

California State University, Bakersfield
Heat Illness Prevention Program



CALIFORNIA STATE UNIVERSITY
BAKERSFIELD
Safety and Risk Management

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1.0 Purpose

Employees working in outdoor places of employment or in other areas at times when the environmental risk factors for heat illness are present are at risk for developing heat illnesses if not appropriately protected. The objective of this program is employee awareness regarding heat illness symptoms, ways to prevent illness, and what to do if the symptoms occur.

It is the policy of California State University, Bakersfield that any employee who works outdoors in the heat and all individuals who supervise them must comply with the program's procedures the Injury and Illness Prevention Program.

2.0 Authority

Title 8 of the California Code of Regulations, Section 3395.

3.0 Audience

This program applies to employees and supervisors working in outdoor places when environmental risk factors for heat illness are present.

4.0 Definitions

Acclimatization: The temporary adaptation of the body to work in the heat that occurs over gradual exposure. Acclimatization peaks for most people within four to fourteen days of regular work and for about two hours per day in the heat.

Environmental risk factors for heat illness: Working conditions that create the possibility of heat illness occurring, include (but not limited to) air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing, and personnel protective equipment worn by employees.

Heat illness: A serious medical condition resulting from the body's inability to cope with a heat load; this includes heat cramps, heat exhaustion, heat syncope, and heat stroke. (See Section 12.0 for more information)

Personal risk factors for heat illness: Factors such as an individual's age, degree of acclimatization, health, consumption of water, alcohol, caffeine, use of prescription medications that affect the body's water retention or other physiological responses to heat.

Preventative recovery period: A period of recovery to prevent heat illness.

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Shade: The blockage of direct sunlight; canopies, umbrellas, and other temporary structures/devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in a shaded area is present, which is meant to allow the body to cool. For example, a car sitting in the sun does not provide adequate shade to a person inside it unless it is running with air conditioning.

5.0 Accountability

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- Prepare and maintain a Heat Illness Prevention Program which complies with the requirements of Cal/OSHA Title 8, 3395.
- Provide training to all potentially impacted employees and their supervisors on the risks and prevention of heat illness, including how to recognize and respond to symptoms when they appear and when, where, and how water and shade is provided. Training should be provided annually as a refresher prior to the start of the summer season.

Directors, Managers, and Supervisors

- Identify all employees who are required to work outdoors where potential heat illness could occur and identify their supervisor(s).
- Assure that adequate water and shade are available at a job site when environmental risk factors for heat illness prevention are present.
- Ensure that all affected employees have received proper training on heat illness prevention.
- Ensure that the requirements in this program are followed.
- Contact University Police to request emergency medical services in the event medical assistance is required. University Police will direct emergency medical services to the work site.

Employees

- Awareness and compliance with the provisions of the Heat Illness Prevention Program while performing assigned duties.
- Employees are ultimately responsible for drinking adequate amounts of hydrating fluids when the environmental risk factors for heat illness are present.
- Inform their supervisor if shade and/or water is inadequate.
- Report heat related illness symptoms to the supervisor.
- Look for the signs and symptoms of heat stress in co-workers.

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6.0 Access to water

Whenever environmental risk factors for heat illness exist, supervisors are responsible to ensure that clean, fresh, and suitably cool potable water is readily available to employees free of charge.

Supervisors shall encourage employees to drink frequently.

Employees must understand that that thirst is not an effective indicator of a person's need for water and it is recommended individuals drink one quart of water, or four 8-ounce cups, per hour when working in hot environments.

