

Heat Illness

As temperatures climb, it is increasingly important to understand and recognize the signs of heat illness, which occurs when a person's body temperature rises to an unsafe level. While potentially fatal, there are steps you can take to lessen the risks.

Signs of Heat Illness

Two of the more serious forms of heat illness are heat exhaustion and heat stroke.

Some signs of heat exhaustion are:

- Moist, clammy skin with heavy sweating
- Dizziness, headache, fainting, nausea, and/or vomiting
- Fast, weak pulse and fast, shallow breathing

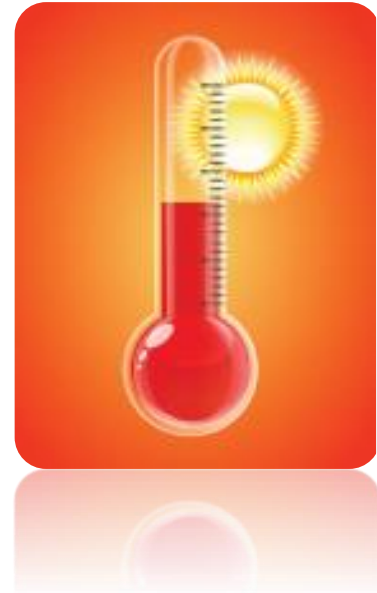
Some signs of heat stroke are:

- Dry, hot skin with no sweating, and very high body temperature (103 degrees or higher)
- Throbbing headache, confusion, dizziness, nausea, and/or loss of consciousness
- Rapid, strong pulse

If someone displays the above symptoms, cool them down as quickly as you can by using cool water, cold compresses, etc. If symptoms persist, call 911.

Ways to Prevent Heat Illness

- Provide shade and cool drinking water at all times, and encourage frequent drinking.
- Limit the consumption of caffeine, as this can lead to dehydration.
- Consider holding lunch and recess breaks indoors when temperatures reach extremes.
- Take breaks during athletic activities to allow participants to cool down.



Heat-related Illnesses and First Aid

Symptoms and first aid measures to take if an employee shows signs of a heat-related illness.

	Symptoms	First-Aid*
Heat Stroke	<ul style="list-style-type: none"> • Confusion • Fainting • Seizures • Excessive sweating or red, hot, dry skin • Very high body temperature 	<p>Call 911</p> <p><i>While waiting for help:</i></p> <ul style="list-style-type: none"> • Place worker in shady, cool area • Loosen clothing, remove outer clothing • Fan air on worker; cold packs in armpits • Wet worker with cool water; apply ice packs, cool compresses, or ice if available • Provide fluids (preferably water), as soon as possible • Stay with worker until help arrives.
Heat Exhaustion	<ul style="list-style-type: none"> • Cool, moist skin • Heavy sweating • Headache • Nausea or vomiting • Dizziness • Light headedness • Weakness • Thirst • Irritability • Fast heart beat 	<ul style="list-style-type: none"> • Have worker sit or lie down in a cool, shady area • Give worker plenty of water or other cool beverages to drink • Cool worker with cold compresses/ice packs • Take to clinic or emergency room for medical evaluation or treatment if signs or symptoms worsen or do not improve within 60 minutes. • Do not return to work that day
Heat Cramps	<ul style="list-style-type: none"> • Muscle spasms • Pain - usually in abdomen, arms or legs 	<ul style="list-style-type: none"> • Have worker rest in shady, cool area • Worker should drink water or other cool beverages • Wait a few hours before allowing worker to return to strenuous work • Have worker seek medical attention if cramps don't go away
Heat Rash	<ul style="list-style-type: none"> • Clusters of red bumps on skin • Often appears on neck, upper chest, folds of skin 	<ul style="list-style-type: none"> • Try to work in a cooler, less humid environment when possible • Keep the affected area dry

*Unless you are a medical professional; use this information as a guide only

Source: https://www.osha.gov/SLTC/heatstress/heat_illnesses.html

Heat Illness Prevention – Student Athletes

Source: Keenan & Associates

Best Practices

We don't only need to worry about Heat Illness prevention for our outdoor workers such as grounds, maintenance, custodians and campus supervisors. As the hot summer season rapidly approaches, young athletes will begin a flurry of outdoor sporting events and activities. In fact, temperatures can soar even into the early fall season. Many student athletes are multi-sport participants with overlapping practices and training sessions throughout the summer season. Remember that temperatures can also rise indoors for sports such as volleyball, basketball, wrestling, etc.

Unfortunately, the combination of summer heat, increased humidity, strenuous exercise, clothing that limits evaporation of sweat, inadequate adaptation to the heat, too much body fat, lack of fitness, and athletic competition can be extremely dangerous to all participants, including the coaches and instructors. Even the most highly conditioned athletes can become victims of heat related illness if they don't take special precautions when exercising in hot and humid weather conditions.

The Two Types of Heat Illness

Heat Exhaustion – Symptoms include: Heavy sweating; painful muscle cramps; extreme weakness; nausea and/or vomiting; dizziness and/or headache; normal or slightly high body temperature; fainting; fast, weak pulse; fast, shallow breathing; and clammy, pale, cool and/or moist skin.

