated heat conditions, and therefore, may be susceptible to one or more forms of heat illness.

Heat related illnesses occur when physical activities are performed in hot weather. The body overheats, can no longer cool itself, and the body temperature rises beyond healthy levels. Contributing factors to heat illness include, but are not limited to, the following:

- Environmental risk factors such as air temperature, humidity, and radiant heat from the sun. Bulky or heavy protective clothing and head coverings are also a factor.
- Personal risk factors such as the individual's acclimatization (ability to become accustomed) to heat, their age, health, and overall condition. Supplements and prescription medications are also factors.
- Failure to stay properly hydrated, drinking adequate amounts of water prior to, during, and after working in the heat is a factor.

2.1 Types of Heat Illness

The three major types of heat illnesses are: heat cramps, heat exhaustion, and heatstroke. Many workers do not recognize the onset of heat illness and continue to work. Heatstroke is a medical emergency that can be life threatening and must be treated quickly and properly.

2.2 Heat Cramps

Heat cramps are the most common type of heat related illness. Heat cramps are caused by heavy perspiration, especially when fluids and electrolytes are not replaced quickly enough. Employees are most at risk during the first few days of hot weather as a person may not yet be accustomed to the heat.

Signs and Symptoms

Heat cramps are painful brief muscle cramps that can occur during work or exercise in a hot environment. Heat cramps usually involve muscles fatigued by heavy work and may include the calves, thighs, stomach muscles, and shoulders. Frequently, heat cramps are delayed and may

occur a few hours later. Although heat cramps can be quite painful, they usually do not result in permanent damage.

Prevention and First Aid

Drink cool, clean water often and throughout the day, up to a quart per hour if your work involves physical labor and you are perspiring heavily. You may choose to augment water intake with electrolyte solutions such as Gatorade. It is important to understand that caffeinated beverages, some common supplements, prescription medications, and alcohol use will affect your overall ability to stay hydrated.

If suffering from heat cramps, stop working, move to the shade or air-conditioned building if possible, and begin to increase drinking water and/or electrolyte beverages. Do not drink soda or energy drinks. Contact your supervisor immediately if you or another person becomes too ill to work. You may need to reduce your activities until you have replaced the fluids lost through perspiration.

2.3 Heat Exhaustion

Heat exhaustion is more serious than heat cramps and will occur when a person can no longer perspire enough to cool the body. The body's internal temperature regulating system is overworked, but has not completely shut down.

Signs and Symptoms

Heat exhaustion symptoms may include some or all of these signs and symptoms. A person may be heavily sweating, have intense thirst, dizziness, feel weak or exhausted. Heat exhaustion also causes nausea, headache, and the person's skin may be pale, cool and moist. Mild heat exhaustion does not change a person's mental alertness.

Prevention and First Aid

To prevent heat exhaustion drink adequate amounts of water before, during, and after working in the heat. Take extra rest and water breaks in a cooler environment such as the shade or in an air conditioned building until you become acclimated (accustomed) to the heat. Avoid drinking caffeinated beverages and limit alcohol use during time off. When working outdoors wear ventilated hats with wide brims (if possible) and long sleeved light colored clothing.

A person showing symptoms of heat exhaustion should be moved to a cool location such as a shaded area or air-conditioned building. Begin drinking cool water or an electrolyte drink such as Gatorade. If the person is dizzy, have them lie down with their feet slightly elevated. Remove hats and loosen the person's clothing, apply cool, wet cloths to the head, back of neck, and abdominal area if possible. Victims of heat exhaustion should avoid strenuous activity for at least a day, and they should continue to drink plenty of water to replace lost body fluids.

It is important to understand that heat exhaustion can quickly progress to heat stroke. Notify your supervisor immediately if you or another person shows signs of heat exhaustion. Dependent on the severity of the heat stroke, medical treatment may be required. Immediately call 911 if the person's condition worsens, they vomit repeatedly, or if they lose consciousness.

2.4 Heatstroke

Heatstroke is a life threatening illness and can be fatal if not properly treated. This condition occurs when the body has depleted its supply of fluids and can no longer cool itself. The person's core body temperature then can rise to levels that can damage major organs. A heat stroke victim may first suffer heat cramps and/or heat exhaustion before progressing into the heat stroke stage, but is not always the case.

