CSUF | Environmental Health and Safety
ADMINISTRATION AND FINANCE

# Heat Illness Prevention Program

## I. Policy

Employees working in outdoor or indoor places of employment when the environmental risk factors for heat illness are present are at risk for developing heat illnesses if they do not protect themselves appropriately. The objective of this program is to increase employee awareness regarding heat illness symptoms, ways to prevent illness, and what to do if symptoms occur.

It is the policy of California State University, Fullerton that any employee who works in the heat and all individuals who supervise these employees must comply with the procedures in this program and in the Injury and Illness Prevention Program.

## II. Authority

Title 8 of the California Code of Regulations, Section 3395.

Title 8 of the California Code of Regulations, Section 3396.

## III. Scope

This program applies to employees and supervisors working in outdoor/indoor places of employment during times when the risk factors for heat illness are present.

## IV. Definitions

Acclimatization - The 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 about 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 controls that may be effective at minimizing the risk of heat illness in a particular work area 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.

Clothing that restricts heat removal - Full-body clothing covering the arms, legs, and torso that is any of the following: waterproof; designed to protect the wearer from a chemical, biological, physical, radiological, or fire hazard; or designed to protect the wearer or the work process from contamination. Clothing that restricts heat removal does not include clothing demonstrated by the employer to be all of the following: constructed only of knit or woven

fibers, or otherwise an air and water vapor permeable material; and worn in lieu of the employee's street clothing; and worn without a full-body thermal, vapor, or moisture barrier.

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. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. A cool-down area does not include a location where: environmental risk factors defeat the purpose of allowing the body to cool; or employees are exposed to unsafe or unhealthy conditions; 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: isolation of hot processes, isolation of employees from sources of heat, air conditioning, cooling fans, cooling mist fans, evaporative coolers (also called swamp coolers), natural ventilation where the outdoor temperature or heat index is lower than the indoor temperature or heat index, local exhaust ventilation, shielding from a radiant heat source, and insulation of hot surfaces.

Environmental risk factors for heat illness - The 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.

Globe temperature - The temperature measured by a globe thermometer, which 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. The globe thermometer may not be shielded from direct exposure to radiant heat while the globe temperature is being measured.

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. See the appendix for specific information on the forms of heat illness.

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 (2019) is in Appendix B.

Heat wave - Any day in which the predicted high outdoor temperature for the day will be at least 80 degrees Fahrenheit and at least ten degrees Fahrenheit greater than the average high daily outdoor temperature for the preceding five days, for the purpose of this section only.

High radiant heat area - A work area where the globe temperature is at least five degrees Fahrenheit greater than the temperature.

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.

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. All work areas that are not indoor are considered outdoor. EXCEPTION: Indoor does not refer to a shaded area and is used exclusively as a source of shade for employees.

Personal heat-protective equipment – Equipment worn to protect the user against heat illness. Examples of personal heat-protective equipment that may be effective at minimizing the risk of heat illness in a particular work area include, but are not limited to: water-cooled garments, 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 medications that affect the body's water retention or other physiological responses to heat.

Preventative cool-down rest or 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 - The blockage of direct sunlight. 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 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. Metal storage sheds and other outbuildings do not provide protection from sunlight, which meets the definition of shade, unless they provide a cooling environment comparable to shade in open air (i.e., they must be mechanically ventilated or open to air movement).

Shielding - A physical barrier between radiant heat sources and employees that reduces the transmission of radiant heat.

**Temperature** - 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.

## V. Responsibilities

A. Environmental Health and Safety

1. Prepare and maintain a written program, which complies with the requirements of Cal/OSHA Title 8, 3395 and Cal/OSHA Title 8, 3396.

2. Provide training to all potentially impacted employees and their supervisors on the risks and prevention of heat illnesses, including how to recognize symptoms and respond when they appear. Training should be provided annually, as a refresher, prior to the start of the summer season.

B. Directors, Managers, and Supervisors

1. Identify all employees who are required to work outdoors/indoors where potential heat illness could occur and identify the supervisor of the employees.

2. Ensure that adequate water and shade are available at a job site when the environmental risk factors for heat illness are present.

3. Ensure that all affected employees have received proper training on heat illness prevention.

4. Ensure that the requirements in this program are followed.

5. Dial 911 to request emergency medical services if medical assistance is required. CSUF Police Department will direct emergency medical services to the work site.

