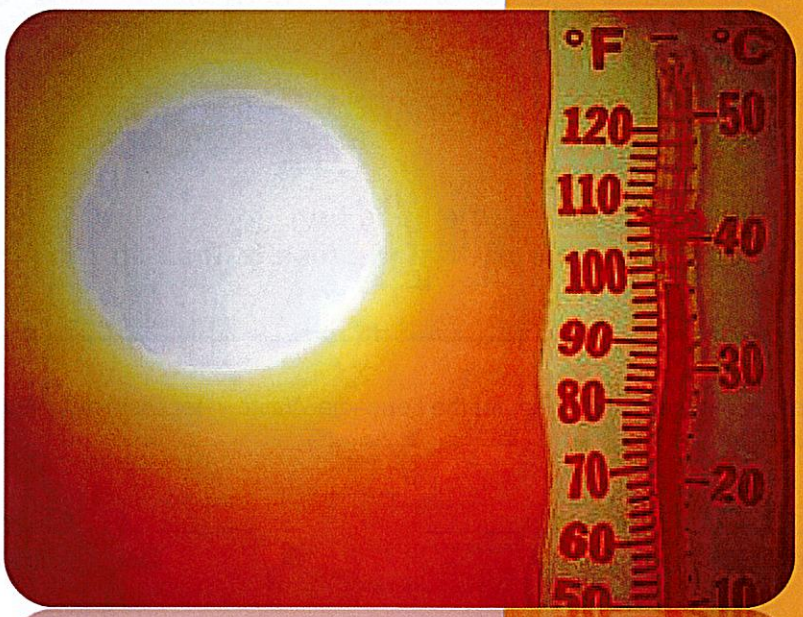
LEUCADIA WASTEWATER DISTRICT | LEADERS IN ENVIRONMENTAL PROTECTION

Heat Illness Prevention Program



1960 La Costa Avenue
Carlsbad, CA 92009
www.lwwd.org 760.753.0155

4/3/2018
Revised: November2024

LEUCADIA WASTEWATER DISTRICT
HEAT ILLNESS PREVENTION PROGRAM

Revised: November 2024

CONTENTS:

ATTACHMENTS:

I certify the Heat Illness Prevention Program for the Leucadia Wastewater District (LWD) has been reviewed and revised as necessary.

General Manager

11/24/2024
Date Certified

1.0 PROGRAM REVIEW AND CERTIFICATION

The Heat Illness Prevention Program at the Leucadia Wastewater District will be reviewed and revised as necessary to ensure the program is current. All revisions are documented on Attachment A: Program Review and Certification Log.

2.0 PURPOSE

The Heat Illness Prevention Program is designed to identify the procedures that will be used by LWD employees to reduce the risks of heat illness while working outdoors or indoors when environmental heat illness risk factors are present in accordance with California Code of Regulations, Title 8 (8 CCR), Sections 3395 and 3396.

3.0 APPLICABILITY

This Heat Illness Prevention Program applies to all LWD personnel (including temporary employees) who perform, or may perform, outdoor or indoor duties in locations where heat related environmental risk factors are present. Persons whose duties involve work activities at such locations are required to comply with the rules of operations and accepted safety practices outlined within this Program.

4.0 DEFINITIONS

Acclimatization. The body's temporary adaptation to hot environments occurs gradually when a person is exposed to such an environment. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.

Administrative Control. A method to limit exposure to a hazard by adjustment of work procedures, practices, or schedules. Examples of administrative control that may be effective at minimizing the risk of heat illness include, but are not limited to: acclimatizing employees, rotating employees, scheduling work earlier or later in the day, using work/rest schedules, reducing work intensity or speed, reducing work hours, changing required work clothing, and using relief workers.

Affected Employees. Employees who could be exposed to high heat conditions while performing outdoor work activities or indoor work activities inside areas where the temperature equals or exceeds 82 degrees Fahrenheit.

Cool-Down Area. An indoor or outdoor area that is blocked from direct sunlight and shielded from other high radiant heat sources to the extent feasible and is either open to the air or provided with ventilation or cooling. A cool-down area does not include a location where; a) environmental risk factors defeat the purpose of allowing the body to cool, or b) employees are exposed to unsafe or unhealthy conditions, or c) employees are deterred or discouraged from accessing or using the cool-down area.

