



Safety Newsletter

Heat Illness Prevention

Workers who are exposed to extreme heat or work in hot environments may be at risk of heat stress. Exposure to extreme heat can result in occupational illnesses and injuries. Heat stress can result in heat stroke, heat exhaustion, heat cramps, or heat rashes. Heat can also increase the risk of injuries in workers as it may result in sweaty palms, fogged-up safety glasses, and dizziness. Burns may also occur as a result of accidental contact with hot surfaces or steam.

Workers at risk of heat stress include outdoor workers and workers in hot environments such as firefighters, bakery workers, farmers, construction workers, miners, boiler room workers, factory workers, and others. Workers at greater risk of heat stress include those who are 65 years of age or older, are overweight, have heart disease or high blood pressure, or take medications that may be affected by extreme heat.

Prevention of heat stress in workers is important. Employers should provide training to workers so they understand what heat stress is, how it affects their health and safety, and how it can be prevented.



Heat Stroke

Heat stroke is the most serious heat-related disorder. It occurs when the body becomes unable to control its temperature: the body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106 degrees Fahrenheit or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability if emergency treatment is not given.

Symptoms

Symptoms of heat stroke include:

- Chills
- Throbbing headache
- High body temperature
- Hot, dry skin or profuse sweating
- Confusion/dizziness
- Slurred speech
- Hallucinations

First Aid

Take the following steps to treat a worker with heat stroke:

- rapidly cool the worker using methods such as:
 - Fanning their body.
 - Spraying, sponging, or showering them with water.
 - Soaking their clothes with water.
 - Immersing up to the neck in cold water
- Call 911 and notify their supervisor.
- Move the sick worker to a cool shaded area.

Heat Exhaustion

Heat exhaustion is the body's response to an excessive loss of the water and salt, usually through excessive sweating. Workers most prone to heat exhaustion are those that are elderly, have high blood pressure, and those working in a hot environment.

- Symptoms:**
- Heavy sweating
 - Extreme weakness or fatigue
 - Dizziness, confusion
 - Nausea
 - Clammy, moist skin
 - Pale or flushed complexion
 - Muscle cramps
 - Elevated body temperature

- First Aid:**
- Treat a worker suffering from heat exhaustion with the following:
- Drink fluids gradually (4oz. Every 15min.) Water best choice.
 - Have them take a cool shower, bath, or sponge bath.
 - Have them rest in a cool, shaded or air-conditioned area.

Heat Syncope

Heat syncope is a fainting (syncope) episode or dizziness that usually occurs with prolonged standing or sudden rising from a sitting or lying position. Factors that may contribute to heat syncope include dehydration and lack of acclimatization.

- Symptoms:**
- Dizziness
 - Fainting
 - Headache
 - Light-headedness

First Aid

Workers with heat syncope should:

- Sit or lie down in a cool place when they begin to feel symptoms.
- Slowly drink water, clear juice, or a sports beverage.

Heat Cramps

Heat cramps usually affect workers who sweat a lot during strenuous activity. This sweating depletes the body's salt and moisture levels. Low salt levels in muscles causes painful cramps. Heat cramps may also

Symptoms:

Muscle pain or spasms usually in the abdomen, arms, or legs.

First Aid

Workers with heat cramps should:

- Stop all activity, and sit in a cool place.
- Drink clear juice or a sports beverage.
- Do not return to strenuous work for a few hours after the cramps subside because
- Further exertion may lead to heat exhaustion or heat stroke.
- Seek medical attention if any of the following apply:
 - The worker has heart problems.
 - The worker is on a low-sodium diet.
 - The cramps do not subside within one hour.

Recommendations

Employees should avoid exposure to extreme heat, sun exposure, and high humidity when possible. When these exposures cannot be avoided, workers should take the following steps to prevent heat stress:

- Wear light-colored, loose-fitting, breathable clothing such as cotton
- Avoid non-breathing synthetic clothing.
- Gradually build up to heavy work
- Schedule heavy work during the coolest parts of day
- Take more breaks in extreme heat and humidity
- Take breaks in the shade or a cool area when possible
- Drink water frequently. Drink enough water that you never become thirsty
- Avoid drinks with caffeine, alcohol, and large amounts of sugar
- Be aware that protective clothing or personal protective equipment may increase the risk of heat stress
- Monitor your physical condition and that of your coworkers

HEAT ILLNESS

PREVENTION BASICS (OUTDOOR)

1 ACCESS TO WATER

- Potable drinking water
- Maintain, at all times sufficient quantities of pure cool potable water
- Encourage the frequent drinking of water
- Care must be taken to prevent contamination of water
- Implement & maintain effective replenishment

