

Heat Illness Prevention Program

California State University Fresno
Office of Environmental Health and Safety, and
Risk Management

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I. Policy

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 they do not protect themselves appropriately. The objective of this program is employee awareness regarding heat illness symptoms, ways to prevent illness, and what to do if symptoms occur.

It is the policy of California State University, Fresno that any employee who works outdoors in the heat and all individuals who supervise these employees must comply with the procedures in this program and in the Injury and Illness Prevention Program.

II. Authority

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

III. Scope

This program applies to employees and supervisors working in outdoor places of employment during those times when the environmental risk factors for heat illness are present.

IV. Definitions

Acclimatization – The temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for about two hours per day in the heat.

Environmental Risk Factors For Heat Illness – The working conditions that create the possibility that heat illness could occur, including 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 particular heat load, and includes heat cramps, heat exhaustion, heat syncope, and heat stroke. See the fact sheet for specific information on the forms of heat illness.

Personal Risk Factors For Heat Illness – Factors such as an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body's water retention or other physiological responses to heat.

Preventative Recovery Period – A period of time to recover from the heat in order to prevent heat illness.

Shade – The blockage of direct sunlight. Canopies, umbrellas, and other temporary structures or 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 the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

V. Accountability

Environmental Health and Instructional Safety

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

Directors, Managers, and Supervisors

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

Affected Employees

- A. Comply with the provisions of the Heat Illness Prevention Program, as described in this document and in the training sessions they attend.
- B. Ensure they have drinking water available at all times when the environmental risk factors for heat illness are present.
- C. Ensure they have access to a shaded area to prevent or recover from heat related symptoms.
- D. Report heat related illness symptoms to the supervisor or directly to the Service Center.
- E. Look for the signs and symptoms of heat stress on your co-workers.

VI. Program

Access to Water

Employees must have access to potable drinking water and encouraged to frequently consume small amounts of water throughout the day – up to 4 cups per hour depending heat conditions. If plumbed potable water is not readily accessible, provide portable water containers or bottled water.

Shade

Employees suffering from heat related illnesses or in need of a recovery period from the heat must be provided with 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. Access to shade must be permitted at all times. 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.

Training

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

A. 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:

1. Environmental and personal risk factors for heat illness.
2. Procedures for identifying, evaluating, and controlling exposures to the environmental and personal risk factors for heat illness.
3. Employees who experience excessive sweating require frequent consumption of small quantities of water, up to 4 cups per hour when working in extreme conditions of heat.
4. Importance of acclimatization.
5. Different types, signs, and symptoms of heat illness.
6. Importance of immediately reporting symptoms or signs of heat illness in themselves or in coworkers to their supervisor.
7. Procedures for responding to symptoms of possible heat illness, including how emergency medical services will be contacted and provided, should they become necessary.
8. Campus procedures for contacting emergency medical services.

B. Supervisors and Affected Employees – Supervisors or their designees shall receive training on the following topics prior to being assigned to supervise outdoor employees:

1. Information as detailed above in employee training requirements.
2. Procedures the supervisor must follow to implement the provisions of this program.
3. Procedures the supervisor must follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response.

VI. RECORDS

All training records prepared in association with the Heat Illness Prevention Program will be maintained by Environmental Health and Instructional Safety or the department.

HEAT STRESS FACT SHEET

High temperatures and humidity stress 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 heat stroke being a life threatening condition.

Heat Cramps

Heat cramps are muscle spasms which usually affect the arms, legs, or stomach. Frequently they don't occur until sometime later after work, at night, or when relaxing. Heat cramps are caused by heavy sweating, especially when water is replaced by drinking, but not salt or potassium. Although heat cramps can be quite painful, they usually don't result in permanent damage. To prevent them, drink electrolyte solutions such as Gatorade during the day and try eating more fruits like bananas.

Heat Exhaustion

Heat exhaustion is more serious than heat cramps. It occurs when the body's internal air conditioning system is overworked, but hasn't 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 you don't drink enough fluids to replace what you're sweating away.

The 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), 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. Have them lie down with their feet slightly elevated. Loosen their clothing, apply cool, wet cloths or fan them. Have them drink water or electrolyte drinks. Try to cool them down, and have them checked by medical personnel. Victims of heat exhaustion should avoid strenuous activity for at least a day, and they should continue to drink water to replace lost body fluids.

Heat Stroke

Heat stroke is a life threatening illness with a high death rate. It occurs when the body has depleted its supply of water and salt, and the victim's body temperature rises to deadly levels. A heat stroke victim may first suffer heat cramps and/or the heat exhaustion before progressing into the heat stroke stage, but this is not always the case. It should be noted that, on the job, heat stroke is sometimes mistaken for heart attack. It is therefore very important to be able to recognize the signs and symptoms of heat stroke - 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 degrees F); a distinct absence of sweating (usually); hot red or flushed dry skin; rapid pulse; difficulty breathing; constricted pupils; any/all the signs or symptoms of heat exhaustion such as dizziness, headache, nausea, vomiting, or confusion, but more severe; bizarre behavior; and high blood pressure. Advance symptoms may be seizure or convulsions, collapse, loss of consciousness, and a body temperature of over 108 degrees F.

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

Take these precautions to prevent heat-related illnesses:

- Condition yourself for working in hot environments. Start slowly then build up to more physical work. Allow your body to adjust over a few days.
- Drink lots of liquids. Don't wait until you're thirsty! By then, there's a good chance that you're already on your way to being dehydrated. 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 you notice you're getting a headache or you start feeling overheated. Cool off for a few minutes before going back to work.
- Wear lightweight, light colored clothing when working out in the sun.
- Take advantage of fans and air-conditioners.
- With a little caution and a lot of common sense, you can avoid heat related illnesses.