Engineering Control. A method of control or a device that removes or reduces hazardous conditions or creates a barrier between the employee and the hazard. Examples of engineering controls that may be effective at minimizing the risk of heat illness in a particular work area include, but are not limited to: 1) isolation of employees from sources of heat and/or hot processes; 2) the use of air conditioning, cooling fans, cooling mist fans, evaporative coolers (also called swamp coolers) or the use of natural ventilation where the outdoor temperature or heat index is lower than the indoor temperature or heat index.

Environmental Risk Factors for Heat Illness. Working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, and radiant heat from the sun and other sources; conductive heat sources such as the ground, air movement, workload severity and duration; protective clothing and personal protective equipment worn by employees.

Globe Temperature. The globe temperature is measured by using a globe thermometer in direct exposure to the radiant heat. The globe thermometer consists of a thermometer sensor in the center of a six-inch diameter hollow copper sphere painted on the outside with a matte black finish, or equivalent.

Heat Illness. A serious medical condition resulting from the body's inability to cope with a particular heat load, including heat stroke, heat exhaustion, heat cramps, fainting (heat syncope) and heat rash.

Heat Index. A measure of heat stress developed by the National Weather Service (NWS) for outdoor environments that takes into account the dry bulb temperature and the relative humidity. For purposes of this section, heat index refers to conditions in indoor work areas. Radiant heat is not included in the heat index. The required NWS heat index chart is in Attachment C.

High Radiant Heat Source. Any object, surface, or other source of radiant heat that, if not shielded, would raise the global temperature of the cool-down area five degrees Fahrenheit or greater than the dry bulb temperature of the cool-down area.

Heat Wave. Any day in which the predicted high temperatures for the day will be at least 80 degrees Fahrenheit and at least ten degrees Fahrenheit higher than the average high daily temperature in the preceding five days.

High Radiant Heat Area. A work area where the global temperature is at least five degrees Fahrenheit greater than the dry bulb temperature obtained by a thermometer freely exposed to the air without considering humidity or radiant heat.

High Radiant Heat Source. Any object, surface, or other source of radiant heat that, if not shielded, would raise the globe temperature of the cool-down area five degrees Fahrenheit or greater than the dry bulb temperature of the cool-down area.

High Heat Conditions. When outdoor temperatures equal or exceed 95 degrees Fahrenheit.

Indoor. A space that is under a ceiling or overhead covering that restricts airflow and is enclosed along its entire perimeter by walls, doors, windows, dividers, or other physical barriers that restrict airflow, whether open or closed (e.g. manholes, pump stations, vaults, Operations building, etc.)

Personal Heat-Protective Equipment. Equipment worn to protect the user against heat illness. Examples of this equipment that maybe effective at minimizing the risk of heat illness, include but not limited to: water/air-cooled garments, cooling vests, wetted over-garments, heat reflective clothing and supplied-air personal cooling systems.

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/non-prescription medications that affect the body's water retention and other physiological responses to heat.

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

Radiant Heat. Heat transmitted by electromagnetic waves and not transmitted by conduction or convection. Sources of radiant heat include; the sun, hot objects, hot liquids, hot surfaces, and fire.

Relative Humidity. The amount of moisture in the air relative to the amount that would be present if the air were saturated.

Shade. Direct sunlight blockage. 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 that 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. Shade may be provided by any natural or artificial means that does not expose employees to unsafe or unhealthy conditions and that does not deter or discourage access or its use.

Temperature. Means the dry bulb temperature in degrees Fahrenheit obtainable by using a thermometer freely exposed to the air without considering humidity or radiant heat, to measure the temperature in the immediate area where employees are located.

5.0 TRAINING

5.1 Employees

Employees working outdoors or indoors where environmental risk factors for heat illness could be present will receive heat illness awareness and prevention training. New employees will receive this training as part of New Employee Safety Orientation. Training shall include but not be limited to the following:

5.1.1 The environmental and personal heat illness risk factors and prevention methods including:

- Procedures for identifying, evaluating, and controlling exposure to environmental risk factors for heat illness;
- The concept, importance, and methods of acclimatization;
- Different heat illness types and associated symptoms, and the appropriate first aid and emergency response procedures to different types of heat illness.
- How heat illness progresses quickly from mild symptoms to life threatening illness must be stressed as part of this training.
- The importance of frequent water consumption, up to four 8-ounce cups per hour, in hot work environments and when employees are likely to be sweating more than usual;
- LWD's responsibilities under this Program to provide water, shade, cool-down rests, access to first aid and the employees right to exercise their rights of this Program without retaliation.
- The importance for employees to immediately report symptoms or signs of heat illness in themselves, or in co-workers, to their supervisor.
- Training on emergency response procedures found in section 6.3

