



California State
University **Chico**

Heat Illness Prevention Plan

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Environmental Health and Safety**
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Record of Revisions

Revision	By	Date	Description of Revisions
1	YS	5-04-2020	Completed review and updated. Added new sections: Heat Rash, Syncope, and Rhabdomyolysis.
2	HCL	10-18-2023	Consolidation and reduction of types of Heat Illness. Reduced types so IIPP is consistent with CSU Learn Heat Illness training and CSU Emergency Procedure training.
3	HCL	06-27-2024	Added Indoor Heat Illness Prevention.

Legend:

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Section 1.0 Introduction

The purpose of the Heat Illness Prevention Plan (Plan) is designed to meet requirements set-forth in California Code of Regulations, Title 8, Subchapter 7, Group 2, Sections 3395 and 3396, and serves as a supplement to California State University, Chico's (University) Injury and Illness Prevention Program (IIPP). This Plan is used in conjunction with the IIPP to provide information and establish procedures necessary to ensure 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.

Section 2.0 Heat Illness Overview

This Plan 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 first aid actions to take, including when to seek emergency medical treatment.

The Chico area experiences frequent high temperatures June through September, with the occasional occurrence of higher temperatures as early as May. Some University employees can anticipate exposure to high heat conditions that can result in heat-related illness. Any employee whose job duties require work 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.

Conversely employees who work indoors can also be susceptible to heat illness. This Plan provides information about how and when Indoor Heat Illness protocols should be in place. Indoor work environments can include but are not limited to warehouses, shops, barns, outbuildings, laboratories, and vehicles.

Heat-related illnesses can occur when physical activities are performed in elevated environmental temperature conditions. If the body overheats it 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 (PPE) and head coverings;
- personal risk factors such as the individual's level of acclimatization (ability to become accustomed) to heat, their age, health, overall physical condition, and some supplements and prescription medications; and
- failure to stay properly hydrated by drinking adequate amounts of water prior to, during, and after working in the heat is a significant contributing factor.

Heat-related illnesses are preventable by becoming aware of contributing factors and taking appropriate steps before, during, and after working in either indoor or outdoor high temperature environments. Acclimatization is one of the most significant forms of prevention, along with proper hydration. The Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) recommend the "Rule of 20 percent" to build employees' tolerance to heat ([osha.gov](https://www.osha.gov)):

- 20% First Day: New workers should work only 20 percent of the normal duration on their first day.
- 20% Each Additional Day: Increase work duration by 20 percent on subsequent days until the worker is performing a normal schedule.

2.1 Types of Heat Illness

Many workers do not recognize the onset of heat-related illness and continue to work; therefore, it is critical that all employees know the signs and symptoms of all forms of heat illness. Heatstroke should be treated as a serious life-threatening medical emergency and must be responded to quickly and properly.

