RIVERSIDE UNIFIED SCHOOL DISTRICT

HEAT ILLNESS PREVENTION PLAN

Introduction

Heat illness in all its forms has always been a recognized work hazard in California, and across the nation. **Heat related illnesses can be preventable**. Cal/OSHA requires Districts in California to train workers regarding the hazards of working in heat and in heat related illness.

The standard also requires the District to have a written plan that informs employees, supervisors, and managers of the regulatory requirements the District must adhere to related to heat related illness prevention.

The primary goal of the District Heat Illness Prevention Plan is employee safety. The training and operational elements found in this plan will provide employees, managers and supervisors with the tools necessary to anticipate environmental conditions that contribute to heat related illness, to recognize when work assignments place employees at risk and what job instructions need to be communicated to employees regarding the prevention of heat related illness.

Statutory Authority

California Code of Regulations, Title 8 (CCR T8), section 3395 addresses outdoor workplaces, and section 3396 addresses indoor workplaces.

Scope

The District's Heat Illness Prevention Plan is intended to control occurrences of heat related illness. The Plan applies to all outdoor areas where the District's employees can be assigned work, and where environmental conditions cannot be mitigated by engineering controls. Additionally, the Plan also applies to indoor areas where District employees may be assigned work.

Responsibility

All workers are responsible for using safe work practices; following all directives, policies, and procedures; and assisting in maintaining a safe work environment.

Managers and supervisors are responsible for implementing and maintaining the Heat Illness Prevention Program in their assigned work areas and for ensuring workers receive answers to questions about the procedures in a language they understand.

Supervisors are responsible for enforcement of this Plan among the employees under their direction.

Immediate responsibility for workplace heat illness prevention and safety rests with each individual employee. Employees are responsible for following the established work procedures and safety guidelines in their area, as well as those identified in this Plan. Employees are also responsible for using the personal protective equipment issued to protect them from identified hazards, ensuring that they have adequate amounts of drinking water, access to shade, and for reporting any unsafe conditions to their supervisors.

Compliance & Procedures

Nothing in this plan prevents a manager or supervisor from encouraging good heat related work practices when local temperatures are hot but do not reach the thresholds detailed below.

Definitions

Acclimatization: Temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.

Active Cooling Equipment: Clothing or powered devices (passive or active) that work to provide body core cool when worn by an employee.

Heat Illness: A serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

Environmental risk factors for heat illness: Working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, 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.

Full-body protective clothing: Clothing or a protective suit that can provide a protective barrier to prevent dermal contact with a full range of materials from ordinary non-hazardous soiling agents to aggressive hazardous material/chemical substances. This suit provides body protection including head (hood) and feet (integrated booties).

Heat wave: Any day in which the predicted high temperature for the day will be at least 80 degrees Fahrenheit and at least 10 degrees Fahrenheit higher than the average high daily temperature in the preceding five days.

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 medications that affect the body's water retention or other physiological responses to heat.

Preventative recovery period: A period to recover from the heat in order to prevent heat illness.

Shade: Blockage of direct sunlight. 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 the 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 use.

Provisions of Water

1. At the beginning of each shift, all employees who work outside when environmental risk factors for heat illness are present shall have sufficient quantities and immediate access to free, fresh, pure, suitably cool water located as close as practicable to where employees are working, with exceptions made only when infeasibility can be demonstrated by the employer.
2. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in enough quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. Districts may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour.
3. The importance of frequent drinking water should be conveyed and encouraged as described in the training section.

Acclimatization

1. All employees shall be closely observed by a supervisor or designee during a heat wave. For purposes of this section only, “heat wave” means any day in which the predicted high temperature for the day will be at least 80°F and at least 10°F than the average high daily temperature in the preceding five days.
2. An employee who has been newly assigned to a high heat area shall be closely observed by a supervisor or designee for the first 14 days of the employee's employment.