C. Employees

1. Comply with the provisions of the Heat Illness Prevention Program, as described in this document and in the training sessions.

2. Be familiar with bottle fill station and drinking fountain locations in your designated work area and throughout campus.

3. Be familiar with shaded areas in your designated work area and throughout campus.

4. Report heat related illness symptoms to the supervisor or dial 911 for emergencies.

5. Be familiar with the signs and symptoms of heat related illness.

## VI. Program

A. Access to Water

1. Fresh, pure, suitably cool water will be provided to workers free of charge. Drinking water is provided at water fountains and bottle refill stations throughout campus. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift in water containers or bottled water.

2. Supervisors will ensure that the water is fresh, pure, and suitably cool. During hot weather or high indoor heat work conditions, the water will be cooler than the ambient temperature, but not so cool as to cause discomfort.

3. The water will be located at drinking fountains and bottle refill stations throughout campus. Where drinking water is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift in water containers or bottled water.

4. Workers will be reminded and encouraged to frequently consume small quantities of water throughout their shift. The supervisor will remind workers to drink water throughout the shift.

5. All water containers will be kept in a sanitary condition. Water from non-approved or non-tested water sources (e.g., untested wells) is not acceptable. If hoses or connections are used, they must be approved for potable drinking water systems, as shown on the manufacturer's label.

6. For outdoor work locations, when the temperature equals or exceeds 95 degrees Fahrenheit, or during a heat wave, pre-shift meetings will be conducted before the commencement of work to both encourage workers to drink plenty of water and to remind workers of their right to take a cool-down rest when necessary. Additionally, the number of water breaks will be increased. Supervisors will lead by example and remind workers throughout the work shift to drink water.

B. Access to Cool-Down Areas for Indoor Places of Employment

1. Cool-down areas(s) will be located at designated areas close to the work area. The temperature in the indoor cool-down areas will be maintained at less than 82 degrees Fahrenheit by engineering controls such as air conditioning, cooling fans, cooling mist fans, evaporative coolers (also called swamp coolers), natural ventilation where the outdoor temperature or heat index is lower than the indoor temperature or heat index, and/or local exhaust ventilation.

2. The cool-down area(s) will be available at the site to accommodate all of the workers who are on a break at any point in time and will be large enough so

that all workers on break can sit in a normal posture fully in the cool-down area(s) without having to be in physical contact with each other. The supervisor will ensure there are enough seats in the cool-down area to accommodate the work crew.

3. Workers will be informed of the location of the cool-down area(s) and will be encouraged and allowed to take cool-down breaks in the cool-down area(s) whenever they feel they need a break. A worker who takes a preventative cool-down rest break will be monitored and asked if they are experiencing symptoms of heat illness. In no case will the worker be ordered back to work until signs or symptoms of heat illness have abated (see the section on Emergency Response for additional information). If a worker exhibits signs or symptoms of heat illness while on a preventative cool-down rest, then appropriate first aid or emergency response will be provided. Preventative cool-down rest periods will be at least 5 minutes, in addition to the time needed to access the cool-down area.

C. Access to Shade for Outdoor Places of Employment

1. Shade will be as close as practicable to the workers when the outdoor temperature equals or exceeds 80 degrees Fahrenheit. When the temperature is below 80 degrees Fahrenheit, access to shade will be provided promptly, when requested by a worker. Trees, canopies, umbrellas, and other temporary structures or devices may be used to provide shade. Note: The interior of a vehicle will not be used to provide shade unless the vehicle has a working air conditioner and is cooled down ahead of time.

2. Enough shade will be available at the site to accommodate all of the workers who are on a break at any point in time. During meal periods, there will be enough shade for all workers who choose to remain in the general area of work or in areas designated for recovery and rest periods. To ensure that the provided shade will be enough, we will rotate workers in and out of breaks, including meal periods, and recovery and rest periods, if the number of workers in the crew is higher than the number that can fit comfortably under the shade.

3. Workers will be informed of the location of the shade and will be encouraged to take a five-minute cool-down rest in the shade. Such access will be permitted at all times. A worker who takes a preventative cool-down rest break will be monitored, encouraged to remain in the shade, and asked if they are experiencing symptoms of heat illness. In no case will the worker be ordered back to work until signs and symptoms of heat illness have abated, and in no event less than 5 minutes in addition to the time needed to access the shade. See the section on Emergency Response for additional information.