Illness	Constitutes Emergency	Signs & Symptoms	Prevention	First Aid
<p>Heat Cramps</p> <ul style="list-style-type: none"> - most common type of heat-related illness - caused by heavy perspiration - most at risk during first few days of hot weather - can occur despite acclimatization 	<p>No</p>	<ul style="list-style-type: none"> - painful brief muscle cramps of the calves, thighs, stomach muscles, or shoulders during work or exercise in a hot environment - painful cramps hours later after working in a hot environment 	<p>Acclimatization</p> <ul style="list-style-type: none"> - peaks in most people within 4 to 14 days of regular work for at least 2 hours per day in the heat <p>PPE</p> <ul style="list-style-type: none"> - ventilated hats with wide brims - lightweight, light-colored, breathable fabrics - long sleeves and long pants - during break periods loosen clothing to increase air flow. 	<ul style="list-style-type: none"> - stop working and move to a shaded area or air-conditioned building - increase drinking water and/or electrolyte solutions - contact your supervisor immediately - stop or reduce work activities until you have replaced fluids lost through perspiration - rest and take extra steps to re-hydrate
<p>Heat Exhaustion</p> <ul style="list-style-type: none"> - occurs when a person can no longer perspire enough to cool the body - body's internal temperature regulating system is overworked but has not completely shut down 	<p>Yes</p> <ul style="list-style-type: none"> • Notify your supervisor immediately if you or another person show signs of heat exhaustion. • It is important to understand that heat exhaustion can quickly progress to heatstroke. 	<ul style="list-style-type: none"> - heavy sweating, intense thirst, and dizziness - feeling weak or exhausted, even after resting - nausea and/or headache - pale, cool and moist (clammy) skin - some or all the signs and symptoms may be present - mild heat exhaustion does not change a person's mental alertness 	<p>Tasks</p> <ul style="list-style-type: none"> - alternate during the day to allow work in a cooler, less humid work environment - decrease the amount of physical labor - alternate with less strenuous tasks - take additional 5 to 10-minute rest and water breaks in a cooler environment such as the shade or in an air-conditioned building <p>Hydration</p>	<ul style="list-style-type: none"> - move to a cool location such as a shaded area or air-conditioned building - provide cool water or an electrolyte solution - 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 - avoid strenuous activity for at least a day and continue to drink plenty of water to replace lost body fluids
<p>Heat Stroke</p> <ul style="list-style-type: none"> - life-threatening - can be fatal - occurs when the body has depleted its supply of fluids and can no longer cool itself - core body temperature rises to levels that can damage major organs - may first suffer heat cramps and/or heat exhaustion 	<ul style="list-style-type: none"> • A person who has suffered heat exhaustion is more likely to fall victim to heatstroke. • Depending on the severity, medical treatment may be required. • Immediately call 911 if the person's condition worsens, they vomit repeatedly, or they lose consciousness. 	<ul style="list-style-type: none"> - strange behavior, confusion, agitation, and/or hallucinations - difficulty breathing - dry, hot, red, or flushed skin - the distinct absence of sweating and any or all of the signs and symptoms of heat exhaustion including dizziness, headache, nausea, or vomiting - seizures and/or convulsions or loss of consciousness - body temperature of 104 to over 106 °F 	<ul style="list-style-type: none"> - 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 - augment water intake with electrolyte drinks - avoid alcohol and caffeinated beverages, including energy drinks - know which supplements and prescription medications may affect your hydration 	<ul style="list-style-type: none"> - call 911 and notify your supervisor or manager - loosen or remove all excess clothing including hats, belts, socks and shoes - use a hose or pour cool water over the person's body - apply cold packs to the person's abdomen and groin area - fan the person, use any reasonable means to cool the body - do not try to provide anything to drink if the person is not fully alert, you may cause choking - do not provide any medications, salt tablets, etc.

Section 3.0 Heat Illness Prevention

Acclimatization is one of the most important factors in preventing heat illness; you must gradually condition yourself to working in hot environments. By performing regular work for at least 2 hours per day in the heat, most people will become accustomed (acclimated) to the heat in 4 to 14 days. It is important to modify your pace of activity until you are fully acclimated; pace yourself and perform more strenuous tasks earlier in the day.

Everyone has their own level of acclimation and heat tolerance, as well as may have increased personal risk factors. It is important to know that some supplements and some prescription and over-the-counter 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. If needed, discuss your personal risk factors and acclimatization with your physician.

Once temperatures reach or exceed 80 °Fahrenheit (F), take additional 5-minute-minimum 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 plenty of water or electrolyte drinks throughout the day. Hydration is a continuous process, drinking water before and after working is just as important as drinking water while working. Don't wait until you are thirsty; if you do there is a possibility you may already be dehydrated. Supplementing water occasionally with electrolyte drinks will help replace both water and minerals lost through sweating. Avoid excessive use of alcohol during time off, and limit or avoid caffeinated beverages such as coffee, energy drinks, and soda as these liquids can have an opposite effect and can also contribute to the level of dehydration.

It is your responsibility to talk to your supervisor if you have been off work and are returning during hot weather, been in a much cooler environment, or had a change in work activities, locations, or health conditions, as this may increase the potential for heat-related illness. It does not take long to lose acclimatization. You will need to gradually acclimate and consider your overall physical condition, the work you will perform, and current and predicted outdoor temperatures.

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.*

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

Section 4.0 Employer Provisions for Preventing Outdoor Heat Illness

4.1 Acclimatization

All employees shall be closely observed by a supervisor 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 °F and 10 °F higher than the average high temperature in the preceding five days.

To ensure employees become properly acclimated, all 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 for new employees.

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.*

4.2 Access to Shade and Rest

Shade and preventive rest breaks will be provided to employees when the temperature exceeds 80 °F. The University has numerous naturally shaded areas throughout the campus, as well as air-conditioned buildings within easy access for employees. Employees will be reminded and encouraged to drink water and be allowed to take preventive cool down rest breaks (minimum of five minutes) in the shade or inside nearby air-conditioned buildings as needed to protect themselves from overheating and to prevent heat illness from occurring.

Shade will be provided within a reasonable amount of time upon employee request at temperatures below 80 °F. When natural shade is not available, workers will be provided with nearby portable shade canopies to take breaks under. Shade canopies will be of adequate size to accommodate employees during recovery or rest periods, as well as meal periods if workers choose to remain onsite during their meal period. Shade canopies will be open to the air or be provided with ventilation.