Access to Shade / Cool Down Areas

1. When the temperature does not exceed 80°F, provide shade or timely access to shade upon request.
2. Access to shade shall be made available at all times to any employee experiencing heat illness, symptoms of heat illness, or believing a preventative recovery period is needed. Employees with symptoms must be provided appropriate first aid or emergency response.
3. The preventative recovery period should be at least five (5) minutes. 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.
4. Water shall be made available in the shade/preventative recovery period area.
5. **When temperatures equal or exceed 80°F or during a heat wave, adequate shade must be provided to accommodate all employees on recovery or rest periods, and those onsite taking meal periods.**

Controlling Risk Factors for Heat Illness

Factors that can affect their vulnerability to heat illness include an employee’s age, level of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, overall health, and use of prescription medications that may alter the body’s ability to retain water or otherwise affect its physiological response to heat.

The manager and/or supervisor should implement the proper controls when local weather conditions have achieved, or are expected to achieve more than 8 hours with daytime temperatures at or above 85 degrees Fahrenheit and relative humidity at or above 80%.

1. To identify if environmental risk factors are present, the District should obtain temperature and humidity measurements for the work areas, either by direct measurements or by weather forecasts that are adjusted to match worksite conditions.
2. To evaluate if an environmental risk factor is present, the District should obtain the Heat Index, calculated by the National Weather Service, to rate the risk of heat illness depending on air temperature and humidity.
3. The District should assume there is a significant risk of heat illness when the Heat Index for an employee working in the sun is 80°F or above, and 90°F or above when employees are working in the shade. If workers are wearing more than “light” clothing, the risk of heat illness should be considered significant at a lower Heat Index.
4. To control and reduce the exposure to environmental risk factors, the District shall utilize the following control measures (mark all that apply):
    - ☐ Provide shade for work areas
    - ☐ Schedule outdoor and/or vigorous work in the cooler hours of the day
    - ☐ Schedule more breaks during the day
    - ☐ Provide misters or other cooling devices

Control Measures for Indoor Environments

Control measures should be implemented when either of the following occurs:

- Indoor temperature or heat index is 87°F or higher.
- Indoor temperature is 82°F or higher and workers are either:
    - Wearing clothing that restricts heat removal or
    - Working in an area with high radiant heat.

Feasible engineering controls should be implemented first to **reduce the temperature and heat index to below 87°F** (or temperature to below 82°F for workers working in clothing that restricts heat removal or working in high radiant heat areas).

1. The following engineering controls may be implemented to lower the indoor temperature, heat index, or both to the lowest possible level. These controls help make the work environment cooler or create a barrier between the worker and the heat:
    - Cooling fans or air conditioning
    - Increased natural ventilation, such as open windows and doors when the outdoor temperature or heat index is lower than the indoor temperature and heat index
    - Insulating/isolating heat sources from workers, or isolating workers from heat source
    - Evaporative coolers
    - Dehumidifiers
2. The following administrative controls may be implemented once all feasible engineering controls have been implemented. These controls are modified work practices that can reduce heat exposure by adjusting work procedures, practices, or schedules:
    - Modify work schedules and activities to times of the day when the temperature is cooler or schedule shorter shifts, especially during heat waves. *Heat wave means any day in which the predicted high temperature for the day will be at least 80°F and at least 10°F higher than the average high daily temperature in the preceding 5 days.* For newly hired workers and unacclimatized existing workers, gradually increase shift length over the first one to two weeks.
    - Require mandatory rest breaks in a cooler environment, such as a shady location or an air-conditioned building. The duration of the rest breaks should increase as heat stress rises.
    - Schedule work at cooler periods or times of day, such as early morning or late afternoon.
    - Rotate job functions among workers to help minimize exertion and heat exposure. If workers must be in proximity to heat sources, mark them clearly, so they are aware of the hazards.
    - Require workers to work in pairs or groups during extreme heat so they can monitor each other for signs of heat illness.

High-heat Procedures

The District shall **implement high-heat procedures when the temperature equals or exceeds 95°F**. These procedures could include the following to the extent practicable:

- Ensuring that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when necessary. An electronic device, such as a cell phone or text messaging device, may be used for this purpose only if reception in the area is reliable.

