



Heat Illness Prevention Plan

Review / Revision Date: September 1, 2016

1. Overview and Objectives

It is the policy of the City of Glendale to provide a safe, healthy and secure workplace for all employees by implementing an effective safety program.

This Heat Illness Prevention Plan applies to employees of The City of Glendale, contractors and volunteers who work in outdoor areas of employment or on job tasks where the environmental risk factors for heat illness are present, and are at risk for developing heat illnesses.

The objective of this program is to reduce the potential for heat illnesses by making employees aware of heat illnesses, ways to prevent illness, and actions to take if symptoms occur.

2. Scope

The Heat Illness Prevention Plan includes steps for ensuring that employee training is conducted, drinking water is provided in sufficient amounts, temperatures and humidity conditions are monitored, acclimatization of employees is provided, shade is available, high heat procedures are followed, emergency response procedures are documented, and auditing processes are conducted.

3. Policy

It is the policy of The City of Glendale that any employee participating in job tasks where environmental risk factors for heat illness are present will comply with the procedures in this document and in the Injury and Illness Prevention Program. A copy of this Heat Illness Prevention Plan will be made available at each job site.

4. Responsibilities

Directors

- Implement department specific policies and procedures to prevent heat illnesses and review them annually.
- Propose funding through the City's budgeting process for training and other potential supplies needed to meet this program's requirements.

Managers and Supervisors

- Will assess the workplace to determine if employees are, or may be, potentially exposed to heat stress hazards.
- Determine if the use of engineering and administrative controls can effectively eliminate the identified hazards. If these controls cannot be used to eliminate the hazards and the hazard(s) can only be eliminated by the use of personal protective equipment, they shall:
 - Conduct a hazard assessment to determine the required PPE.
 - Ensure the employee is given the opportunity to acclimate to the environment.
 - Recognize the possible adverse effects and react to the potential of heat and its effect on the employee.



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Employees

- Comply with all engineering, administrative controls, and PPE requirements.
- Use PPE as prescribed by the manufacturer and supervisor.
- Drink plenty of fluids.
- Participate in training designed to recognize the signs and symptoms of heat stress and the proper actions to take, whether experienced personally or observed in co-workers.

Risk Management Division

- Assist departments in determining if PPE is required during the performance of any task in which the employee may be exposed to potential heat stress.
- Assist departments in providing Heat Stress Prevention Training.
- Review this program annually or as required.

5. Training

The City of Glendale will provide training to all supervisors, and affected employees working at locations where environmental risk factors for heat illness are present, prior to their engaging in work that could result in exposure to risk factors for heat illness. Training will include:

- An explanation of the employer's responsibility to provide shade, water, cool-down rest periods, and access to first aid, as well as the employee's right to exercise their rights without fear of retaliation.
- Environmental and personal risk factors for heat illness.
- The signs and symptoms of heat illness.
- The importance of immediately reporting signs and symptoms of heat illness – and appropriate first aid to be taken.
- Importance of frequent consumption of water.
- Importance of acclimatization.
- The City of Glendale response plan to a case of possible heat illness.

Employee Training

Before being assigned to a task where environmental factors are present for heat related illnesses, employees shall be trained in the following areas:

- Environmental and personal risk factors for heat illness
- Procedures for identifying, evaluating, and controlling exposures to the environmental and personal risk factors for heat illness
- The importance of pre/post work hydration and frequent consumption of small quantities of water, up to 4 cups per hour under extreme conditions of work and heat;
- Importance of acclimatization
- Different types, signs, and symptoms of heat illness
- Importance of immediately reporting symptoms or signs of heat illness in themselves or in coworkers to their supervisor.
- Procedures for responding to symptoms of possible heat illness, including how emergency medical services will be contacted and provided, should they become necessary.



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Supervisor Training

Supervisors or their designee are required to provide training on the following topics:

- Information as detailed above in employee training requirements.
- Procedures the supervisor shall follow to implement the provisions of this program.
- Procedures the supervisor shall follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

6. Worksite Assessments

Initial assessments of all worksites shall be made by the Supervisor to minimize the effects of heat exposure and when deemed necessary due to changes of the work environment (ex., change in a work process, personal protective equipment requirement, etc.). Work locations include fixed and mobile worksites, emergency related activities, and special assignments. The following factors shall be assessed:

- Environmental conditions (average temperatures and relative humidity)
- Physical load imposed by job related tools and equipment
- Level and duration of work
- Rest areas
- Personal adaptation (acclimatization)
- Availability of potable water

7. Procedures for Monitoring the Weather

Supervisors will be trained and instructed to check in advance the extended weather forecast. Weather forecasts can be checked with the aid of the internet (<http://www.nws.noaa.gov/>), by calling the National Weather Service phone numbers, or by checking the Weather Channel TV Network. The work schedule will be planned in advance, taking into consideration whether high temperatures or a heat wave is expected. Routine advance weather monitoring will take place between the months of May and September; with additional advance monitoring conducted as needed during the remainder of the year.

