EASTERN OREGON UNIVERSITY

Eastern Oregon University's Heat Illness Prevention Plan

Purpose

The purpose of this plan is to protect our employees from the hazards of hot working environments, in both indoor and outdoor environments, to comply with Oregon OSHA's Heat Illness Prevention Rules. This plan is to be made available to the whole organization and should be reviewed as necessary.

Scope

This plan applies to all organization members who are exposed to hot work environments (greater than 80°F) both inside and outside.
Operations excluded from this program but found in our workplace include:

- Incidental exposure to heat for less than 15 minutes of any 60-minute period
- Exposures to heat generated from the work process
- Buildings and structures with mechanical ventilation that keeps the heat index below 80°F

Operations partially excluded from this program include:

- Employees with "rest" or "light" workloads (see OAR 437-002-0156 Table 1.1 of Appendix A) are exempt when the heat index is less than 90°F.
- Organization members who work from home shall meet all training outlined within this program.

Definitions

Acclimatization - temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it.

Drinking water - Potable water that is suitable to drink and that is cool (66ºF - 77ºF) or cold (35ºF - 65ºF). Drinking water packaged as a consumer product and electrolyte-replenishing beverages that do not contain caffeine (for example, sports drinks) are acceptable substitutes, but should not completely replace the required water.

Feasibility – refers to the ability of an employer to implement any requirement in a rule. Oregon OSHA rules never prohibit work. Whether feasibility is mentioned in a provision of the rule or not, if the employer can demonstrate that it is functionally impossible to comply or if doing so would prevent completion of the work, the employer need not comply, but must take any available reasonable alternative steps to protect the employees involved.

Heat Illnesses - medical conditions resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

Heat Index - The heat index, also known as the apparent temperature, is what the temperature feels like to the human body when relative humidity is combined with the air temperature. The heat index can be readily determined using the OSHA-NIOSH Heat Safety Tool App that can be downloaded for free on smart phone. (https://www.cdc.gov/niosh/topics/heatstress/heatapp.html) for real-time readings and those forecasted for the shift.

For the purposes of this rule, the heat index in an indoor space can be calculated by substituting the measured indoor temperature in the calculation and leaving the humidity unchanged OR by substituting both the measured indoor temperature and the measured indoor humidity.

Relative humidity – the amount of water vapor present in air expressed as a percentage of the amount needed for saturation at the same temperature.

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 working air conditioning.

Procedures and Requirements

Access to shade

Supervisors shall establish and maintain one or more shade areas when the heat index temperature in the work area equals or exceeds 80 degrees Fahrenheit for employees whose work activities are covered by this rule. 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. A shade area must meet the following:

1. The shade area must either be open to the air or provide mechanical ventilation for cooling.

2. The amount of shade present must be at least enough to accommodate the number of employees on recovery or rest periods, so that they can sit in a normal posture fully in the shade.

3. The shade must be located as close as practical to the areas where employees are working.

4. Shade present during meal periods must be large enough to accommodate the number of employees on the meal period that remain onsite. If providing access to shade is not safe or feasible in a particular situation (for example, during high winds or when an employee is walking through range land), then alternative cooling measures that provide equivalent protection shall be identified and implemented.

Drinking water

Supervisors must ensure that an adequate supply of additional drinking water is readily accessible to employees whose work activities are covered by this rule at all times and at no cost when the heat index in the work area equals or exceeds 80 degrees Fahrenheit.

1. Supervisors shall ensure water is immediately and readily available and all employees can access it, 32 ounces per hour shall be available.

2. Supervisors are not required to supply the entire quantity of drinking water needed to be supplied for all employees on a full shift at the beginning of the shift, but ensure effective procedures are established to replenish the water consumed during the shift.

3. Water is cool (66°-77°F) or cold (35°-65°F).

4. Water and/ or electrolyte-replenishing beverages contain no caffeine.

Acclimatization

When air temperatures are expected to rise quickly, Supervisors should gradually increase workloads and allow more frequent breaks during the first week of work so that employees become acclimatized to higher temperatures, especially those who are new to working in the heat or have been away from that work for a week or more.