Employees requesting preventive rest breaks shall be:

- monitored and asked if they are experiencing symptoms of heat illness;
- encouraged to remain in the shade; and
- allowed to refrain from working until any signs or symptoms of heat illness have abated, but in no event, less than 5 minutes, in addition to the time needed to access the shade.

If an employee exhibits signs or reports symptoms of heat illness while taking a preventive cool down rest, the employer shall provide appropriate first aid or call 911.

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 University buildings, as well as some exterior drinking fountains. When employees are in locations that do not have potable water available, supervisors or designees 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 are not to be used.*

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

4.4 High Heat Procedures

These procedures apply to agricultural workers, construction workers, landscapers and other specific groups when outdoor temperatures equal or exceed 95 °F. However, any employee who

performs outdoor work may be reasonably anticipated to be at risk of heat illness in temperatures above 80 °F.

Supervisors or their designee will monitor outdoor temperatures and conditions, such as humidity, throughout the day so they may provide shade and water as needed. Employees shall be provided with a reliable means of communication to reach their supervisor or designee or to summon medical aid. Supervisors or their designee shall also effectively observe workers throughout the day for alertness and any signs or symptoms of heat illness. Employee observation/monitoring shall be achieved by implementing one or more of the following methods:

- Supervisor or designee shall have direct observation of no more than 20 employees.
- Implement a mandatory buddy system.
- Maintain regular communication with lone workers by radio or cell phone.
- Provide other effective means of communication.

Supervisors or designees shall also appoint one or more employees at each worksite to call for emergency services.

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

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 breaks when necessary, and to review the high heat and emergency procedures. Prevention, recognition, and appropriate responses to heat illness signs and symptoms should be reviewed regularly.

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.

4.5 Additional Requirements for Agricultural Workers

When temperatures reach 95° or above, the agricultural work site employer shall ensure that employees take a minimum 10-minute preventive cool down rest period *every two hours*. This additional 10-minute preventive cool down rest period may be provided concurrently with meal or normal rest periods. If the workday exceeds eight hours, an additional preventive cool down rest period would be required at the end of the eighth hour of work; and if the workday extends beyond 10 hours, then another preventative cool down rest period will be required at the conclusion of the 10th hour and so on. These breaks must be taken, not only offered, in addition to rest breaks as required by the Industrial Welfare Commission of the State of California's Industrial Welfare Order No.14.

Section 5.0 Employer Provisions for Preventing Indoor Heat Illness__

5.1 Standards for Implementing Indoor Heat Illness Prevention Protocols

On June 20, 2024, the State of California, Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Standards Board approved California Code of Regulations (CCR), Title 8, section 3396, "Heat Illness Prevention in Indoor Places of Employment" (www.dir.ca.gov/dosh/heat-illness/indoor.html). For indoor workplaces where temperatures are equal to or greater than 82 °F, employers must take steps to protect workers

from heat illness. Requirements include, but are not limited to providing water, rest, cool-down areas, methods for cooling down the work area when certain conditions are present, and training.

5.2 Acclimatization

Employees shall be closely observed by a supervisor or designee during a 14-day acclimatization period, when working indoors, and where temperatures meet or exceed 82 °F.

5.3 Provide Clean Drinking Water

Employers must provide access to potable water that is fresh, suitably cool, and free of charge. The water must be located as close as possible to the work areas and to the cool-down areas.

5.4 Access To Cool-Down Areas

Access to a minimum of one cool-down area must be provided. The cool-down area must be:

- kept at a temperature below 82 °F;
- shielded from direct sunlight and other high-radiant heat sources;
- large enough to accommodate the number of workers on rest breaks so they can sit comfortably without touching each other; and
- as close as possible to the work areas.

5.5 Cool-Down Rest Periods

Workers should be encouraged to take preventative cool-down rest periods and must be allowed to take them as needed. Workers who experience symptoms of heat-related illness should notify their supervisor or coworker and shall be monitored until symptoms are abated.

5.6 Assessment, Control Measures, and Monitoring Weather

Temperatures and the heat index should be measured, and the greater result should be recorded when the temperature or heat index reaches 87 °F or when the temperature reaches 82 °F for workers in clothing (or PPE) that restricts heat removal or high-radiant-heat areas.

Feasible engineering controls must be implemented first. Examples include, but are not limited to, using air conditioners, evaporative coolers, fans, increasing the general ventilation, and utilizing local exhaust ventilation at high heat or high moisture production points.

Supervisors overseeing workers working in indoor workspaces that are affected by the outdoor temperatures will receive training on how to check weather reports and how to respond to hot weather advisories.