4. As crews move, shade structures will be relocated to be placed as close as practicable to the workers so that access to shade is provided at all times. To

ensure this is done, the supervisor shall assign a worker the responsibility for moving the shade structures in each location or crew. All workers on a recovery, rest break, or a meal period will have full access to shade so they can sit in a normal posture without having to be in physical contact with each other.

5. Before trees or other vegetation are used to provide shade (such as in orchards), the thickness and shape of the shaded area will be evaluated to ensure that sufficient shadow is cast to protect workers throughout the workday, as the shade moves.

6. In situations where it is not safe or feasible to provide access to shade (e.g., during high winds), the unsafe or unfeasible conditions will be documented, and alternative procedures will be used to provide access to shade that provides equivalent protection, such as utilizing existing permanent structures.

D. Temperature Assessment for Indoor Places of Employment

1. A thermometer or indoor air quality meter capable of measuring temperature will be used to monitor temperature or heat index in high-temperature indoor places of employment. For each high-temperature indoor place of employment, Environmental Health and Safety personnel will determine the locations where temperature measurements will be made that will be representative of worker exposure. Monitoring instruments will be maintained according to the manufacturer's recommendations and the instruments used to measure the heat index shall be based on the heat index chart in Appendix B.

2. The temperature or heat index will be measured and recorded by Environmental Health and Safety personnel. Workers and/or their union representatives will be actively involved in the planning, conducting, and recording of measurements of temperature or heat index.

3. Records of the temperature or heat index measurements, whichever value is greater, will be retained for 1 year or until the next measurements are taken, whichever is later, and made available at the Environmental Health and Safety office (T-1475) to workers or designated representatives upon request. The records will include the date, time, and specific location of all measurements.

4. Initial temperature or heat index measurements shall be taken where workers work and at times during the work shift when worker exposures are expected to be the greatest and when it is suspected to equal or exceed 82 degrees Fahrenheit.

5. Measurements will be taken again when they are reasonably expected to be 10 degrees Fahrenheit or more above the previous measurements where

workers work and at times during the work shift when worker exposures are expected to be the greatest.

6. Workers and/or their union representatives will be actively involved in identifying and evaluating other environmental risk factors for heat illness that may exist in the workplace.

E. Monitoring the Weather for Outdoor Places of Employment

1. The supervisor will be trained and instructed to check the extended weather forecast in advance. Weather forecasts will be checked with the aid of the internet (http://www.nws.noaa.gov/), calling the National Weather Service phone numbers (805-988-6610), 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. This type of advance planning should take place whenever the temperature is expected to reach 70 degrees Fahrenheit or higher.

2. Prior to each workday, the supervisor will monitor the weather at the worksite by the method described above. This critical weather forecast will be taken into consideration to evaluate the risk level for heat illness and when it will be necessary to make modifications to the work schedule (e.g., stopping work early, rescheduling the job, working at night or during the cooler hours of the day, increasing the number of water and rest breaks).

3. The supervisor will monitor the weather throughout the work shift to monitor for an increase in outdoor temperature and to ensure that once the temperature exceeds 80 degrees Fahrenheit, shade structures will be opened and made available to the workers. In addition, when the temperature equals or exceeds 95 degrees Fahrenheit, additional preventive measures, such as high-heat procedures, will be implemented. See the high-heat procedures section for additional information.

F. Control Measures for Indoor Places of Employment

1. Control measures will be implemented when either of the following occurs:

   a. Indoor temperature or heat index is 87 degrees Fahrenheit or higher.

   b. Indoor temperature is 82 degrees Fahrenheit or higher and workers are either wearing clothing that restricts heat removal or working in an area with high radiant heat.

2. Feasible engineering controls will 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). Administrative controls will be added if feasible engineering controls are not enough to comply with the standard. If both

feasible engineering and administrative controls are not enough to decrease the temperature and minimize the risk of heat illness, then personal heat-protective equipment will be provided.