- Observing employees for alertness and signs or symptoms of heat illness. The District should ensure effective employee observation/monitoring by implementing one or more of the following:
    - Supervisor or designee observation of 20 or fewer employees, or
    - Mandatory buddy system, or
    - Regular communication with sole employee such as by radio or cellular phone, or
    - Other effective means of observation.
- Authorizing employees on each worksite to call for emergency medical services.
- Reminding employees throughout the work shift to drink plenty of water.
- Pre-shift meetings before the commencement of work to review the high heat procedures, encourage employees to drink plenty of water, and remind employees of their right to take a cool-down rest when necessary.

Indoor Environments

Where employees are assigned work in an **indoor environment where ambient temperatures will meet or exceed 82°F**, managers and supervisors should ensure that:

- **The temperature in the indoor cool-down areas should be maintained at less than 82° F.**
- Prior to the start of the work shift, when interior environmental conditions require the application of the HIPP, managers and/or supervisors could meet with their employees and review the work procedures to be used during the high heat period.
- Managers and/or supervisors shall ensure that exposed employees have access to cool potable water. Water must be provided to employees at the beginning of the work shift in enough quantities to ensure that employees can consume one quart of potable water per hour.
- When plumbed drinking fountains are not available, bottle water will be made available. Water bottles and/or clean cool water to replenish personal non-disposable water bottles shall be made available upon start of the day to take out to the work site. Site administrators should check on employees throughout the day to confirm that water remains available.
- Employees may be provided with smaller quantities of water if provisions are made to supply one quart of water per hour per employee.
- Managers and/or supervisors should encourage frequent drinking of water by employees.

Additional requirements, where feasible, apply where the temperature reaches 87°F such as cooling down the work area, implementing work-rest schedules, and providing personal heat- protective equipment. Where workers wear clothing that restricts heat removal or work in high radiant heat areas, the additional requirements apply at 82°F.

Reporting Symptoms or Signs of Heat Illness to the District

Employees exhibiting signs or symptoms of heat illness, or who observe a co-worker with signs or symptoms, shall report these symptoms to their supervisor immediately.

Responding to Symptoms of Possible Heat Illness

When an employee has been impacted with a heat related illness, or any emergent medical condition, the District has the following process in place:

1. When an employee appears to be suffering from a heat related illness, contact 9-1-1 immediately. Advise the dispatch representative that an employee is suffering from a heat related emergency. Do not hang up the phone. The emergency dispatch representative will require further information from the calling party.

2. If the affected employee can walk, get them out of the sun, begin active cooling, and advise the emergency dispatch representative of the patient's location. Be as precise as possible, if the dispatcher requests that the employee be moved to a more convenient location that is easier for emergency services (Police and Fire/EMS responders) to access, advise the dispatcher if you think that can be done without further injury.

3. If the patient cannot be re-located, provide the emergency dispatch representative(s) with the precise location. If other employees or outside help is available, direct them to the nearest street to assist in directing emergency services to the patient.

Communication

The supervisor shall account for the whereabouts of all employees at appropriate intervals during and at the end of the work shift. This procedure shall be followed whenever the outdoor work environment creates a heat hazard that could result in the collapse of an employee due to heat illness.

Communication between the Supervisor and their crew is of the utmost importance.

Training

Training should be administered to all employees and their supervisors who fall under the scope of this plan. The District should ensure the effectiveness of the training by one of the following methods:

1. Tailgate meetings before a shift begins
2. Test employees/supervisors after training
3. Conduct the training on a regular basis

Supervisory and non-supervisory employees should be trained on:

1. Environmental and personal risk factors for heat illness
2. District procedures for identifying, evaluating and controlling the exposure to environmental and personal risk factors for heat illness
3. Importance of frequent consumption of small amounts of water under extreme conditions
4. The importance to employees of immediately reporting to the District, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves, or in co-workers.
5. Acclimatization and its importance
6. Types of heat illness and their symptoms, signs, and differences
7. Procedure for immediately reporting the signs and symptoms of heat illness in themselves or in a co-worker to their employer, and its importance
8. Procedures for contacting emergency medical services and transporting employees to a readily accessible location for emergency medical services to reach them
9. Procedures on and how to provide clear and precise directions to emergency medical services
10. The procedures a supervisor shall follow when an employee exhibits symptoms of a possible heat illness, which includes emergency response procedures