Section 6.0 Emergency Procedures

Supervisors or their designees 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 designee observes, or any employee reports any signs or symptoms of heat illness, the supervisor or designee 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 must be familiar with the first aid procedures in this Plan and be encouraged to follow them until medical help arrives.

If severe heat illness signs or symptoms are observed or reported, emergency services can be immediately summoned by:

- Using emergency “blue light” call boxes located at exterior locations on campus.
- Calling 911 from any campus building phone or calling (530) 898-5555 from a cell phone.
- Calling 911 when working in locations such as the farm or other more remote off-campus locations.

If 911 is called, 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 applicable, detailed directions including maps must be available to first responders to avoid any delay in treatment.

Many employees have also been provided with two-way radios they can use to reach their supervisor or department office. Departments may provide additional procedures for employees to follow in addition to calling 911. If this is the case, employees must be provided with documented training to ensure they understand the procedures.

Appendices

Appendix A: Comparison of Indoor and Outdoor Heat Illness Prevention Standards

Requirement	Outdoor Heat (T8CCR 3395)	Indoor Heat (T8CCR 3396)
Scope and Application	Applies to outdoor workplaces.	Applies to indoor workplaces when the indoor temperature is greater than 82 °F.
Provide Clean Drinking Water	<ul style="list-style-type: none"> • Provide access to potable water that is fresh, suitably cool, and free of charge. • Located as close as possible to work areas. 	<ul style="list-style-type: none"> • Provide access to potable water that is fresh, suitably cool, and free of charge. • Located as close as possible to work areas and cool-down areas.
Access to Shade and Cool-Down Areas	<ul style="list-style-type: none"> • Shade must be present when temperatures are greater than 80 °F. • When temperatures are less than 80 °F, shade must be available upon request. • Shade and cool-down areas must be: <ul style="list-style-type: none"> - blocked from direct sunlight; - large enough to accommodate the number of workers on rest breaks so they can sit comfortably without touching each other; and - close as possible to the work areas. 	<ul style="list-style-type: none"> • Provide access to at least one cool-down area that must be kept at a temperature below 82 °F. • Area must be shielded from other high-radiant heat sources.
Cool-Down Rest Periods	<ul style="list-style-type: none"> • Encourage workers to take preventative cool-down rest periods. • Allow workers who ask for a cool-down rest period to take one. • Monitor workers taking such rest periods for symptoms of heat-related illness. 	
High-Heat Procedures	<ul style="list-style-type: none"> • Have and implement procedures to deal with heat when the temperature equals or exceeds 95 °F. • Procedures must include: <ul style="list-style-type: none"> - observing and communicating effectively with workers and - reminding workers to drink water and take cool-down rest breaks. 	<i>Not applicable to Indoor Workplaces.</i>
Assessment and Control Measures	<i>Not applicable to Outdoor Workplaces.</i>	<ul style="list-style-type: none"> • Measure the temperature and heat index and record whichever is greater whenever the temperature or heat index reaches 87 °F (or temperature reaches 82 °F for workers in clothing that restricts heat removal or high-radiant-heat areas). • Implement control measures to keep workers safe. Feasible engineering controls must be implemented first.

Requirement	Outdoor Heat	Indoor Heat
Monitoring the Weather	<ul style="list-style-type: none"> • Monitor outdoor temperature and ensure that once the temperature exceeds 80 °F, shade structures will be opened and made available to the workers. • When it is at least 95 °F, implement high-heat procedures. • Train supervisors on how to check weather reports and how to respond to weather advisories. 	<ul style="list-style-type: none"> • When affected by outdoor temperatures: <ul style="list-style-type: none"> – train supervisors on how to check weather reports and – how to respond to hot weather advisories.
Emergency Response Procedures	Provide first aid or emergency response to any workers showing heat illness signs or symptoms, including contacting emergency medical services.	
Acclimatization	Closely observe new workers and newly assigned workers working in hot areas during a 14-day acclimatization period, as well as all workers during a heat wave.	
Training	Employers must provide training to both workers and supervisors.	
Heat Illness Prevention Plan	Establish, implement, and maintain an effective written Outdoor Heat Illness Prevention Plan that includes procedures for providing drinking water, shade, preventative rest periods, close observation during acclimatization, high-heat procedures, training, and prompt emergency response.	Establish, implement, and maintain an effective written Indoor Heat Illness Prevention Plan that includes procedures for providing drinking water, cool-down areas, preventative rest periods, close observation during acclimatization, assessment and measurement of heat, training, prompt emergency response, and feasible control measures.