In addition to advance weather monitoring, supervisors shall utilize one of the aforementioned weather services to review the day's forecasted temperature and humidity level prior to the start of work. Temperature and humidity levels will also be monitored on the work site throughout the day and compared to the National Weather Service Heat Index to evaluate the risk level for heat illness and determine when precautionary heat illness prevention measures should be taken.

8. Acclimatization

New employees and employees who have not previously worked in environments where the possibility that heat illness may occur will be given an opportunity for their bodies to gradually be exposed to heat. Employees will be given an opportunity to adapt to the heat by working in the heat for at least 2 hours a day, between 4 to 14 days.

The City of Glendale will closely supervise new employees for the first 14 days of employment, unless the new employee indicates at the time of hire that they have been doing similar work for at least 10 of the past 30 days, and for more than 4 hours per day.



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The City of Glendale will stress to new employees the importance of immediately reporting to their supervisor symptoms and signs of heat stress in themselves or in co-workers.

Employees who may be suffering from a heat related illness or when a preventative recovery period is needed shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling. This cooling period should be no less than 5 minutes.

The City of Glendale will also monitor employees during a heat advisory. A heat advisory is defined as any day the predicted temperature is at least 105 degrees Fahrenheit and at least 10 degrees Fahrenheit higher than the average high daily temperature in the preceding 5 days. Monitoring can be done by either the supervisor or by use of the buddy system.

9. Water

Drinking water in the quantity of one quart per hour shall be available for each employee as close as practicable to areas where employees are located and at no charge where it is not plumbed or continuously supplied.

This requirement shall be met at the beginning of the shift and for the entire shift. The shift may begin with small quantities as long as an effective procedure is in place for replenishing water during the shift as needed so that the employees can meet the one quart per hour requirement.

When employees are working in large areas water will be placed in several locations. The City of Glendale will also place water in designated shade areas and near restrooms.

The City of Glendale encourages employees to drink water frequently and to report low water levels, as well as warm or dirty water containers, to supervisors.

Potable Water

An adequate supply of potable water shall be provided in all places of employment.

All sources of drinking water shall be maintained in a clean and sanitary condition. Drinking fountains and portable drinking water dispensers shall not be located in toilet rooms.

Portable containers used to dispense drinking water shall be equipped with a faucet or drinking fountain, shall be capable of being tightly closed and shall be otherwise designed, constructed and serviced so that sanitary conditions are maintained. Water shall not be dipped from containers.

Any container used to store or dispense drinking water shall be clearly marked as to the nature of its contents and shall not be used for any other purpose.

Where drinking fountains are not provided, single-service cups (to be used but once) shall be supplied.

The dipping or pouring of drinking water from containers, such as from barrels, pails or tanks, is prohibited regardless of whether or not the containers are fitted with covers.

The common use of a cup, glass or other vessel for drinking purposes is prohibited.



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Where single-service cups are supplied, a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

Non-potable Water

Non-potable water shall not be used for the purposes of drinking, washing, or food preparation.

Outlets for non-potable water, such as water for industrial or firefighting purposes, shall be posted in a manner understandable to all employees to indicate that the water is unsafe and is not to be used for drinking, washing or cooking purposes.

Non-potable water systems or systems carrying any other non-potable substance shall be maintained so as to prevent backflow or back-siphon into a potable water system.

10. Shade

The City of Glendale will provide shade when the temperature exceeds 80 degrees Fahrenheit. Shade areas will be open to the air or provided with ventilation or cooling. Enough shade will be provided to accommodate the number of employees on break or recovery period at any given time.

The City of Glendale will ensure that employees in shaded areas can sit in a normal posture fully in the shade without having contact with one another. The shade shall be located as close as practicable to the work area. During meal periods, the amount of shade available shall be enough to accommodate the number of employees on meal break and those seeking cool-down rest periods.

The City of Glendale will encourage employees to take a preventive cool-down rest in the shade when they feel the need to protect themselves from overheating.

Employees taking cool-down breaks will be monitored and asked if they are experiencing symptoms of heat illness and will be encouraged to remain in the shade until any signs or symptoms have abated. Employees will be given no less than 5 minutes to rest in the shade, in addition to time needed to access the shade.

The City of Glendale policy will be that any employee who exhibits signs or reports symptoms of heat illness while taking a preventive cool-down rest shall be provided with appropriate first aide or emergency response.

11. High Heat Procedures

The City of Glendale will implement the following high heat procedures when the temperature equals or exceeds 105 degrees Fahrenheit.