3. The following engineering controls will 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:

    a. Cooling fans or air conditioning

    b. 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

    c. Local exhaust ventilation at points of high heat production or moisture (such as exhaust hoods in laundry rooms)

    d. Reflective shields to block radiant heat

    e. Insulating/isolating heat sources from workers, or isolating workers from heat source

    f. Elimination of steam leaks

    g. Cooled seats or benches

    h. Evaporative coolers

    i. Dehumidifiers

4. The following administrative controls will 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:

    a. 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 degrees Fahrenheit and at least 10 degrees Fahrenheit higher than the average high daily temperature in the preceding five days. For newly hired workers and unacclimatized existing workers, gradually increase shift length over the first one to two weeks.

    b. 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.

c. Schedule work at cooler periods or times of day, such as early morning or late afternoon.

d. 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.

e. Require workers to work in pairs or groups during extreme heat so they can monitor each other for signs of heat illness.

5. The following personal heat-protective equipment will be provided if feasible engineering controls do not decrease the temperature enough and administrative controls do not minimize the risk of heat illness. This personal heat-protective equipment consists of special cooling devices that the worker wears on their body that can protect them in hot environments:

a. Water and/or air-cooled garments, cooling vests, jackets, and neck wraps. The cooling source can be reusable ice packs or cooled air connected to an external source.

b. Supplied air personal cooling systems

c. Insulated suits

d. Heat-reflective clothing

e. Infrared reflecting face shields

G. <u>High Heat Procedures for Outdoor Places of Employment</u>

High-Heat Procedures are additional preventive measures that are used when the temperature equals or exceeds 95 degrees Fahrenheit in outdoor places of employment.

1. Effective communication by voice, direct observation (applicable for work crews of 20 or fewer), mandatory buddy system, or other methods will be maintained so that workers at the worksite can contact a supervisor when necessary. If the supervisor is unable to be near the workers (to observe them or communicate with them), then cell phones, text, or two-way radio will be used for this purpose.

2. Frequent communication will be maintained with workers working by themselves or in smaller groups by cell phone, text, or two-way radio to be on the lookout for possible symptoms of heat illness. The worker(s) will be contacted regularly and as frequently as possible throughout the day since a worker in distress may not be able to summon help on their own.

3. Effective communication and direct observation for alertness and signs and symptoms of heat illness will be conducted frequently. When the supervisor is

not available, an alternate responsible person will be designated by the supervisor ahead of time and the responsible person must be assigned to observe and look for signs and symptoms of heat illness. Another supervisor or lead will be the designated alternate responsible person. If a supervisor, designated responsible person, or any worker reports any signs or symptoms of heat illness in any worker, the supervisor or designated person will take immediate action commensurate with the severity of the illness (see Emergency Response Procedures).

4. Workers will be reminded throughout the work shift to drink plenty of water and take preventative cool-down rest breaks when needed. The supervisor will remind workers to drink water.

5. Pre-shift meetings will be held and documented before the commencement of work to review the high-heat procedures, encourage workers to drink plenty of water, and remind workers of their right to take a cool-down rest when necessary.

For employees employed in Landscape, the following shall also apply:

6. When the temperature equals or exceeds 95 degrees Fahrenheit, workers will be provided one 10-minute "preventative cool-down rest period" every two hours. During the first eight hours of a shift, the cool-down periods may be provided at the same time as the scheduled rest periods already required by Industrial Welfare Commission Order No. 14.

7. Workers working longer than eight hours will be provided with an additional 10-minute cool-down rest period every two hours. For example, if the shift extends beyond eight hours, an additional rest period will be taken at the end of the eighth hour of work. If the shift extends beyond 10 hours, another rest period will be taken at the end of the 10th hour, and so on.

8. All workers will be required to take the cool-down rest periods. Merely offering the opportunity for a break is not enough.

9. Once the temperature equals or exceeds 95 degrees Fahrenheit, records will be kept documenting the fact that mandatory cool-down rest periods were provided and taken.

H. <u>Handling a Heat Wave for Outdoor Places of Employment</u>

1. Heat wave means 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.

2. During a heat wave, all workers will be closely observed by a supervisor or designee. The supervisor or designee will visually observe workers and

maintain regular communication with workers about how they are feeling and any symptoms they may be experiencing.

3. During a heat wave or heat spike, the workday will be cut short or rescheduled (e.g., conducted at night or during cooler hours).