Signs and Symptoms

A person with heat stroke may behave strangely, appear confused, agitated, or have hallucinations. They may also have difficulty breathing and their skin may be hot, red or flushed. Heat stroke symptoms include a distinct absence of sweating and any or all of the signs and symptoms of heat exhaustion such as dizziness, headache, nausea, or vomiting. Advanced symptoms are seizures and / or convulsions, loss of consciousness, and a body temperature of over 106 degrees F.

Prevention and First Aid

Heatstroke prevention includes acclimation to working in the heat and requires that an individual is properly hydrated before, during, and after working in the heat. Adequate rest is also important to prevent heat stroke. A person who has suffered heat exhaustion is more likely to fall victim to heatstroke.

It is critical to immediately begin to lower a heatstroke victim's body temperature. Make sure someone has called 911 and begin to cooling the person. Remove all excess clothing and hats, loosen belts and remove boots or heavy shoes. Using a hose, apply cool running water to their entire body if possible. Apply cold packs to the person's abdomen and groin area. Fanning the person will also help cool them. Heatstroke requires emergency medical attention; be sure to call 911 first and also notify your supervisor.

3.0

HEAT ILLNESS PRECAUTIONS - SUMMARY

Acclimatization is one of the most important factors in preventing heat illness; you must condition yourself to working in hot environments. By performing regular work for at least two hours per day in the heat, *most* people will become accustomed (acclimated) to the heat in four to fourteen days.

It is important to modify your pace of activity until you are acclimated; pace yourself and perform more strenuous tasks earlier in the day.

Take additional minimum 5-minute rest and cooling breaks to avoid overheating until you are acclimated. Take your breaks in the shade or indoors, rest and drink water before returning to work. Drink water throughout the day.

Each individual has their own level of acclimation and heat tolerance; it is important to remember that some supplements, over the counter, and prescription medications can interfere with the body's ability to retain water and tolerate heat.

Your overall health including your age, weight, and general physical condition may also affect your ability to acclimate and tolerate heat.

Drink plenty of liquids. Hydration is a continuous process. Don't wait until you are thirsty; if you do there is a possibility that you may already be dehydrated. Electrolyte drinks are good for replacing both water and minerals lost through sweating.

Avoid excessive use of alcohol on days off, and avoid caffeinated beverages like coffee, energy drinks, and sodas as these liquids can have an opposite effect and can contribute to the level of dehydration.

It is the employee's responsibility to talk to their supervisor if you have been off work and are returning during hot weather, been in a much cooler environment, or have had a change in work activities, locations, or conditions as this may increase the potential for heat illness.

Employees must notify their supervisor immediately if feeling unwell due to working in high heat environments or are showing signs and/or symptoms of any heat related illness.

<p>Warning! During high heat or a heat wave even previously acclimatized employees are at risk for heat illness because the body has not had enough time to adjust to sudden, abnormally high temperatures or other extreme conditions such as high humidity.</p>
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4.0 EMPLOYER PROVISIONS FOR PREVENTING HEAT ILLNESS

4.1 Acclimatization

All employees shall be closely observed by a supervisor or manager or designee during a heat wave. For the purpose of heat illness prevention, heat waves are days when the predicated high temperature is at least 80 degrees Fahrenheit and ten degrees higher than the average high temperature in the preceding five days.

To ensure employees become properly acclimated, employees who have been newly assigned to high heat work areas shall be closely observed by a supervisor or designee for the first 14 days of employment. Best practices include finding ways to lessen the intensity of work during a heat wave and during 2-week break-in periods of new employees.

Warning! During a heat wave even previously acclimated employees are at a risk for heat illness because the body has not had enough time to adjust to sudden, abnormally high temperatures or other extreme conditions such as high humidity.

4.2 Access to Shade

Shade will be provided to employees when the temperature exceeds 80 degrees F.