Types of Heat Related Illness

1. Heat Cramps- are painful muscle spasms that usually occur in the legs hamstrings) and abdomen. Heat cramps are treatable and are the least severe form of heat related illness.
2. Heat Exhaustion (heat syncope)- is an early indicator that the body's cooling system is becoming overwhelmed. Signals of heat exhaustion include:
    - Cool, moist, pale, ashen or flushed skin.
    - Headache, nausea, dizziness.
    - Weakness, exhaustion.
    - Heavy sweating (a capstone sign)
3. Heat Stroke-is a profound medical emergency. Heat stroke occurs when the body's systems are overwhelmed by heat and stop functioning. Heat stroke is a life-threatening condition and requires professional emergency medical intervention. Signals of heat stroke include:
    - Red, hot, dry skin.
    - Changes in the level of consciousness (LOC).
    - Vomiting.

First Aid for Health-Related Illness

For employees suffering from heat cramps or heat exhaustion:

1. Move the employee out of the sun, to a cool shaded place
2. Loosen tight or restrictive clothing, and remove any personal
3. protective equipment over garments.
4. Remove perspiration-soaked clothing.
5. Apply cool, wet towels to the skin.
6. Fan the employee gently.
7. If the person is conscious, provide small sips of cool water, (not a sports drink).

Employees suffering from heat stroke:

1. This is a profound medical emergency and cannot be successfully treated in the field. Immediate and decisive action is required.
2. Call 9-1-1 and calmly advise the emergency response dispatch of the situation, ensure that accurate directions and all information is provided to Dispatch so medical assistance is not delayed. Move the employee to a place out of the sun or provide shade for them.
3. Loosen tight clothing, and begin active cooling methods (active fanning, pouring cool water over the body core, placing ice packs in the arm pits, behind the neck, and in the groin.
4. Place the employee on their back (supine position) and gently roll them onto their side, with their airway (mouth) pointed down toward the ground in the recovery (Haines) position. Maintain open airway.
5. Continue to cool the person by using ice or cold packs on the employee's wrists, ankles, groin, neck, and armpits.
6. Remain with the employee until medical assistance arrives and aid responders as required.

Hydration Techniques

For most employees who are well acclimated to exterior conditions in the work environment, proper hydration is a simple matter of drinking enough potable water prior to exposure to heat, and at least one quart per hour of cool potable water during the work involving exposure to high heat.

Drink before you get thirsty. If you are working in high heat conditions, and become thirsty, you cannot replace the fluid loss you have sustained orally.

To restate what Cal/OSHA recommends, *an employee must consume up to four (4) cups per hour of cool, potable water during work in high heat conditions. For reference a 500 ml bottle of commercially available water is equal to approximately two (2) cups of water. Thus, consuming two (2) 500 ml bottles of water per hour would equal 4 cups.*

Preventing heat related illness in employees is preferable to responding to a victim of heat illness. It is very important to **"pre-hydrate" prior to beginning work** in a high heat environment. If possible, employees should consume at least one bottle of water, or 2 cups, before beginning work in a high heat environment.

The Cal/OSHA standard requires Districts to provide potable, "cool" water for employees. For reference, public drinking fountains that are not electrically refrigerated provide water at between 75 degrees F and 76 degrees F. If supervisors choose to supply drinking water out of insulated water coolers, the contents need to be kept at that relative temperature.

Additionally, if a water cooler is provided, it must be sanitary, and have a valve for dispensing the water into individual cups, on for each employee, or disposable cups. The use of a communal dipper is not permitted.

The use of salt pills or electrolyte "sports" drinks is not recommended for normal hydration and fluid replacement.

Water is the preferred fluid, taken in the amounts discussed. Do not over- hydrate or try to consume more than the recommended amount and rate. Water intoxication can occur, where so much water is ingested that electrolyte balance is disturbed, which can lead to heart arrhythmias and other circulation problems.

In summary, anticipate high heat conditions, ensure that heat illness risk factors are eliminated or controlled, pre-hydrate before beginning work in high heat and humidity, and consume at least (4) cups of water per hour during work in high heat.

Know the signs and symptoms of heat related illness. Keep an eye on co-workers and respond quickly when you see signs of heat related illness in others.