4. During a heat wave or heat spike and before starting work, tailgate meetings will be held to review the Heat Illness Prevention Procedures, the weather forecast, and emergency response procedures. Additionally, if schedule modifications are not possible, workers will be provided with an increased number of water and rest breaks and observed closely for signs and symptoms of heat illness.

5. Each worker will be assigned a "buddy" to be on the lookout for signs and symptoms of heat illness and to ensure that emergency procedures are initiated when someone displays possible signs or symptoms of heat illness.

I. Acclimatization

Acclimatization is the temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. The body needs time to adapt when temperatures rise suddenly, and a worker risks heat illness by not taking it easy when a heat wave or heat spike strikes, or when starting a new job that exposes the worker to heat to which the worker's body hasn't yet adjusted. Inadequate acclimatization can be significantly more perilous in conditions of high heat and physical stress. The following are additional protective procedures that will be implemented when conditions result in sudden exposure to heat that workers are not accustomed to.

1. The weather will be monitored daily. The supervisor will be on the lookout for heat waves, heat spikes, or temperatures to which workers haven't been exposed for several weeks or longer.

2. New workers and those who have been newly assigned to a high-heat area will be closely observed by the supervisor or designee for the first 14 days. The supervisor or designee will maintain close visual observation and regular communication with workers about how they are feeling and any symptoms they may be experiencing.

3. The intensity of the work will be lessened during a two-week break-in period by using procedures such as scheduling slower paced, less physically demanding work during the hot parts of the day and the heaviest work activities during the cooler parts of the day (early morning or evening). Steps taken to lessen the intensity of the workload for new workers will be documented.

4. For indoor work areas, this 14-day observation period applies when the temperature or heat index equals or exceeds 87 degrees Fahrenheit, or when the temperature or heat index equals or exceeds 82 degrees Fahrenheit when

a worker wears clothing that restricts heat removal or when a worker works in a high radiant heat area.

5. Workers and supervisors will be trained in the importance of acclimatization, how it is developed, and how these company procedures address it.

J. Handling a Sick Worker

1. When a worker displays possible signs or symptoms of heat illness, a trained first aid worker or supervisor will evaluate the sick worker and determine whether resting in the shade or cool-down area(s) and drinking cool water will suffice or if emergency service providers will need to be called. A sick worker will not be left alone in the shade or cool-down area(s), as their condition could take a turn for the worse.

2. When a worker displays possible signs or symptoms of heat illness and no trained first aid worker or supervisor is available at the site, emergency service providers will be immediately called by another employee.

3. Emergency service providers will be called immediately if a worker displays signs or symptoms of severe heat illness (e.g., decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior, incoherent speech, convulsions, red and hot face), does not look okay, or does not get better after drinking cool water and resting in the shade. While the ambulance is in route, first aid will be initiated (e.g., cool the worker by placing the worker in the shade, removing excess layers of clothing, placing ice packs in the armpits and groin area, and fan the victim). We will not let a sick worker go home, because even if they start to feel better, their condition could worsen, and they may die before reaching a hospital.

4. If a worker displays signs or symptoms of severe heat illness (e.g., decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior, incoherent speech, convulsions, red and hot face) emergency service providers will be called, the signs and symptoms of the victim will be communicated to them, and an ambulance will be requested.

K. Emergency Response Procedures

1. Dial 911 to request emergency medical services in the event that medical assistance is required. CSUF Police Department first responders are trained in first aid/CPR/AED and will direct emergency medical services to the work site.

2. Effective communication will be ensured by voice, direct observation, mandatory buddy system, or electronic means, such as cell phone, text, or two-way radio, and will be maintained so that workers can contact a supervisor when necessary. If the supervisor is unable to be near the workers

(to observe them or communicate with them), then communication methods including cell phone, text, or two-way radio may be used for this purpose.

3. Determinations will be made if there is a language barrier present in the workplace that might inhibit the calling of emergency services. Manager will designate a supervisor or lead to ensure prompt communication in the case of language barriers.

4. To ensure that emergency medical services can be called, all supervisors will have access to or carry communication devices, such as cell phones, text, or landline phones. These communication devices will be checked prior to each shift to ensure that they are functional.

5. When a worker shows signs or symptoms of severe heat illness, emergency medical services will be called, and steps will immediately be taken to keep the stricken worker cool and comfortable to prevent the progression to more serious illness. Under no circumstances will the affected worker be left unattended.