Table 1: Acclimatization plan for new employees
(*i.e.*, <7 days of experience with the nature of the work)

Day of work	% of time working in the heat (based on 8 hour shift)
1st	20*
2nd	40**
3rd	60***
4th	80****
5th	100*****

*On the 1st day of work, employees will work no more than 2 hours in excessive heat. Employees may be allowed to break this into two 1-hour periods.
**On the 2nd day of work, employees will work no more than 3.2 hours in excessive heat.
*** On the 3rd day of work, employees will work no more than 5 hours in excessive heat.
**** On the 4th day of work, employees will work no more than 6.5 hours in excessive heat.
***** On the 5th day of work, employees may work the entire shift in excessive heat.

Table 2: Acclimatization plan for current employees
(*i.e.*, ≥7 days of experience with the nature of the work)

Day of work	% of time working in the heat (based on 8 hour shift)
1st	50*
2nd	60**
3rd	80***
4th	100****

*On the 1st day of work, employees will work no more than 4 hours in excessive heat.
**On the 2nd day of work, employees will work no more than 4.8 hours in excessive heat.
*** On the 3rd day of work, employees will work no more than 6.4 hours in excessive heat.
**** On the 4th day of work, employees may work the entire shift in excessive heat.

<u>High Heat Practices</u>
Supervisors must implement the following additional high heat practices when the ambient heat index exceeds 90 degrees Fahrenheit.

a) Effective communicate so employees can contact a supervisor using one or more of the following.
    1. Voice
    2. Observation of employees for alertness and signs and symptoms of heat illness.
    3. Communication device; including but not limited to radio's, email, cellular phone (cell phone or text messaging device may be used for this purpose only if reception in the area is reliable).
b) Employees shall be observed for alertness and signs and symptoms of heat illness and monitor to determine whether medical attention is necessary by implementing one or more of the following:
    1. Establishing regular communication via phone, radio, or other means with employees working alone.
    2. Create a mandatory buddy system between employees who are trained in the signs and symptoms and responses to indication of heat illness.
    3. Establishing an equally effective means of observation or communication.
c) One or more employees on each worksite to call for emergency medical services to treat any employee suspected of experiencing heat-related illness and will allow other employees to call for emergency services when designated employees are not immediately available. These practices ensure that

emergency medical care will be immediately available in response to any employee exhibiting symptoms of heat illness

d) Each employee must take a minimum ten-minute preventative cool-down rest period in the shade at least every two hours, regardless of the overall length of the shift when the heat index is of 90°F or greater. If the heat index reaches 100°F or greater than employees must take a minimum 15-minute rest break in the shade every hour.

    The preventative cool-down rest period required by this paragraph may be provided concurrently with any other meal or rest period required by policy, rule or law if the timing of the preventative cool-down rest period coincides with the otherwise required meal or rest period. Except when such a rest period coincides with the existing unpaid meal break, the preventative cool-down rest period is a work assignment and must be compensated accordingly.

Training

All employees, including new employees, supervisory, and non-supervisory employees will be trained in the following topics, before employees begin work that can reasonably be anticipated to expose employees to a heat index equal to or in excess of 80 degrees Fahrenheit:

1. The environmental and personal risk factors for heat illness, as well as the added burden of heat load on the body caused by exertion, clothing, and personal protective equipment.

2. The procedures for complying with the requirements of this standard, including, but not limited to, the employer's responsibility to provide water, provide daily heat index information, shade, cool-down rests, how to report symptoms of heat-related illness, and access to first aid as well as the employees' right to exercise their rights under this standard without fear of retaliation.

3. The concept, importance, and methods of acclimatization.

4. The importance of employees immediately reporting symptoms or signs of heat illness in themselves, or in co-workers.

5. The effects of non-occupational factors (medications, alcohol, obesity, etc.) on tolerance to occupational heat stress.