5.1.2 The employer's heat illness response procedures, including how to access advanced emergency medical services and, if necessary, transporting the victim to a point better reached by emergency medical services;

5.1.3 How to provide clear and precise directions to the work site to emergency responders.

5.2 Supervisors

Supervisors with affected employees shall receive training on heat illness prevention and care prior to being assigned to supervise employees. Supervisors must be competent in the following:

5.2.1 The procedures to implement the applicable provisions in this program;

5.2.2 The procedures to follow when an employee exhibits symptoms consistent with possible heat illness, including access to advanced emergency care;

5.2.3 Implementing high heat procedures found in section 6.6.

5.2.4 Conducting refresher training to personnel at a frequency necessary for personnel to remain competent and informed with these procedures. Supervisors may use Attachment B, "OSHA Heat Illness Quick Card" for this refresher training in addition to other available resources.

5.2.5 How to monitor weather reports and how to respond to hot weather advisories.

5.2.6 Additionally, supervisors shall watch for the following events and initiate retraining as needed:

- When personnel are not observed to be consuming enough fluids while working in hot environments;
- Changes in the workplace that reduce protections from heat or increases in heat exposures (e.g. outdoor projects and hot weather).
- On hot days, especially during heat waves, supervisors will hold additional tailgate meetings to review heat illness procedures with exposed workers. Attachment B can be used for this tailgate briefing.

6.0 PROGRAM COMPONENTS

6.1 Provisions for Water

6.1.1 Personnel shall be provided at no cost, ready access to fresh, pure, suitably cool, potable drinking water.

- The water will be located as close as practical to the areas where employees are working.
- Where water is not continuously supplied (e.g. plumbed), it shall be provided by LWD in sufficient quantity at the beginning of the work shift to provide one quart per person per hour throughout the entire shift, when the work environment is hot and are likely to be sweating more than usual;
- Employers may begin the shift with smaller quantities of water provided effective replenishment procedures are in place and utilized throughout the shift as needed to allow personnel to drink one quart or more per hour;
- LWD Supervisors and FST III's will provide frequent reminders to drink water, and shall provide additional water breaks as needed.

6.1.2 Maintaining drinking water supplies:

- At least two quarts per employee shall be available at the shift start;
- Water dispensers shall be monitored for routine maintenance and cleanliness;
- Disposable/single use drinking cups, reusable bottles, or other drinking containers will be provided to employees.

6.2 Temperature and heat index measurements:

6.2.1 During the hotter months (June through October), when it is expected the FSTs are scheduled to work inside indoor locations for more than 15 minutes when the outside temperature is 75 degrees Fahrenheit or greater, the FSTs will record and monitor the temperature levels using the heat index chart (Attachment C). Indoor locations include, but are not limited to, pump stations and the operations building.

6.2.2 The temperature measurements will be taken again when the temperature is expected to reach 10 degrees or more above the previous measurement to ensure that control measures are used to minimize the risk of heat illness. Specific control measures are listed under section 6.5, General Guidelines and Recommendations. Examples include, but are not limited to: taking breaks in cool down areas, scheduling certain tasks in high temperature locations during the cooler part of the day, and ensuring employees are drinking enough water.

6.3 Access to Shade and Cool-Down Areas

6.3.1 When the outdoor temperature in the work area (i.e. outdoor work activities) exceeds 80 degrees Fahrenheit, shade will be provided or cool-down areas will be immediately available at all times (e.g. air-conditioned truck or building).

Shade or cool-down areas will either be open to the air or provided with a ventilation or cooling system. The shade provided or available cool-down area must accommodate the number of employees on recovery or rest periods, and provide enough room that they can sit in a normal posture, fully in the shade without physical contact with each other.

- The shade or cool-down area shall be located as close as practical to the areas where employees are working.
- The amount of shade present or cool-down area during meal periods shall be at least enough to accommodate the number of employees on the meal period who are taking their lunch onsite.
- The temperature in indoor cool-down areas shall be maintained at less than 82 degrees Fahrenheit, unless the District demonstrates it is infeasible.