6. During a heat wave, heat spike, or hot temperatures, workers will be reminded and encouraged to immediately report to their supervisor any signs or symptoms they are experiencing.

7. Workers and supervisors will be trained in these written procedures for emergency response.

L. Worker and Supervisor Training

1. To be effective, training must be understood by workers. Therefore, it must be given in a manner the workers understand. Training records will be maintained and will include the date of the training, who performed the training, who attended the training, and the subject(s) covered. Training records will be maintained by Environmental Health and Safety (T-1475).

2. Supervisors will be trained prior to being assigned to supervise other workers. Training will include written procedures and the steps supervisors will follow when workers exhibit symptoms consistent with heat illness.

3. Supervisors and workers will be trained as it is the university's responsibility to provide water, access to cool-down areas or shade, preventative cool-down rests, and first aid, as well as the workers' right to exercise their rights under this standard without retaliation.

4. Supervisors and workers will be trained in appropriate first aid and/or emergency response to different types of heat illness and made aware that heat illness may progress quickly from mild signs and symptoms to a serious, life-threatening illness.

5. Supervisors will be trained on how to track the weather at the job site (by monitoring predicted temperature or heat index highs). Supervisors will be instructed on how weather information will be used to modify work schedules, increase the number of water and rest breaks, or cease work early if necessary.

6. All workers and supervisors will be trained prior to working. Training will include all aspects of implementing this company's written procedures, including access to sufficient water and shade or cool-down area(s), cool down rests, high-heat procedures, emergency response procedures, control measures, importance of frequent consumption of water, different types of heat illness, common signs and symptoms of heat illness, and acclimatization procedures. Workers and supervisors will also be trained on the environmental and personal risk factors of heat illness, as well as the burden of heat load on the body caused by exertion, clothing, and personal protective equipment. The importance of immediately reporting signs and symptoms of heat illness will be especially emphasized.

7. In addition to initial training, workers will be retrained annually.

8. Workers will be trained on the steps for contacting emergency medical services, including how they are to proceed when there are non-English speaking workers, how clear and precise directions to the site will be provided, how to transport ill workers to a point where they can be reached by an emergency responder, and the importance of making visual contact with emergency responders at the nearest road or landmark to direct them to their worksite, if necessary.

9. New workers will be assigned a "buddy," or experienced co-worker, to ensure that they understand the training and follow company procedures.

Appendix A Heat Stress Fact Sheet

Appendix B National Weather Service Heat Index Chart

**Responsible Executive:** Vice President for Administration and Finance
**Responsible Office:** Environmental Health and Safety
**Revised:** 07/2021, 01/2022, 06/2023, 11/2024, 11/2025

# Appendix A to Heat Illness Prevention Program

## Heat Stress Fact Sheet

High temperatures and humidity stress the body's ability to cool itself, and heat illness becomes a special concern during hot weather. There are three major forms of heat illnesses: heat cramps, heat exhaustion, and heat stroke, with heat stroke being a life-threatening condition.

### Heat Cramps

Heat cramps are muscle spasms which usually affect the arms, legs, or abdomen. Frequently they do not occur until sometime later after work, at night, or when relaxing. Heat cramps are caused by heavy sweating and inadequate consumption of fluids or electrolytes. Although heat cramps can be quite painful, they usually do not result in permanent damage. To prevent getting heat cramps, drink one liter of an electrolyte solution for every three liters of water.

### Heat Exhaustion

Heat exhaustion is more serious than heat cramps. It occurs when the body's internal air-conditioning system is overworked but has not completely shut down. In heat exhaustion, the surface blood vessels and capillaries, which enlarge to cool the blood, collapse from loss of body fluids and necessary minerals. This happens when you do not drink enough fluids to replace what you are sweating away.

The symptoms of heat exhaustion include headache, heavy sweating, intense thirst, dizziness, fatigue, loss of coordination, nausea, impaired judgment, loss of appetite, hyperventilation, tingling in hands or feet, anxiety, cool moist skin, weak and rapid pulse (120-200bpm), and low to normal blood pressure.

Somebody suffering these symptoms should be moved to a cool location such as a shaded area or air-conditioned building. Have them lie down with their feet slightly elevated. Loosen their clothing, apply cool, wet cloths or fan them. Have them drink water or electrolyte drinks. Try to cool them down and have them checked by medical personnel. Victims of heat exhaustion should avoid strenuous activity for at least a day, and they should continue to drink water to replace lost body fluids.

