Washington State University Tri-Cities
Outdoor Heat Stress Prevention Program
for

This program was developed to protect employees from hazards posed by working in the outdoor environment. WSU Tri-Cities is committed to preventing heat related illnesses that can occur to employees working outdoors by:

- Identifying, evaluating and controlling potential exposure to extreme temperature, humidity, and other environmental factors
- Providing drinking water
- Providing supervisor and employee training
- Establishing heat-related emergency procedures

Program Scope and Application

This program applies when employees are exposed to outdoor heat at or above the following temperature and clothing action levels.

Clothing Required	Temperature Action Level
Non-breathing clothes including vapor barrier clothing or PPE such as chemical resistant suits	52° F
All other clothing	80° F

Outdoor work includes any employee assigned to work in an outdoor environment above these thresholds for more than fifteen minutes in any sixty-minute period.

Note: It is possible for heat-related illness to occur at temperatures below the action levels when employees have not been properly acclimated to high temperatures. Supervisors should monitor for signs and symptoms of outdoor heat related illness whenever there is a significant and sudden increase in temperature.

Program Responsibility

- Departments are responsible for implementing this program as part of their Accident Prevention Program.
- Supervisors are responsible for encouraging employees to frequently consume water or other acceptable beverages to ensure hydration.
- Employees are responsible for monitoring their own personal factors for heat related illness including consumption of water or other acceptable beverages to ensure hydration.

Evaluating and Controlling Outdoor Heat Stress Factors

In addition to outdoor temperature, supervisors should evaluate other potential heat stress factors**.** These factors include:

- Radiant Heat (reflection of heat from surfaces, or work in direct sunlight)

- Air Movement (wind blowing and temperature above 95° F)
- Conductive Heat (operating orchard tractor for mowing)
- Intensity of Work Activity and Duration (hand sawing, digging with a shovel)
- Personal Protective Equipment (such as wearing a respirator, chemical resistant suit and gloves for pesticide application)

Supervisors should attempt to control outdoor heat stress factors when feasible. Controls to consider include:

- Taking breaks in shaded areas (building, canopy and under trees)
- Starting and ending the work 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
- Using cooling vests or headbands

Drinking Water

Sufficient quantity of potable drinking water must be provided and made accessible to employees. At least one quart of water per employee per hour will be available. Drinking fountains are available in multiple locations in the East and West buildings, BSEL, CIC, and the Wine Science Center. Fountains equipped with bottle filling stations are also located in East, West, and BSEL. Any employee may utilize these fountains at any time during their work shift.

Beverages other than water may be used for hydration, including electrolyte-replenishing drinks. Acceptable beverages do *not* include products that contain high amounts of sugar, caffeine, or both, such as energy drinks.

Employees working outside for extended periods, or those who cannot readily access building drinking fountains, will be provided water as follows:

Cooldown Breaks & Access to Shade

Once the temperature reaches 80 degrees, employers must allow employees to take preventative cooldown rest periods when the employee feels it is necessary to prevent overheating. Rest periods must be in an area that is shaded and away from radiant heat sources, is cooled or ventilated, and allows the employee to rest in a normal posture *and* to remove PPE or other non-breathing clothing.

Once the temperature reaches 90 degrees, employees are <u>required</u> to take a cooldown rest of at least 10 minutes every 2 hours. At 100 degrees or above, cooldown rest of 15 minutes per hour are required.

During work on campus, cooldown rest periods may be taken indoors in any campus building. Most buildings are air conditioned and provide a suitable environment for cooldown periods.

Employees working outside for extended periods who cannot readily access campus buildings may take their cooldown breaks in the following area(s):

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Acclimatization & Monitoring of Employees

Heat-related illnesses often occur when the individual has not become acclimated to working in the heat, such as upon initial assignment or when temperatures rise suddenly.

Supervisors must monitor employees for signs of heat-related illness:

- For 14 days after initial assignment to work above 80 degrees; and
- For 14 days after an employee returns from an absence of 7 days or more; and
- During a heat wave (when the predicted daily temperature exceeds the average high temperature of the previous 5 days);

In addition to the above, employees must be monitored for signs of heat-related illness whenever temperatures exceed 90 degrees.

Employee monitoring can be accomplished via regular communication with employees, via a mandatory buddy system, or using another effective means of observation.

Employee monitoring will be accomplished using the following method(s):

Procedures for Responding to a Heat-Related Illness

Supervisors will respond to heat-related illness in a quick and safe manner. The table below outlines the potential types of heat-related illnesses, signs and symptoms and specific first aid and emergency procedures. The information should be present at all work sites where outdoor 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 sufficient 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 and symptoms of heat exhaustion or heat stroke.

Heat-Related Illness	Signs and Symptoms	First Aid and Emergency Response Procedures
Sunburn	• Red, hot skin • Possibly blisters	• Move to shade, loosen clothes • Apply cool compress or water to burn • Get medical evaluation if severe
Heat Rash	• Red, itchy skin • Bumpy skin • Skin infection	• Apply cool water or compress to rash • Keep affected area dry
Heat Cramps	• Muscle cramps or spasms • Grasping the affected area • Abnormal body posture	• Drink water to hydrate body • Rest in a cool, shaded area • Massage affected muscles • Get medical attention if cramps persist
Heat Exhaustion	• High pulse rate • Extreme sweating • Pale face • Insecure gait • Headache • Clammy and moist skin • Weakness • Fatigue • Dizziness	• **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	• 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	• **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

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

Employees who are experiencing heat-related illness shall be removed from duty and provided cooling measures as follows:

The following method(s) are to be used to notify supervisors of employees who are showing signs of heat-related illness:

Training

Supervisor Training

Prior to supervising employees working in outdoor environments with heat exposure at or above the action levels supervisors will receive training in the following topics:

- The content and procedures contained in this program
- Procedures listed in this program to be followed if an employee shows signs and symptoms consistent with possible heat-related illness
- Specific procedures, if necessary, describing how to move or transport employees to a place where they can be reached by emergency medical services
- Information provided to employees

Employee Training

Employees who may be exposed to outdoor heat at or above the action levels are to be trained on the following topics:

- Environmental factors that might contribute to the risk of heat-related illness (temperature, humidity, radiant heat, air movement, conductive heat sources, workload activity and duration, and personal protective equipment)
- Personal factors that may increase susceptibility to heat-related illness (age, degree acclimatization, medical conditions, drinking water, consuming alcohol, caffeine use, nicotine use, and use of medications that affect the body's response to heat)
- The importance of removing heat retaining personal protective equipment, such as non-breathable chemical resistant clothing, during breaks
- The importance of frequent drinking of small quantities of water
- The importance of acclimatization

- The different types and common signs and symptoms of heat-related illnesses
- The procedure for immediately reporting signs and symptoms of heat-related illness, in themselves and/or co-workers, to their supervisor or person in charge.

Supervisors and employees covered by this program must complete training annually. Training materials are available on demand on Canvas. Contact EH&S at 372-7163 for assistance accessing the training, or for more information.