6.3.2 When outdoor temperature in the work area (i.e. outdoors work activities) does not exceed 80 degrees, shade will be provided or made available upon request.

6.3.3 Employees suffering from heat illness or believing a preventative recovery period is needed, shall be encouraged to take a preventative cool-down rest in the shade if they feel the need in order to protect themselves from overheating.

Employees who take a preventive cool-down rest shall:

- Be monitored for symptoms of heat illness. This includes asking them if they are experiencing heat illness symptoms. If an employee exhibits signs or symptoms, or reports symptoms of heat illness, they shall receive appropriate first aid by trained coworkers, or as needed, by trained emergency responder in accordance with section 6.4.
- Not be directed back to work until any signs or symptoms of heat illness have abated.
- Remain in the shade for at least a minimum of 5 minutes after all signs and symptoms of heat illness have abated.

6.3.4 Portable shade: If necessary, portable shade devices (canopies, umbrellas, etc.) will be provided if work activities do not allow employees to go inside a cool building, go inside an air-conditioned vehicle, or access a similar cool shaded area.

6.4 Emergency Response Procedures

6.4.1 When the outdoor or indoor temperature in the work area (i.e. outdoors work/confined space activities) exceeds 80 degrees Fahrenheit, or whenever environmental risk factors of heat illness are present such as high humidity (see Attachment C), the following emergency response procedures shall be implemented:

6.4.1.1 Communication: Employees shall have an electronic device (radio or cell phone) or other effective means to contact their supervisor. If cell phone reception is unreliable, a radio or other device will be used to ensure that employees can communicate to their supervisor.

6.4.1.2 Supervisor and work crew lead person shall be prepared to provide first aid and/or contact emergency medical services as indicated:

- If an employee reports or is observed to have signs and symptoms of heat illness, the supervisor or work crew lead person will take immediate action in accordance with the seriousness of the illness. This includes, but not limited to; directing the employee to take a preventative cool-down rest period, assigning a coworker trained in first aid to treat for heat illness, and ensuring the employee drinks plenty of water.
- If the signs or symptoms are indicators of severe heat illness, the Supervisor, or work crew lead person, shall immediately implement emergency response procedures and call emergency medical responders (e.g. 911). Clear and precise directions to the work site must be provided to emergency responders.
- Any employee exhibiting signs or symptoms of heat illness shall be constantly monitored and shall not be left alone at any time. Nor shall they be sent home without being given onsite first aid and/or provided with emergency medical care. If an employee chooses to go home, they shall be driven to their home by another District employee.
- If necessary, an employee exhibiting or reporting signs or symptoms of heat illness shall be transported to a place where they can be reached by an emergency medical provider.
- All reports or observations of heat illness shall be immediately reported to the Field Services Supervisor.

6.5 General Guidelines and Recommendations

6.5.1 Supervisors, whenever possible, shall:

- Schedule maintenance and repair jobs in remote areas and areas of elevated temperature due to geography or topography for cooler months;
- Schedule hot jobs for the cooler part of the day;
- Acclimatize workers by exposing them for progressively longer periods to hot work environments;
- Reduce the physical demands of workers when the temperature rises;
- Use relief workers or assign extra workers for physically demanding jobs;
- Provide cool areas for use during break periods.

6.5.2 Supervisors shall remind employees of the following risk reduction measures:

- Wear light-colored, loose-fitting, breathable clothing such as cotton and avoid non-breathing synthetic clothing;
- Take breaks in the shade or a cool area when possible;
- Drink water frequently and in sufficient quantities to avoid becoming dehydrated;
- Avoid drinks with caffeine and large amounts of sugar;
- Be aware that protective clothing or personal protective equipment may increase the risk of heat stress;
- Monitor personal physical condition and that of coworkers.

6.6 Acclimatization

6.6.1 New employees/new job assignments: An employee who has been newly assigned to a high heat work area or job task shall be closely monitored by a supervisor or designee for the first 14 days of the employee's employment.

6.6.2 During a heat wave (see definitions) all employees working outdoors or indoors shall be closely monitored by a supervisor or designee.