6. The different types of heat-related illness, the common signs and symptoms of heat related illness.

Heat Illnesses Symptoms and Risks

Heat-related illnesses are preventable. It is important that both management and employees are aware of the signs, symptoms, and risk factors of heat illnesses to recognize and treat those who may be affected.

Signs and symptoms of heat illnesses

Heat stroke- Heatstroke is a condition caused by your body overheating. Heatstroke requires emergency treatment. Untreated heatstroke can become a life-threatening condition. Heat stroke signs/symptoms may include:

high body temperature >103°F, rapid pulse, seizures, nausea, hot red dry skin, slurred speech, confusion, fainting.

Heat exhaustion- Heat exhaustion is a condition caused by your body overheating and being unable to cool down. If untreated, heat exhaustion can lead to heat stroke. Heat exhaustion signs/symptoms may include:

elevated body temperature, heavy sweating, thirst, nausea, headache, decreased urination, irritability, fatigue.

Heat cramps- Heat cramps are a painful condition consisting of muscle spasms caused by dehydration and electrolyte loss. Heat cramps signs/symptoms may include:

muscle spasms and pain typically in the arms, legs and torso. Usually affects arms, legs and torso.

Heat rash- Heat rash occurs when sweat is trapped under the skin and leads to an uncomfortable itchy rash. Heat rash signs and symptoms may include:

red bumps on skin usually around neck, chest, skin folds. Usually affects neck, chest, skin fold.

Heat syncope- Heat syncope consists of fainting or dizziness resulting from heat exposure. Heat syncope signs and symptoms may include:

dizziness, fainting.

Rhabdomyolysis- Rhabdomyolysis is an urgent medical condition that occurs when there is a breakdown of muscle tissue due to overexertion. The condition can cause serious kidney damage and even death if not promptly treated. Rhabdomyolysis signs and symptoms may include:

muscle pain, weakness, dark urine, decreased urination.

Risk factors for heat illnesses

Personal risk factors- The effects of heat stress on individuals will vary based on various health or medical risk factors. These risk factors can make some individuals more susceptible to heat illness than others. Personal risk factors for heat illness include:

obesity, medications, diabetes, alcohol/drug use, high blood pressure, dehydration, heat disease, lower level of physical fitness.

Environmental risk factors- The risk of developing heat illness depends on the environmental conditions that individuals are exposed to. Environmental risk factors for heat illness include:

air temperature, work intensity and duration, relative humidity, type of PPE or work clothing, heat sources, air movement.

Emergency Medical Plan

When the ambient temperature exceeds the heat index of 90 degrees Fahrenheit, if a supervisor observes, or any employee reports, any signs or symptoms of heat illness in any employee, the supervisor must take immediate action appropriate to the severity of the illness:

1. All employees should report immediately any symptoms of heat illness in themselves or if they observe a co-worker to display them.

2. If a supervisor observes signs or an employee reports symptoms of heat illness, the employee must be relieved from duty and provided with a sufficient means to reduce body temperature. Examples include, but are not limited to: cooling blankets, cooling vests, and fans.

3. If the signs or symptoms are indicators of severe heat illness (such as, but not limited to, decreased level of consciousness, staggering, vomiting, disorientation, irrational behavior or convulsions), immediately implement emergency response procedures.

4. An employee exhibiting signs or symptoms of heat illness must be monitored and must not be left alone or sent home without being offered onsite first aid and/or being provided with emergency medical services in accordance with the employer's procedures.

Emergency Response Procedures include the following: Supervisor, or employee when designated emergency employee is not immediately available, shall contact emergency medical services immediately. If necessary and instructed to do so by the medical professionals, transport employees to a place where they can be reached by an emergency medical provider. While waiting for emergency responders to arrive, the supervisor may also cool the employee by moving them to an air-conditioned environment or a cool, shady area.

Supervisor shall ensure that, in the event of an emergency, clear and precise directions to the work site is provided for first responders to quickly navigate to the location of the affected worker.