Departments shall take one or more of the following steps to ensure employees have access to drinking water:

1. Provide access to drinking fountains
2. Supply water cooler/dispenser and single service cups
3. Supply sealed one time use water containers

Drinking water and water dispensers shall meet the following requirements:

- All sources of drinking water shall be maintained in a clean and sanitary condition
- Drinking water must always be kept cool. When temperatures exceed 90° F it is recommended that ice be provided to keep the water cool.
- Potable drinking water dispensers used to provide water to more than one person shall be equipped with a spigot or faucet
- Any container used to store or dispense drinking water shall be clearly marked as to the nature of its contents and shall not be used for any other purpose
- Dipping or pouring drinking water from containers, such as barrels, pails, or tanks, is prohibited regardless of whether or not the containers are fitted with covers
- The use of shared cups, glasses or other vessels for drinking purposes is prohibited
- Non-potable water shall not be used for drinking
- Outlets for non-potable water shall be posted in a manner understandable to all employees that the water is unsafe for drinking

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7.0 Access to Shade

Employees must be provided with access to an area with shade that is open-air or provided with ventilation/cooling for a period of no less than five minutes. Shade must be large enough to accommodate all employees on recovery or rest periods and allow employees to sit in shade without touching each other. The nearest shade must be as close as practical. Access to shade must be allowed anytime the temperature is over 80 degrees Fahrenheit. Other methods of cooling other than shade can be used if it can be demonstrated that these methods are at least as effective as shade.

Employees shall be allowed and encouraged to take a preventative cool-down rest in the shade when they feel the need to do so to protect themselves from overheating. Such access to shade shall be permitted at all times. An individual employee who takes a preventative cool-down rest shall:

- Be monitored and asked if he or she is experiencing symptoms of heat illness;
- Be encouraged to remain in the shade; and
- Not be ordered back to work 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.

The purpose of the preventive recovery period is to reduce heat stress on the employee. The preventive recovery period is not a substitute for medical treatment. If an employee exhibits signs or reports symptoms of heat illness while taking a preventative cool-down rest or during a preventative cool-down rest period, the supervisor shall provide appropriate first aid or emergency response.

8.0 Acclimatization

Supervisors are required to acclimatize employees and allow time to adapt when temperatures rise suddenly and employee risks for heat illness increase. Acclimatization is also required for new employees, employees working at temperatures to which they have not been exposed for several weeks or longer, or employees assigned to new jobs in hot environments. Generally, about four to fourteen days of daily heat exposure is needed for acclimatization. Heat acclimatization requires a minimum daily heat exposure of about two hours of work. Gradually increase the length of work each day until an appropriate schedule adapted to the required activity level for the work environment is achieved. This will allow the employee to acclimate to conditions of heat while reducing the risk of heat illness. It should be noted that new employees are among those most at risk of suffering the consequences of inadequate acclimatization. Supervisors with new employees should be extra-vigilant in monitoring those individuals during the 14-day acclimatization period and respond immediately to signs and symptoms of possible heat illness.

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9.0 High Heat Procedures

When the temperature equals or exceeds 95° F, the following procedures shall be followed:

- Employees shall be observed for signs and symptoms of heat related illness by using the buddy system or regular communication with employees by radio, telephone or periodic drive-by.
- Employees shall take a 10-minute cool down rest period every two hours.
- At least one employee shall have access to a radio or cell phone and instructed to contact University Police in the event of serious heat related symptoms.
- Employees shall be reminded to drink plenty of water throughout the shift and their right to take a cool-down rest period.

10.0 Emergency Response Procedures

If an employee has any symptoms of heat illness, first-aid procedures should be initiated without delay. Common early signs and symptoms of heat illness include headache, muscle cramps, and unusual fatigue. However, progression to more serious illness can be rapid, and can include loss of consciousness, seizures, mental confusion, unusual behavior, nausea or vomiting, hot dry skin, or unusually profuse sweating. Any employee exhibiting any of the above-mentioned symptoms requires immediate attention. Employees exhibiting symptoms of severe heat illness must be attended to University Police. No employee with symptoms of possible serious heat illness should be left unattended or sent home without medical assessment and authorization.

11.0 Training

Training must be provided for employees and their respective supervisors on job tasks where environmental risk factors for heat illness are present. Refresher training must be provided annually.

Employees

All employees working on job tasks where environmental risk factors for heat illness are present shall receive instruction before being assigned to work tasks. Training topics shall include the following:

- Environmental and personal risk factors for heat illness.
- Procedures for identifying, evaluating, and controlling exposures to environmental and personal risk factors for heat illness.
- Employees who experience excessive sweating frequently should consume small quantities of water (up to 4 cups per hour when working in extreme conditions of heat).
- The importance of acclimatization.
- Different types, signs, and symptoms of heat illness.