The City of Glendale will provide a pre-shift meeting during periods of high heat to remind employees:

- Of high heat procedures
- To drink plenty of water
- Of their right to take cool-down rest periods when necessary



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Ensure that an employee takes a minimum 10-minute preventive cool-down rest period every 2 hours. The preventive cool-down rest period may be provided concurrently with any other required meal or rest period.

A supervisor, or a qualified designee, shall directly observe employees, for signs and symptoms of heat illness. Each supervisor, or qualified designee, shall be responsible for observing no more than 20 employees.

Employees shall be observed for symptoms of heat illness and will be reminded throughout the work shift to drink plenty of water.

If impractical to directly observe employees, a mandatory buddy system shall be implemented or; Regular communication with employees working solo shall be implemented by either radio or cellular phone or other effective observation such as periodic checks.

The City of Glendale will designate 1 or more employees to call for emergency medical procedures, and will allow any employees to call for emergency services when a designated person is not available.

When the work day extends beyond 8-hours, The City of Glendale will provide an additional preventive cool-down period at the conclusion of the 8th hour of work. If the work day extends beyond 10 hours, then another preventive cool-down rest period will be provided at the conclusion of the 10th hour of work, and so on until the end of the work day.

12. Emergency Procedures

Employers and supervisors will be trained to recognize symptoms of heat stress, such as decreased level of consciousness, disorientation, irrational behavior, staggering, vomiting and convulsions; and are required to take immediate action if any employee exhibits signs of the mentioned symptoms of heat illness.

The City of Glendale Emergency Procedures shall be followed for those employees who are experiencing life threatening conditions as a result of a heat related illness.

Supervisors will be taught procedures to follow in case of an employee reporting or displaying symptoms of heat illness.

Supervisors will be trained how to monitor weather reports and how to respond to hot weather advisories.

All supervisors and management personnel of The City of Glendale are required to take immediate action if an employee exhibits signs or symptoms off heat illness. Emergency response procedures will include but not be limited to the following actions:

- Ensuring that effective communication by voice, observation, or electronic means are maintained so that employees at the high temperature work site can contact a supervisor or emergency medical service when necessary.
- Cellphones, company radio, email and other electronic devices will be used for communication. If electronic devices are not reliable forms of communication, The City of Glendale will develop alternative means of summoning emergency medical services.



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- Employees exhibiting signs or symptoms will be monitored and shall not be left alone or sent home without being first offered onsite first aid and /or being provided with emergency medical service.
- If deemed necessary, emergency medical services will be contacted, and employees will be transported to a place where they can be reached by emergency medical providers.
- In emergency events – clear and precise directions to work site will be provided to emergency responders.
- In the event that a work site is in a difficult to find location, an employee will be sent to meet emergency medical services at the nearest landmark; and lead them to the work site.

13. Heat Illness Prevention Plan Audit

Responsibility

The elements of the Heat Illness Prevention Program shall be audited by the Supervisors and the Department's Safety Committee. Risk Management shall be available to provide consultation when needed.

Frequency

The audit of the Heat Illness Program shall be performed annually or as necessary to ensure that the program is working effectively.

Content

The audit shall review the program to ensure that heat illness prevention procedures are in place according to the elements of this program and are being properly followed. This will include, but is not limited to:

- Ensuring that suitably fresh and cool water is routinely provided in the required amounts.
- Ensuring sufficient shade is routinely made available.
- Verifying that the required supervisor and employee training has been completed.
- A review of the effectiveness of emergency response procedures.
- Ensuring that employees are acclimatized as required.
- Ensuring that high heat procedures are implemented when the temperature reaches 95 degrees Fahrenheit.

The audit process and findings shall be certified in writing. Any deficiency found shall be relayed to the Department Safety Committee and the Department Head.

14. Records

All training, audit, and other records prepared in association with the Heat Illness Prevention Program shall be managed in accordance with the requirements of the City of Glendale.



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15. References & Resources

[OSHA TECHNICAL MANUAL, SECTION III, CHAPTER4](#)

https://www.osha.gov/SLTC/heatillness/osha_heattraining_guide_0411.pdf



APPENDIX

Signs & Symptoms of Heat Illness

Heat Stroke

Occurs when the body's system of temperature regulation fails and body temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 41°C (105.8°F). If body temperature is too high, it causes death. The elevated metabolic temperatures caused by a combination of work load and environmental heat load, both of which contribute to heat stroke, are also highly variable and difficult to predict.

If a worker shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The worker should be placed in a shady area and the outer clothing should be removed. The worker's skin should be wetted and air movement around the worker should be increased to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment.

Regardless of the worker's protests, no employee suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

Heat Exhaustion

The signs and symptoms of heat exhaustion are headache, nausea, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment. Heat exhaustion should not be dismissed lightly, however, for several reasons. One is that the fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, a medical emergency.

Workers suffering from heat exhaustion should be removed from the hot environment and given fluid replacement. They should also be encouraged to get adequate rest.

