



## **HEAT STRESS PREVENTION PLAN**

### **I. Purpose**

- a. The purpose of this procedure is to reduce the risk of illness, injury, or death for those individuals on campus who work in hot environments and are susceptible to heat related illnesses. This shall apply to all students, staff and faculty at Tennessee Tech University.

### **II. Definitions**

Heat Cramps - Painful muscle spasms, as a result of exposure to excess heat. This occurs when a worker drinks a lot of water, but does not replace salts lost from sweating.

Heat Exhaustion – A condition usually caused by loss of body water because of exposure to excess heat. Symptoms include headache, tiredness, nausea, and sometimes fainting.

Heat Rash- Skin irritation caused by excessive sweating during hot, humid weather.

Heat Stress- Relative amount of thermal strain from the environment.

Heat Stroke – A serious disorder resulting from exposure to excess heat. It results from sweat suppression and increased storage of body heat. Symptoms include hot dry skin, high temperature, mental confusion, convulsions, and coma. Heatstroke is fatal if not treated properly.

Heat Syncope - Weakness, fatigue and fainting due to loss of salt and water in sweat and exercise in the heat.

### **III. Roles and Responsibilities**

- a. Environmental Health and Safety
  - i. Assist supervisors with providing annual training to employees who work in hot conditions.
  - ii. Ensure the Heat Stress Prevention Plan is being followed and revise periodically.
  - iii. Assist supervisors in determining appropriate engineering and administrative controls in minimizing heat load on employees.
  - iv. Provide training to employees on heat risk exposure and heat related illnesses if requested by departments.
  - v. Upon request, can evaluate the workplace for heat stress risk and recommend ways to manage exposure to heat.
  - vi. Investigate any accidents that occur as a result of heat-related illnesses.
- b. Supervisors
  - i. Recognize heat stress and risk factors.
  - ii. Provide fluid replacement for employees working under hot conditions.
  - iii. Identify specific areas in which workers are exposed to or likely to experience significantly hot environments.
  - iv. Determine tasks and activities that require extensive physical activity in hot environments.
  - v. Identify those workers whose job duties place them at risk for suffering a heat-related illness.

- vi. Identify personal protective equipment or specialized clothing that may increase the heat load on workers.
  - vii. Review the use of engineering controls such as ventilation systems, cool rest areas, or other items in place at your facility that can reduce the heat load on workers.
  - viii. Review the use of work practice controls such as periodic rest breaks, work scheduling, or other practices that can reduce the heat load on workers.
  - ix. Provide training for all employees who work under hot conditions.
- c. Employees
- i. Participate in heat stress training and learn the signs and symptoms of heat stress, as well as risk factors.
  - ii. Follow all instructions given to reduce risk of heat-related injury.
  - iii. Monitor themselves and coworkers for signs of heat-related illnesses.
  - iv. Promptly report any known or suspected unsafe conditions, or unsafe procedures to the supervisor.

#### IV. Symptoms of Heat Stress

Illness	Symptoms	First Aid*
Heat stroke	<ul style="list-style-type: none"> <li>▪ Confusion</li> <li>▪ Fainting</li> <li>▪ Seizures</li> <li>▪ Excessive sweating or red, hot, dry skin</li> <li>▪ Very high body temperature</li> </ul>	<ul style="list-style-type: none"> <li>▪ Call 911</li> </ul> <p>While waiting for help:</p> <ul style="list-style-type: none"> <li>▪ Place worker in shady, cool area</li> <li>▪ Loosen clothing, remove outer clothing</li> <li>▪ Fan air on worker; cold packs in armpits</li> <li>▪ Wet worker with cool water; apply ice packs, cool compresses, or ice if available</li> <li>▪ Provide fluids (preferably water) as soon as possible</li> <li>▪ Stay with worker until help arrives</li> </ul>
Heat exhaustion	<ul style="list-style-type: none"> <li>▪ Cool, moist skin</li> <li>▪ Heavy sweating</li> <li>▪ Headache</li> <li>▪ Nausea or vomiting</li> <li>▪ Dizziness</li> <li>▪ Light headedness</li> <li>▪ Weakness</li> <li>▪ Thirst</li> <li>▪ Irritability</li> <li>▪ Fast heart beat</li> </ul>	<ul style="list-style-type: none"> <li>▪ Have worker sit or lie down in a cool, shady area</li> <li>▪ Give worker plenty of water or other cool beverages to drink</li> <li>▪ Cool worker with cold compresses/ice packs</li> <li>▪ Take to clinic or emergency room for medical evaluation or treatment if signs or symptoms worsen or do not improve within 60 minutes.</li> <li>▪ Do not return to work that day</li> </ul>
Heat cramps	<ul style="list-style-type: none"> <li>▪ Muscle spasms</li> <li>▪ Pain</li> <li>▪ Usually in abdomen, arms, or legs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Have worker rest in shady, cool area</li> <li>▪ Worker should drink water or other cool beverages</li> <li>▪ Wait a few hours before allowing worker to return to strenuous work</li> <li>▪ Have worker seek medical attention if cramps don't go away</li> </ul>

<b>Heat rash</b>	<ul style="list-style-type: none"> <li>▪ Clusters of red bumps on skin</li> <li>▪ Often appears on neck, upper chest, folds of skin</li> </ul>	<ul style="list-style-type: none"> <li>▪ Try to work in a cooler, less humid environment when possible</li> <li>▪ Keep the affected area dry</li> </ul>
<p>* Remember, if you are not a medical professional, use this information as a guide only to help workers in need. <a href="http://www.osha.gov">www.osha.gov</a></p>		

## V. CONTROL OF HEAT STRESS

- a. Supervisors should take the following steps to protect workers from heat stress:
  - i. Schedule maintenance and repair jobs in hot areas for cooler months.
  - ii. Schedule hot jobs for the cooler part of the day.
  - iii. Acclimatize workers by exposing them for progressively longer periods to hot work environments.
  - iv. Reduce the physical demands of workers.
  - v. Use relief workers or assign extra workers for physically demanding jobs.
  - vi. Provide cool water or liquids to workers.
    1. Avoid alcohol, and drinks with large amounts of caffeine or sugar.
  - vii. Provide rest periods with water breaks.
  - viii. Provide cool areas for use during break periods.
  - ix. Monitor workers who are at risk of heat stress.
- b. Recommendations for employees/students:
  - i. Avoid exposure to extreme heat, sun exposure, and high humidity when possible. When these exposures cannot be avoided, workers should take the following steps to prevent heat stress:
  - ii. Wear light-colored, loose-fitting, breathable clothing such as cotton.
  - iii. Avoid non-breathing synthetic clothing.
  - iv. Gradually build up to heavy work.
  - v. Schedule heavy work during the coolest parts of day.
  - vi. Take more breaks in extreme heat and humidity.
  - vii. Take breaks in the shade or a cool area when possible.
  - viii. Drink water frequently. Drink enough water that you never become thirsty. Approximately 1 cup every 15-20 minutes.
  - ix. Avoid alcohol, and drinks with large amounts of caffeine or sugar.
  - x. Be aware that protective clothing or personal protective equipment may increase the risk of heat stress.
  - xi. Monitor your physical condition and that of your coworkers.

## VI. Training

- a. EHS will provide access to online training or in-person training for all TTU employees who are at risk of occupationally related heat stress.

## VII. References

OSHA- Occupational Heat Exposure