6.7 High-Heat Procedures

6.7.1 Whenever the temperature equals or exceeds 95 degrees Fahrenheit, LWD will implement the following high-heat procedures for employees working outdoors or indoors in high-heat conditions, to the extent practical:

- Supervisors will ensure that such employees have an electronic device (radio or cell phone) or other effective means to contact their supervisor. If cell phone reception is unreliable, a radio or other device will be used to ensure that employees can communicate to their supervisor;
- Supervisors will use one or more of the following techniques to effectively observe/monitor employees for signs and symptoms of heat illness:
  - ✓ Direct observations by Supervisor or designee of 20 or fewer employees
  - ✓ Establish a mandatory buddy system.
  - ✓ Have regular communications with a sole employee by radio or phone, or other device.
  - ✓ Use other effective means of observation as practical.
- Supervisors will designate one or more employees on each worksite as authorized to call for emergency medical services.
  - ✓ Other employees may call for emergency services when no designated employee is available.
- Supervisors will remind employees to be alert for signs and symptoms of heat illness.
- Supervisors shall hold pre-shift meetings before the work shift to review these high heat procedures, to encourage employees to drink plenty of water, and to remind employees of their right to take a cool-down rest when needed.

7.0 RESPONSIBILITIES

7.1 Field Services Superintendent: The LWD Field Services Superintendent has the overall authority and responsibility for implementing the provisions of this Heat Prevention Program for the Leucadia Wastewater District. Specific responsibilities include, but are not limited to:

A. Overall responsibility and authority for ensuring this program is fully implemented.

B. Ensuring that funding is provided to successfully implement the program requirements.

C. Ensuring that the Program and program requirements are enforced.

D. Implementing all other relevant responsibilities as identified in the Injury Illness Prevention Program (IIPP).

7.2 Administrative Services Supervisor is responsible for:

A. Providing Managers and Supervisors guidance on the laws and regulations governing the Heat Illness Prevention Program, and conducting the necessary research to determine which requirements and standards apply.

B. Coordinating/scheduling training for affected Supervisors and crew lead persons in accordance with section 5.2.

C. Providing training resources to affected Supervisors and crew lead persons on heat illness prevention and ensuring that affected Supervisors train their respective employees in accordance with section 5.1

D. Ensures that the training records are maintained.

E. Monitoring the effectiveness of the Heat Illness Prevention program by performing a program review and completing the *Program Review and Certification Form* (Attachment A).

F. Implementing all relevant responsibilities as identified in the Injury Illness Prevention Program (IIPP).

7.3 Supervisors: Supervisors are responsible for:

A. Identifying and maintaining records of all tasks and the employees who are required to work outdoors or indoors where potential heat illness could occur, and notifying the LWD Field Services Superintendent whenever significant operational changes or personnel changes occur.

B. Ensuring adequate water and shade are available at the job site in accordance with sections 6.1 and 6.2 when the environmental risk factors for heat illness are present;

C. Implementing emergency response procedures in accordance with section 6.3 and contacting 911 and a Manager to request emergency medical services in the event medical assistance is required;

D. Ensuring employees who have been newly assigned to a high heat work area or job task, or who will be working outdoors or indoors in a heat wave, have been properly acclimatized in accordance with section 6.5.

E. Implementing high heat procedures when the temperature equals or exceeds 95 degrees Fahrenheit in accordance with section 6.6.

F. Promoting heat illness awareness to all personnel and ensuring personnel comply with all Heat Illness Prevention Program provisions;

G. Ensuring new and existing employees receive documented heat illness training as applicable to their job duties and seasonal temperature changes;

H. Conducting periodic observations to verify Heat Illness Prevention Program compliance.

I. Applying consistent, progressive disciplinary action as needed to maintain compliance with the Heat Illness Prevention Program.

7.4 Employees are responsible for:

A. Participating in safety meetings and attending all relevant training;

B. Immediately reporting any unsafe conditions or any heat illness onset indicators to their supervisor or other appropriate person;

C. Taking a preventative cool-down rest in shade if they feel the need to do so in order to protect themselves from overheating;

D. Awareness and compliance with all appropriate heat illness prevention procedures while performing assigned duties;

E. Drinking hydrating fluids in adequate amounts when the environmental risk factors for heat illness are present;

F. Informing their Supervisor if shade and/or water are inadequate;

G. Contacting 911 and a Supervisor or a Manager, if a Supervisor is not present and emergency medical services are required.

8.0 Recordkeeping

8.1 Training records shall be maintained by LWD for the length of employment.

8.2 Such records shall be provided upon request to current LWD personnel, former employees, and employee representatives.

8.3 Temperature log records shall be retained for 12 months or until the next measurements are taken, whichever date is later.