Heat Cramps

Are usually caused by performing hard physical labor in a hot environment. These cramps have been attributed to an electrolyte imbalance caused by sweating. It is important to understand that cramps can be caused by both too much and too little salt. Cramps appear to be caused by the lack of water replenishment. Because sweat is a hypotonic solution ($\pm 0.3\%$ NaCl), excess salt can build up in the body if the water lost through sweating is not replaced. Thirst cannot be relied on as a guide to the need for water; instead, water must be taken every 15 to 20 minutes in hot environments.



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Under extreme conditions, such as working for 6 to 8 hours in heavy protective gear, a loss of sodium may occur. Recent studies have shown that drinking commercially available carbohydrate-electrolyte replacement liquids is effective in minimizing physiological disturbances during recovery.

Heat Collapse ("Fainting")

In heat collapse, the brain does not receive enough oxygen because blood pools in the extremities. As a result, the exposed individual may lose consciousness. This reaction is similar to that of heat exhaustion and does not affect the body's heat balance. However, the onset of heat collapse is rapid and unpredictable. To prevent heat collapse, the worker should gradually become acclimatized to the hot environment.

Heat Rashes

Are the most common problem in hot work environments. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment.

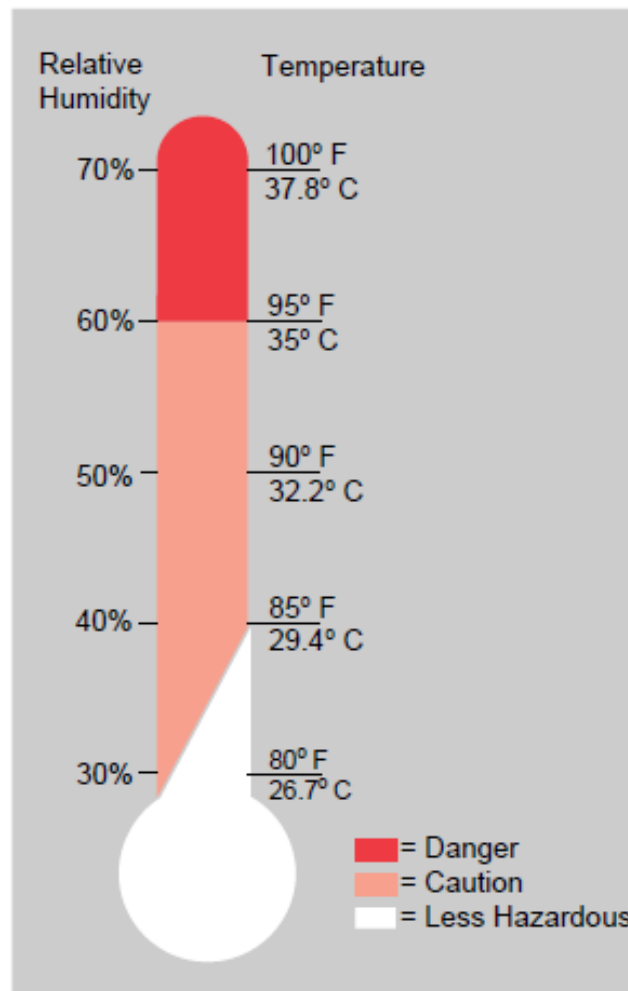
Heat Fatigue

A factor that predisposes an individual to heat fatigue is lack of acclimatization. The use of a program of acclimatization and training for work in hot environments is advisable. The signs and symptoms of heat fatigue include impaired performance of skilled sensorimotor, mental, or vigilance jobs. There is no treatment for heat fatigue except to remove the heat stress before a more serious heat-related condition develops.

THE HEAT EQUATION

HIGH TEMPERATURE + HIGH HUMIDITY + PHYSICAL WORK = HEAT ILLNESS

When the body is unable to cool itself through sweating, **serious** heat illnesses may occur. The most severe heat-induced illnesses are **heat exhaustion** and **heat stroke**. If actions are not taken to treat heat exhaustion, the illness could progress to heat stroke and possible **death**.



U.S. Department of Labor
Occupational Safety and Health Administration

OSHA 3154
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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 fits.

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:

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

OSHA 3154-07R05



WATER. REST. SHADE.

The work can't get done without them.

Heat Exhaustion



Dizziness



Headache



Sweaty Skin



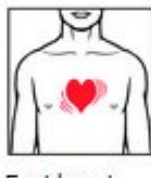
Weakness



Cramps



Nausea,
vomiting

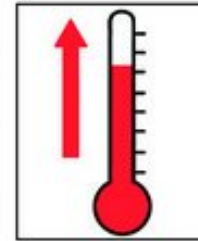


Fast heart
beat

Heat Stroke



Red, hot, dry skin



High temperature



Confusion



Convulsions



Fainting