2 ACCESS TO SHADE

- Have and maintain one or more areas of shade at all times, when employees are present
- Shade should be as close as possible to work area
- Provide enough shade to accommodate on recovery & rest periods
- Must have access at all times

When the temperature does not exceed 80° F, provide timely access to shade upon request

3 WEATHER MONITORING

- Supervisors should track the weather of the jobsite (using a thermometer)
- Weather information will be used to modify work schedule, increase number of water and rest breaks or cease work early if necessary

4 HIGH HEAT PROCEDURES

Industries covered by this subsection:

Agriculture, Landscaping, Transportation, and delivery of heavy materials

- Observe employees for alertness and signs & symptoms of heat illness
- Mandatory buddy system / Regular Communication
- Designate one or more employees to call for emergency services
- Hold pre-shift meetings on prevention

WHEN TEMPERATURE EQUAL'S OR EXCEED'S 95°F

5 EMPLOYEE & SUPERVISOR TRAINING

Ensure employees are trained before beginning work on anticipated heat illness concerns. Include the following in training;

- The environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body
- Importance of frequent consumption of small quantities of water
- Different types of heat illness, common signs and symptoms; and appropriate first aid or emergency response
- Knowledge that heat illness may progress rapidly

6 WRITTEN PROCEDURES

As long as they are effective, your Heat Illness Procedures can be integrated into the IIPP.

Maintain the procedures on site or close to the site, so they can be made available to employees and representatives of Cal/OSHA upon request.

- Detail how your department will:
- Provide access to water & shade.
- Monitor the weather.
- Institute high heat procedures (If applicable)
- Address acclimatization methods and procedures.
- Train all employees and supervisors.
- Respond to heat illnesses without delay, provide first aid and emergency services.

HEAT ILLNESS

PREVENTION INDOOR WORKING ENVIRONMENTS

1. Frequent drinking of water

2. Rest in cooler areas

3. Give time to acclimatize

4. Know signs and symptoms

5. Know emergency steps

Employers with employees near sources of heat or inside buildings with limited cooling capabilities must ensure that their Injury and Illness Prevention Program is effective and in writing (i.e. work areas with risk of heat illness have been identified and evaluated, and appropriate corrective measures and training have been implemented to protect workers).

Examples include foundries, ovens, dryers, boilers, warehouses without AC.

Title 8 § 3203 (Injury and Illness Prevention Program,) directs employers to address all health or safety hazards within their worksite including heat illness. Other regulations that apply include, but are not limited to: T8 § 3363 Water Supply, T8 § 3400 Medical Services and First Aid.

Cal/OSHA studies reveal that heat illness and even heat fatalities can occur indoors. The studies also show effective reduction of heat illness depends on written procedures, access to water, access to cooler areas, acclimatization and weather monitoring, emergency response and employee and supervisor training.

HEAT ILLNESS PREVENTION STEPS INCLUDE:

Written Procedures:

Per T8 §3203, all preventive steps, methods and procedures used by the employer to address indoor heat illnesses must be stated in the company's Injury and Illness Prevention Program (IIPP). These written procedures must indicate how to conduct worksite evaluation, how conditions or practices will be corrected if necessary, and how information is to be communicated to workers.

Frequent Drinking of Water:

Water is a key preventive measure against heat illness. Employers need to facilitate and encourage the frequent drinking of water, and to be on the lookout for work situations that interfere with access to water, especially during a heat wave!

Resting in Cooler Areas:

Rest breaks provide time for cooling and the opportunity to drink water. Workers must have access to rest breaks in cooled or air conditioned areas and away from the sources of heat, particularly during a heat wave!

Acclimatization and Weather Monitoring:

Acclimatization is a gradual and temporary adjustment of the body to work in the heat. People need several days to adjust when working conditions are significantly hotter than they are used to. The weather is another significant factor and requires monitoring by employers and supervisors. Institute additional water and rest breaks during a heat wave. Indoor workers face a higher risk of heat illness during periods of high temperatures, if they are working in a building that is not temperature controlled.

Being Prepared for Emergencies:

Written procedures must include steps to be followed in an emergency, which will ensure a rapid effective response, including instructing workers on how to reach 911 despite possible language barriers, how to give instructions to find the worksite and how to administer first aid while an ambulance is in route.

Employee and Supervisor Training:

All workers and supervisors need to know about the importance of frequent drinking of water and resting in cooled areas, the signs and symptoms of heat illness, how to respond and who to report to when someone feels sick and may need to go to the hospital. A Cal/OSHA heat illness study revealed that supervisor training made a significant difference in the outcome of heat illness cases: victims whose supervisors were not trained on heat illness prevention were twice as likely to die as victims whose supervisors had received training. Hence, the effectiveness of your Heat Illness Prevention Procedures depends greatly on how well supervisors are trained.