

Cal Poly

Code of Safe Practice

Heat Illness Prevention

These following general rules shall be followed and these precautions shall be taken when employees work outdoors during high heat conditions.

Heat Illness Prevention Procedures

Recognition of Heat Hazard:

Heat illness results from a combination of factors including environmental temperature and humidity, direct radiant heat from the sun or other sources, wind speed, and workload. There is no cut-off below which work in heat is not a risk. With heavy work at high relative humidity (above 80%) or if workers are wearing protective clothing, even work at 70 degrees F can present a risk. In the relative humidity levels often found on campus, some actions to reduce heat illness risk should be taken when temperatures approach 80 degrees F. At temperatures above 90 degrees F, especially with heavy work, heat risk reduction is a major concern. The American Red Cross defines a heat wave as more than 48 hours of high heat (90 degrees F or higher) and high humidity (80 percent or higher).

General Rules:

Water: Employees who are working in the heat need to drink 3-4 glasses (1 quart) of water per hour, including at the beginning of the shift. Thirst is an unreliable indicator of dehydration. Drinking fountains are located throughout campus buildings. Employees are encouraged to consume adequate water; soda and coffee do not provide adequate fluid replacement.

Shade: The direct heat of the sun can add as much as 15 degrees to the heat index. If possible, work should be performed in the shade. Employees should seek out a shaded area to take rest breaks. Wide brimmed hats can also decrease the impact of direct sun.

Acclimatization: The human body is able to adjust to working in heat. When high heat conditions occur, the first 2 or 3 days of work in the heat should be limited to 4 hours.

Rest Breaks: Rest breaks help reduce internal heat load and provide time for cooling. Heat illness occurs due to a combination of environmental and internal heat that cannot be adequately dissipated. Breaks should be taken in cooler, shaded areas and break times should be used to drink water.

Heat Illness Symptoms: Heat related illness usually comes in stages:

- **Heat Cramps:** The signals of this first stage are painful cramps and spasms in abdominal or leg muscles. This is caused by loss of water and salt through heavy sweating. If you experience heat cramps, you should stop activity and rest. Drink small amounts of water and gently stretch the cramped muscle. Repeat these steps if necessary. If there are no other signs of heat-related illness, you may resume activity after the cramps stop.
- **Heat Exhaustion:** Heat exhaustion typically occurs when people exercise heavily or work in a warm, humid place where body fluids are lost through heavy sweating. Fluid loss causes blood flow to decrease in the vital organs, resulting in a form of shock. With heat exhaustion, sweat does not evaporate as it should because of high humidity or too many layers of clothing. As a result, the body is not cooled properly. Signals of this stage are:
 - Cool, moist, pale, flushed or red skin
 - Heavy sweating
 - Headache
 - Nausea or vomiting

- Dizziness
- Exhaustion
- Body temperature near normal

If you are experiencing the symptoms of heat exhaustion, you should call for assistance. Find a cool place to rest in a comfortable position. Drink a half glass of cool water every 15 minutes. Do not drink too quickly or consume liquids with caffeine. Remove or loosen tight clothing and apply cool, wet clothes such as towels. The person summoned for assistance should call 911 if the victim refuses water, vomits, or loses consciousness.

- **Heat Stroke:** Heat stroke is a life-threatening condition. The victim's temperature control system, which produces sweating to cool the body, stops working. The body temperature can rise so high that brain damage and death may result if the body is not cooled quickly. Signals of heat stroke include:
 - Hot, red and dry skin
 - Changes in consciousness
 - Rapid, weak pulse
 - Rapid, shallow breathing
 - High body temperature – up to 105 degrees F

If you are assisting a person who may be suffering from heat stroke, immediately call 911 and request emergency medical assistance. While awaiting the responders, move the person to a cooler location and attempt to quickly cool their body. Wrap wet sheets or cloths around their body and fan it. If ice packs or cold packs are available, wrap them in cloth and place them on each of the victim's wrists and ankles, in the armpits and on the neck to cool the large blood vessels. Watch for signals of breathing problems and make sure the airway is clear. Keep the person lying down.