Heat Stroke – symptoms include: No sweating; mental confusion; delirium; convulsions; dizziness; hot and dry skin; possible muscle twitching; pulse can be rapid and weak; throbbing headache; shallow breathing; seizures; unconsciousness and coma. Body temperature may range from 102-104 degrees Fahrenheit or higher.

Heat stroke is the most serious of all heat-related illnesses and should be treated immediately as a medical emergency. In most heat stroke victims, the body's cooling system has stopped working and the core temperature rises to dangerous levels. Heat stroke can have life-long effects to the body and may be fatal if left untreated. Other heat-related illnesses such as heat cramps and heat exhaustion are less severe and require less drastic measures to treat; however, they should not be ignored. These are warning signs that your body is approaching heat stroke levels.

Athletes generally suffer from exertional heat strokes which differ slightly from the traditional types of heat stroke previously mentioned. In exertional heat stroke, victims continue sweating, despite the increased core temperature. For athletes, heat stroke is diagnosed when the body's core temperature rises above 105 F with mental status changes such as disorientation, confusion, loss of balance, and diminished coordination. If any of these symptoms

are present, proper emergency treatment and cooling the patient is essential to preventing collapse, coma, and ultimately, death.

Early warning signs of heat stroke can be subtle and may include irritability, confusion, apathy, belligerence, emotional instability, vomiting, undue fatigue, or irrational behavior. Chills and goose bumps signal shutdown of skin circulation creating a rise in temperature.

Heat Stroke Prevention

- Acclimate slowly to hot, humid conditions.
- Pace practices and duration.
- Early recognition - keep an eye out for early warning signs.
- Provide shade, ice water and misting fans for rest breaks.
- Focus on high risk athletes (those not as fit or have high body mass).
- Avoid exercising in the hottest part of the day and wear light, loose clothing. Suit up in stages.
- Hydrate well before, during, and after exercising using proper hydration techniques.
- Replace lost electrolytes (sodium, potassium, and magnesium) by eating food and drinking sports drinks low in sugar (Drink 16-20 oz/hour).

Competitive sporting activities in the summer months have been the focus of student athletes for decades. Increased pressure to compete at the highest level has young athletes training and pushing their bodies to the limit. Basic knowledge of heat stroke signs, treatment, and prevention allows student athletes to compete at the highest level without the risk of suffering the lifelong effects associated with heat-related illnesses.

Preventing heat stroke hinges on acclimations, hydration, pacing activity, cooling and vigilance. Cool first and transport second.

THE HEAT ILLNESS PREVENTION STANDARD CAL/OSHA APPROVES CHANGES EFFECTIVE APRIL 1, 2015

On February 19, 2015, in a 5 to 1 vote, the the Department of Occupational Safety and Health (Cal/OSHA) Standards Board approved sweeping changes to the existing Heat Illness Prevention Standard. The Standards Board recommended an effective date of April 1, 2015 for implementation.

BACKGROUND

In 2005, California became the first state in the nation to develop a safety and health regulation to protect workers from heat illness. The Heat Illness Prevention Standard, California Code of Regulations Section 3395, became effective in 2006. The regulations include providing employees with water, shade and rest, as well as heat illness training for employees and supervisors. In 2010, Cal/OSHA implemented updated safety standards for employees working in outdoor heat.

NEW REVISIONS RECOMMENDED EFFECTIVE DATE APRIL 1, 2015

The latest revisions, which Cal/OSHA says are necessary based on the Division's enforcement experience, are aimed at specifying the requirements for the provision of water and shade. The revised Standard also ramps up requirements under the high-heat provisions and adds new language on emergency response procedures, acclimation and training.

The changes are as follows:

- Water must be "fresh, pure, suitably cool" and located as close as practicable to where employees are working, with exceptions when employers can demonstrate infeasibility.
- Shade must be present at 80 degrees, instead of the current 85 degrees, and accommodate all employees on recovery or rest periods, and those onsite taking meal periods.
- Employees taking a "preventative cool-down rest" must be monitored for symptoms of heat illness, encouraged to remain in the shade, and not ordered back to work until symptoms are gone. Employees with symptoms must be provided appropriate first aid or emergency response.
- High-heat procedures (which will remain triggered at 95 degrees) shall ensure "effective" observation and monitoring, including a mandatory buddy system and regular communication with employees working by themselves. During high heat, employees must be provided with a minimum 10-minute cool-down period every two hours.
- Emergency response procedures include effective communication, response to signs and symptoms of heat illness, and procedures for contacting emergency responders to help stricken workers.

- Acclimation procedures include close observation of all employees during a heat wave - defined as at least 80 degrees. New employees must be closely observed for their first two weeks on the job.

These revisions will require significant changes in the way most employers in California have operated in regards to heat illness prevention and will affect counties not previously impacted by the old 85 degree threshold, particularly those in coastal and mountain areas.

Cal/OSHA is the employee health and safety division of the Department of Industrial Relations.

For more information on heat illness prevention and training materials visit the Cal/OSHA web site at:

<http://www.dir.ca.gov/heatillness>

Should you have any questions regarding this Bulletin or need any assistance, please contact your Keenan Loss Control Consultant.

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