

Safety Note #20

## HEAT ILLNESS AWARENESS



From 1999 to 2010, a total of 7,415 deaths in the United States, an average of 618 per year, were associated with exposure to excessive natural heat. In addition to fatalities caused by heat illness, numerous reports and citations are received each year for occupational illness caused by working in high heat conditions. By taking several simple precautions, employees can control and/or reduce exposure to conditions that may cause heat illness. California Code of Regulations Title 8, Section 3395 includes requirements for the control of heat illness risks.

### Heat Illness Disorders and Symptoms (in order of progressing severity)

- Heat Rash – Skin rash which commonly occurs under hot and humid conditions where sweat does not evaporate readily. Characterized by irritated/itchy skin with prickly feeling and small red bumps on skin.
- Heat Cramps – Muscle cramping due to loss of salt through sweating. Can be the first sign of more serious heat illness. Characterized by muscle spasms in arms, legs, and abdomen during or following work activities.
- Heat Syncope – Fainting caused by heat exposure and blood pooling in lower portions of the body.
- Heat Exhaustion – Profuse sweating which results in dehydration. Characterized by: fatigue, dizziness, and nausea; pale and moist skin; and possibly slightly elevated temperature. Can progress quickly to heat stroke, if ignored.
- Heat Stroke – Sweating stops and the body fails to regulate its temperature. Victims may die if they don't receive immediate medical treatment. Characterized by: mental confusion, fainting, or seizures; hot dry skin usually reddish in color; and high body temperature.

### Treatments for Heat Illness Disorders

- Heat Rash – Wash and dry skin. Wear loose clothing and keep skin dry.
- Heat Syncope, Heat Cramps, or Heat Exhaustion – MONITOR SYMPTOMS AND PROVIDE FIRST AID – Rest in shaded and cool place and drink non-caffeinated fluids. Monitor for improvement of symptoms and seek emergency care if symptoms worsen. Do not return to work in heat until symptoms are relieved.
- Heat Stroke – FOLLOW ESTABLISHED EMERGENCY RESPONSE PLAN – Call 911 immediately, soak victim's clothing with cool water, move victim to shaded and cool area, fan victim to increase cooling of their body.



### Heat Illness Prevention Regulatory Requirements

1. Written procedures and plans. A written Heat Illness Prevention Plan shall be available at the worksite. Practices and procedures for acclimatization of employees and for emergency response shall be included in the written plan. New employees shall be closely monitored by a supervisor or designee for the first 14 days of employment. Acclimatization procedures are followed for all employees during heat wave events.
2. Water Provisions. Assure employees have ready access to free, pure, suitably cool, fresh, potable water supply as close as practicable to the worksite. Have at least one quart of water available per person per hour of work (two gallons for an eight-hour shift). Supervisors shall encourage employees to frequently consume water.
3. Shade Access. When temperature exceeds 80° F or when employees request recovery break for heat illness symptoms, shade shall be provided and easily accessible from the worksite. The shade shall accommodate the number of the employees on break for lunch or recovery from heat, so they can sit in a normal posture fully in the shade. Employees shall be encouraged to take a cool-down rest for no less than five minutes when they feel the need to protect themselves from overheating. Employees taking preventative cool-down breaks must be monitored for signs of heat illness. If signs of heat illness occur, employees must be encouraged to remain in the shade and not ordered back to work until signs of heat illness have abated.
4. High Temperature Procedures (95° F or higher). A pre-shift safety meeting shall be conducted prior to commencing work to review heat illness information and procedures. Effective communication (voice, electronic, observation) shall be established so employees may contact a supervisor as necessary. A specific employee at each worksite (or all employees on-site) are authorized to contact emergency services when needed. Employees shall be observed for signs of heat illness. Employees shall be reminded to drink plenty of water. Training. Employee training shall encompass workers' rights, employer responsibilities, environmental and personal risk factors for heat illness, procedures for complying with heat illness regulations, acclimatization procedures, emergency response procedures, and methods for monitoring and anticipating temperatures above 80°F at worksites. **Videos E-064 and S-064 Heat Stress are available from the ANR Environmental Health and Safety Library at <http://safety.ucanr.org>.**