

Chapter 15

HEAT STRESS PROGRAM

A. References

1. [Washington State L&I Outdoor Heat Exposure \(Heat Stress\)](#)
2. [EH&S Outdoor Heat Stress Program](#)
3. [EH&S Training Factsheet - Heat Related Illness](#)
4. [SPPM 3.10 General Requirements for Personal Protective Equipment](#)
5. [WAC 296-62-095 Outdoor Heat Exposure \(Note: Links from 266-62-09510 through 266-62-09560 are Available from this Link and are Relevant\)](#)
6. [DOSH Directive 10.15 - Outdoor Heat Exposure Enforcement Procedures](#)
7. <http://www.lni.wa.gov/safety/topics/atoz/heatstress/default.asp>
8. <http://apps.leg.wa.gov/WAC/default.aspx?cite=296-62-09013>

B. Purpose and Scope

This Chapter promotes the reduction and elimination of employee heat-related illness. Hot work-environment effects upon workers are reduced by using engineering controls (coolers/fans), administrative controls (training, employee rotation and breaks with access to cool drinking water) and personal protective equipment (cooling vests).

This Chapter applies when employees are exposed to outdoor or indoor temperatures while wearing the clothing identified in the following table:

Clothing & Temperature Action Levels	
Non-breathing clothes including vapor barrier clothing or PPE such as chemical resistant suits	52° F ¹
Double-layer woven clothes including coveralls, jackets, and sweatshirts	77° F
All other clothing	89° F

Note: 1. Heat related illness may result at temperatures below the action levels when employees have not acclimatized to sudden and significant increases in temperature and humidity and/or are wearing PPE while engaged in rigorous activity. Supervisors and employees should monitor for signs and symptoms of outdoor/indoor heat related illness when there is a significant and sudden increase in temperature and/or while engaged in rigorous activity.

C. Responsibilities

Supervisors:

- Providing readily accessible, cool (potable) drinking water for employees when the criteria in the table above apply. Enough water to supply an entire shift need not be available at the beginning of the work shift—water

may be replenished throughout the day. Access to drinking water in a building is sufficient.

- Encouraging employees to frequently consume water or other acceptable beverages to ensure hydration.
- Training employees upon the signs, symptoms, and appropriate response to heat-related illness.

Employees:

- Monitoring their own personal factors for heat-related illness.
- Consuming water or other acceptable beverages.
- Attending and participating in heat-stress training.
- Immediately reporting their own symptoms of heat-related illness or the observed symptoms of coworkers to their supervisor.

D. Training Requirements

When applicable, employees are required to participate in annual training for heat stress and extreme temperature working conditions, including the signs and symptoms of heat related illness.

E. Evaluating and Controlling Heat-Stress Factors

- In addition to high temperature, supervisors should evaluate other potential heat stress factors. These factors include:
 - Radiant Heat (Example: Reflection of heat from asphalt, rocks, or composite roofing material, work in direct sunlight, hot pipes, mechanical rooms).
 - Air Movement (Example: Wind blowing and temperature above 95° F).
 - Conductive Heat (Example: Operating orchard tractor for mowing).
 - Workload Activity and Duration (Examples: Hand sawing, digging with a shovel).
 - Personal Protective Equipment (Examples: Wearing a respirator, chemical resistant suit and gloves for pesticide application, or leathers and gloves for welding).
- Supervisors should attempt to control heat stress factors when feasible. Controls to consider include:
 - A heat stress checklist at the start of work that considers factors affecting heat stress such as:
 - Ambient temperature, humidity, and forecast.
 - Wind speed.
 - Sun/heat reflection and re-radiation.
 - Location(s) of hot machinery.
 - Estimated length of job and work effort.
 - Location of nearest potable water.
 - Indoor room temperature and humidity in mechanical room, steam tunnel, I.T. closet, etc.
 - Required PPE.

- Taking breaks in a shaded area (building, canopy and under trees).
- Starting the work shift early (when daylight begins) and ending the shift early and/or not working outside during the hottest part of the day.
- Removing personal protective equipment such as respirators, chemical resistant clothing and gloves, and welding leathers during breaks.

F. Procedures for Responding to Heat Related Illness

- Supervisors must promptly respond to heat-related illness. The table below summarizes the types of heat-related illnesses, signs and symptoms and specific first aid and emergency procedures. The information must be understood at all work sites where high heat related work activities are conducted.
- Employees experiencing signs and symptoms of a heat-related illness are to cease work and report their condition to their supervisor. Employees showing signs or demonstrating symptoms of heat-related illness are to be relieved from duty and provided means to reduce body temperature. Employees experiencing sunburn, heat rash or heat cramps will be monitored to determine whether medical attention is necessary. Emergency Medical Services will be called (911) when employees experience signs or symptoms of heat exhaustion or heat stroke.

Note: In remote areas, specific procedures might be required to move or transport employees to a place where they can be reached by emergency services.

Heat-Related Illness First Aid and Emergency Response Procedures		
Heat-Related Illness	Signs and Symptoms	First Aid and Emergency Response Procedures
Sunburn	<ul style="list-style-type: none"> • Red, hot skin • Possibly blisters 	<ul style="list-style-type: none"> • Move to shade, loosen clothes • Apply cool compress or water to burn • Get medical evaluation if severe
Heat Rash	<ul style="list-style-type: none"> • Red, itchy skin • Bumpy skin • Skin infection 	<ul style="list-style-type: none"> • Apply cool water or compress to rash • Keep affected area dry

Heat-Related Illness First Aid and Emergency Response Procedures		
Heat-Related Illness	Signs and Symptoms	First Aid and Emergency Response Procedures
Heat Cramps	<ul style="list-style-type: none"> • Muscle cramps or spasms • Grasping the affected area • Abnormal body posture 	<ul style="list-style-type: none"> • Drink water to hydrate body • Rest in a cool, shaded area • Massage affected muscles • Get medical attention if cramps persist
Heat Exhaustion	<ul style="list-style-type: none"> • High pulse rate • Extreme sweating • Pale face • Insecure gait • Headache • Clammy and moist skin • Weakness • Fatigue • Dizziness 	<ul style="list-style-type: none"> • CALL 911 • Provide EMS with directions to worksite • Move to shade and loosen clothing • Start rapid cooling with fan, water mister or ice packs • Lay flat and elevate feet • Drink small amounts of water to hydrate and cool body
Heat Stroke	<ul style="list-style-type: none"> • Any of the above, but more severe • Hot, dry skin (25-50% of cases) • Altered mental status with confusion and agitation • Can progress to loss of consciousness and seizures 	<ul style="list-style-type: none"> • CALL 911 • Provide EMS with directions to worksite • Immediately remove from work area • Start rapid cooling with fan, water mister or ice packs • Lay flat and elevate feet • If conscious give sips of water • Monitor airway and breathing, administer CPR if needed