The CSU, Chico campus has numerous naturally shaded areas throughout the campus, as well as, air conditioned building within easy access of employees. Employees are reminded and encouraged to take water and rest breaks in the shade or inside nearby air-conditioned buildings as needed to protect themselves from overheating and to prevent heat illness from occurring.

Where shade is not available, workers will be provided with nearby portable shade canopies in which they may take breaks. Shade canopies will be of an adequate size to accommodate employees on recovery or rest periods as well as meal periods if workers choose to remain onsite during their meal period.

Shade will be provided within a reasonable amount of time upon employee request at temperatures below 80 degrees F.

4.3 Access to Water

Fresh, pure, and reasonably cool potable water will be made available to employees at no cost.

There are drinking fountains inside all CSU, Chico buildings, as well as, some exterior drinking fountains.

Employees who travel in vehicles throughout campus are encouraged to utilize portable water containers and may refill them from potable water sources in buildings.

When employees are in locations that do not have potable water available, supervisors or managers will ensure that fresh, pure, and reasonably cool clean water is readily available at all times and in quantities sufficient for the number of employees throughout the shift if water is not to be replenished throughout the day.

Note: Exterior hose bibs do not necessarily provide potable water and should not be used.

4.4 High Heat Procedures

These procedures apply to agricultural workers, construction workers, landscapers and other specific groups when outdoor temperatures equals or exceeds 95 degrees F. However, any employee who performs outdoor work may be reasonable anticipated to be at risk of heat illness in temperatures above 80 degrees F.

Managers and supervisors or their designee will monitor outdoor temperatures and conditions throughout the day so they may provide shade and water as needed. Employees shall be effectively observed for alertness and signs or symptoms of heat illness. Effective employee observation/monitoring shall be achieved by implementing *one or more* of the following methods:

- Supervisor or designee observation of no more than 20 employees,
- Mandatory buddy system ,
- Regular communication with lone worker such as by radio or cell phone,
- Other effective means of communication.

Managers and supervisors shall also designate one or more employees at each worksite as authorized to call for emergency services.

Note: Any CSU, Chico employee is allowed and encouraged to call for emergency services as needed.

In temperatures over 95 degrees employees will be provided with a reliable means of communication to reach supervisors in the event of an emergency.

New employees, including those performing new tasks, or who have changed positions will be regularly observed by a supervisor or designee for signs and symptoms of heat illness for up to 14 days to verify they have properly acclimated to the current or predicted weather conditions.

Pre-shift meetings shall be held to remind and encourage employees to drink plenty of water throughout the work shift, remind them of their right to take cool down rest when necessary and to review the high heat procedures. Prevention, recognition, and appropriate responses to heat illness signs and symptoms should be reviewed regularly.

4.5 Additional Requirements for Agricultural Workers

When temperatures equal 95 degrees or above, the agricultural work site employer shall ensure that employees take a minimum ten-minute net preventative cool down rest period *every two hours*. This may be provided concurrently with meal or rest periods. If work days exceed ten hours an additional preventative cool rest period would be required at the end of the tenth hour.

These breaks must be taken, not only offered, in addition to rest breaks as required by Industrial Welfare Order No.14.

Supervisors and managers shall respond to signs and symptoms of possible heat related illnesses by providing first aid measures as outlined in this Plan. If a supervisor or manager observes, or any employee reports, any signs or symptoms of heat illness, the supervisor or manager shall take immediate action commensurate with the severity of the illness.

Employees showing signs or symptoms of heat illness shall be monitored and not be left alone or sent home without first being offered first aid and/or being provided with emergency medical services.

All employees are encouraged to be familiar with the First Aid procedures in this plan; follow them until medical help arrives.

If severe heat illness signs or symptoms are observed or reported, immediately summon emergency services by using any emergency "blue light" call boxes located at exterior locations on campus, by calling 911 from any campus building phone or call (530) 898-5555 from a cell phone. Workers in remote locations should call 911 to receive the quickest response.

Be sure to provide clear directions to the location of the affected worker, and if needed, provide a person to direct emergency responders to the correct location. If workers are in remote locations, a map showing their location or detailed directions must be provided so they can be given to first responders.

Your department may have additional procedures to follow in addition to calling 911.