### Heat Stroke

Heat stroke is a life-threatening illness with a high death rate. It occurs when the body has depleted its supply of water and salt, and the victim's body temperature rises to deadly levels. A heat stroke victim may first suffer heat cramps and/or the heat exhaustion before progressing into the heat stroke stage, but this is not always the case. It should be noted that, on the job, heat stroke is sometimes mistaken for heart attack. It is therefore very

important to be able to recognize the signs and symptoms of heat stroke - and to check for them anytime an employee collapses while working in a hot environment.

The early symptoms of heat stroke include a high body temperature (103 degrees Fahrenheit); a distinct absence of sweating (usually); hot red or flushed dry skin; rapid pulse; difficulty breathing; constricted pupils; any/all the signs or symptoms of heat exhaustion such as dizziness, headache, nausea, vomiting, or confusion, but more severe; bizarre behavior; and high blood pressure. Advance symptoms may be seizure or convulsions, collapse, loss of consciousness, and a body temperature of over 108 degrees Fahrenheit.

It is vital to lower a heat stroke victim's body temperature. Seconds count. Pour water on them, fan them, or apply cold packs. Call 9-1-1 and get an ambulance on the way as soon as possible.

Take these precautions to prevent heat-related illnesses:

- Condition yourself for working in hot environments. Start slowly then build up to more physical work. Allow your body to adjust over a few days.

- Drink lots of liquids. Do not wait until you are thirsty! By then, there is a good chance that you are already on your way to being dehydrated. Electrolyte drinks are good for replacing both water and minerals lost through sweating. Never drink alcohol and avoid caffeinated beverages like coffee and soft drinks.

- Take frequent breaks, especially if you notice you are getting a headache or you start feeling overheated. Cool off for a few minutes before going back to work.

- Wear lightweight, light-colored clothing when working out in the sun.

- Take advantage of fans and air-conditioners.

- With a little caution and a lot of common sense, you can avoid heat related illnesses.

## Appendix B to Heat Illness Prevention Program

## National Weather Service Heat Index Chart

# National Weather Service Heat Index Chart

**Temperature (°F)**

| Relative Humidity (%) | 80 | 82 | 84 | 86 | 88 | 90 | 92 | 94 | 96 | 98 | 100 | 102 | 104 | 106 | 108 | 110 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 80 | 81 | 83 | 85 | 88 | 91 | 94 | 97 | 101 | 105 | 109 | 114 | 119 | 124 | 130 | 136 |
| 45 | 80 | 82 | 84 | 87 | 89 | 93 | 96 | 100 | 104 | 109 | 114 | 119 | 124 | 130 | 137 | |
| 50 | 81 | 83 | 85 | 88 | 91 | 95 | 99 | 103 | 108 | 113 | 118 | 124 | 131 | 137 | | |
| 55 | 81 | 84 | 86 | 89 | 93 | 97 | 101 | 106 | 112 | 117 | 124 | 130 | 137 | | | |
| 60 | 82 | 84 | 88 | 91 | 95 | 100 | 105 | 110 | 116 | 123 | 129 | 137 | | | | |
| 65 | 82 | 85 | 89 | 93 | 98 | 103 | 108 | 114 | 121 | 128 | 136 | | | | | |
| 70 | 83 | 86 | 90 | 95 | 100 | 105 | 112 | 119 | 126 | 134 | | | | | | |
| 75 | 84 | 88 | 92 | 97 | 103 | 109 | 116 | 124 | 132 | | | | | | | |
| 80 | 84 | 89 | 94 | 100 | 106 | 113 | 121 | 129 | | | | | | | | |
| 85 | 85 | 90 | 96 | 102 | 110 | 117 | 126 | 135 | | | | | | | | |
| 90 | 86 | 91 | 98 | 105 | 113 | 122 | 131 | | | | | | | | | |
| 95 | 86 | 93 | 100 | 108 | 117 | 127 | | | | | | | | | | |
| 100 | 87 | 95 | 103 | 112 | 121 | 132 | | | | | | | | | | |

**Likelihood of Heat Disorders with Prolonged Exposure and/or Strenuous Activity**

Caution  Extreme Caution  Danger  Extreme Danger