ATTACHMENT A
Program Review and Certification Log

Heat Illness Prevention Program Review and Certification Log		
Date	**Identify the Sections/Attachments Revised**	**Initial**
11/5/2024	Updated program to include new CalOSHA Indoor Heat Requirements throughout the entire program, including new definitions, new procedures were included in section 6.2 for taking temperature measurements.	TH
6/11/24	Removed Section 5.1.2 due to redundancy to bullet point under Section 5.1.1	NTG
6/11/24	Updated water provisions (Sec. 6.1) to reflect current procedures	NTG
6/11/24	Updated Recordkeeping sections: Sect. 8.1 was updated to state length of time records are maintained equals length of employment. Added new section 8.3 relating to recordkeeping for temperature log records.	NTG

ATTACHMENT B-1
OSHA Heat Illness Quick Card (English)

OSHA QUICK CARD™

Protect Yourself
Heat Stress

When the body is unable to cool itself by sweating, several heat-induced illnesses such as heat stress or heat exhaustion and the more severe heat stroke can occur, and can result in death.

Factors Leading to Heat Stress

High temperature and humidity; direct sun or heat; limited air movement; physical exertion; poor physical condition; some medicines; and inadequate tolerance for hot workplaces.

Symptoms of Heat Exhaustion

- Headaches, dizziness, lightheadedness or fainting.
- Weakness and moist skin.
- Mood changes such as irritability or confusion.
- Upset stomach or vomiting.

Symptoms of Heat Stroke

- Dry, hot skin with no sweating.
- Mental confusion or losing consciousness.
- Seizures or convulsions.

Preventing Heat Stress

- Know signs/symptoms of heat-related illnesses; monitor yourself and coworkers.
- Block out direct sun or other heat sources.
- Use cooling fans/air-conditioning; rest regularly.
- Drink lots of water; about 1 cup every 15 minutes.
- Wear lightweight, light colored, loose-fitting clothes.
- Avoid alcohol, caffeinated drinks, or heavy meals.

What to Do for Heat-Related Illness

- Call 911 (or local emergency number) at once.

While waiting for help to arrive:

- Move the worker to a cool, shaded area.
- Loosen or remove heavy clothing.
- Provide cool drinking water.
- Fan and mist the person with water.

For more complete information:

OSHA Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA

OSHA 3154-07R-06

ATTACHMENT B-2
OSHA Heat Illness Quick Card (Spanish)

OSHA DATOS RÁPIDOS

Protéjase del Estrés por calor

Cuando el cuerpo no puede bajar su temperatura mediante el sudor, pueden ocurrir varias enfermedades debido al calor, tales como estrés o agotamiento por calor e insolación o golpe de calor, las cuales pueden resultar en la muerte.

Factores que llevan al estrés por calor

Alta temperatura y humedad, calor o sol directo, movimiento limitado de aire, esfuerzo físico, pobre condición física, algunas medicinas y tolerancia inadecuada para lugares de trabajo calurosos.

Síntomas de agotamiento por calor

- Dolores de cabeza, mareos, vértigo o desmayo.
- Debilidad y piel húmeda.
- Cambios de humor como irritabilidad o confusión.
- Nauseas o vómitos.

Síntomas de insolación

- Piel seca y caliente sin sudor.
- Confusión mental o pérdida de conocimiento.
- Convulsiones o ataques.

Evita el estrés por calor

- Conozca las señales y los síntomas de las enfermedades relacionadas al calor; obsérvese a si mismo y a sus colegas.
- Bloquee el sol directo u otras fuentes de calor.
- Utilice ventiladores (abanicos) o aire acondicionado; descanse con regularidad.
- Beba mucha agua, como 1 taza cada 15 minutos.
- Vístase con ropa ligera, de colores claros y no ajustada.
- Evite el alcohol, bebidas con cafeína o comidas pesadas.

Qué hacer en caso de enfermedades relacionadas al calor

- Llame al 911 (u otro número local para emergencias) inmediatamente.

Mientras espera por ayuda:

- Mueva a la persona a un lugar fresco y sombreado.
- Suéltele o quitele la ropa pesada.
- Ofrézcale agua fresca para beber.
- Abanique y rocíe con agua a la persona.

Para información más completa:

OSHA Administración de Seguridad y Salud Ocupacional
Departamento del Trabajo de EE.UU.
www.osha.gov (800) 321-OSHA

ATTACHMENT C