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- The Importance of immediately reporting symptoms or signs of heat illness in themselves or co-workers to supervisor(s).
- Procedures for responding to symptoms of possible heat illness, including how emergency medical services will be contacted and provided, should they become necessary.
- Campus procedures for contacting emergency medical services.

Supervisors

Supervisors or their designees shall receive training on the following topics prior to being assigned to supervise outdoor employees:

- Information as detailed above in employee training requirements.
- Procedures the supervisor must follow to implement the provisions of this program.
- Procedures the supervisor must follow when employees exhibit symptoms consistent with possible heat illness, including emergency response.

Training records shall be maintained by SRM for a minimum of 3 years.

12.0 Heat Stress Facts

High temperatures and humidity affect the body's ability to cool itself, and heat illness becomes a special concern during hot weather. There are three major forms of heat illnesses: heat cramps, heat exhaustion, and heat stroke, with the latter being a life-threatening condition.

Heat Cramps

Muscle spasms which usually affect the arms, legs, or stomach. They frequently do not occur until sometime later after work hours, at night, or when relaxing. Heat cramps are caused by heavy sweating, especially when water is replaced, but not salt or potassium. Although heat cramps can be quite painful, they do not usually result in permanent damage. To prevent them, drink electrolyte solutions (such as Gatorade) during the day and eat more fruits like bananas.

Heat Exhaustion

More serious than heat cramps; occurs when the body's internal air-conditioning system is overworked but has not completely shut down. In heat exhaustion, the surface blood vessels and capillaries which originally enlarged to cool the blood collapse from loss of body fluids and necessary minerals. This happens when the body lacks fluids to replace what is sweat away.

Symptoms of heat exhaustion include headache, heavy sweating, intense thirst, dizziness, fatigue, loss of coordination, nausea, impaired judgment, loss of appetite, hyperventilation, tingling in hands or feet, anxiety, cool moist skin, weak and rapid pulse (120- 200 BPM), and low to normal blood pressure.

Somebody suffering these symptoms should be moved to a cool location such as a shaded area or air-conditioned building. Lie them down with feet slightly elevated. Loosen their clothing and apply cool, wet clothes, or fan them. Have them drink water or electrolyte drinks. Try to cool them down and have them

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checked by medical personnel. Victims of heat exhaustion should avoid strenuous activity for at least a day and should continue to drink water to replace lost body fluids.

Heat Stroke

A life-threatening illness with a high death rate; occurs when the body has depleted its supply of water and salt and body temperature rises to deadly levels. A heat stroke victim may first suffer heat cramps and/or the heat exhaustion heat stroke, but not always. Heat stroke is sometimes mistaken for heart attack; it is very important to be able to recognize the signs and symptoms and to check for them anytime an employee collapses while working in a hot environment.

The early symptoms of heat stroke include a high body temperature (103* F), a distinct absence of sweating, hot red/flushed dry skin, rapid pulse, difficulty breathing, constricted pupils, any and all the signs or symptoms of heat exhaustion such as dizziness, headache, nausea, vomiting, confusion, bizarre behavior, and high blood pressure. Advanced symptoms may include seizures/convulsions, collapse, loss of consciousness, and a body temperature of over 108 °F.

It is vital to lower a heat stroke victim's body temperature, seconds count. Pour water on them. Apply cold packs. Call university Police and get an ambulance on the way as soon as possible.

13.0 Precautions to prevent Heat-Related Illnesses

- Prepare to be conditioned for working in hot environments; start slowly, build up to more physical work. Allow body to adjust over several days.
- Drink lots of liquids. Electrolyte drinks are good for replacing both water and minerals lost through sweating. Never drink alcohol and avoid caffeinated beverages like coffee and soft drinks.
- Take frequent breaks, especially if feeling headaches overheating. Cool off for several minutes before going back to work.
- Wear lightweight, light colored clothing when working in the sun.
- Take advantage of fans and air-conditioners.

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