

Heat Stress Prevention Procedure

University Facilities (UF)

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Responsible Office: University Facilities

Approved by: Todd Barnette

Review Cycle: Every three (3) years or following significant regulatory changes or operational lessons learned.

1.0 PURPOSE

The purpose of this procedure is to establish a comprehensive framework for preventing heat-related illnesses among University Facilities employees and other personnel performing work under the direction of University Facilities during periods of elevated environmental heat exposure.

This procedure establishes responsibilities, planning expectations, operational controls, and emergency response requirements intended to reduce the likelihood of heat-related illness while maintaining essential university operations. The procedure emphasizes proactive planning, employee education, supervisory oversight, and implementation of appropriate engineering, administrative, and work practice controls based on environmental conditions and work demands.

2.0 SCOPE

This procedure applies to all University Facilities departments whose employees perform work outdoors or in indoor environments where elevated temperatures, radiant heat, humidity, or restricted air movement may create conditions capable of producing heat stress. This policy also applies to contractors performing work under University Facilities oversight, when contract requirements specify compliance with University safety procedures.

This procedure applies whenever environmental or workplace conditions present an increased risk of heat-related illness regardless of season. Although the highest risk generally occurs during late spring through early fall, elevated heat exposure may occur at any time of year.

3.0 AUTHORITY

This procedure is issued under the authority of the Associate Vice President for Facilities and supports the University's commitment to providing a safe and healthful workplace.



This procedure supplements applicable federal and state occupational safety requirements and shall be implemented in conjunction with University Occupational and Environmental Safety policies and departmental safety programs.

Nothing within this procedure supersedes emergency medical judgment or applicable regulatory requirements.

4.0 REFERENCES

This procedure was developed using recognized industry guidance and applicable regulatory standards, including:

- Occupational Safety and Health Administration (OSHA)
- OSHA National Emphasis Program – Outdoor and Indoor Heat-Related Hazards
- OSHA Proposed Heat Injury and Illness Prevention Rule (used as planning guidance where applicable)
- National Institute for Occupational Safety and Health (NIOSH)
- American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values
- University Occupational and Environmental Safety guidance
- University Emergency Management procedures
- University Facilities Safety Manual

Future revisions shall incorporate changes to applicable OSHA regulations and University policy.

5.0 DEFINITIONS

5.1 Acclimatization

The physiological process through which an employee gradually develops increased tolerance to working in hot environments. Proper acclimatization significantly reduces the likelihood of heat-related illness.

5.2 Heat Stress

The total heat burden placed on the body from environmental conditions, physical activity, clothing, personal protective equipment, and individual health factors.

5.3 Heat Illness

Any medical condition resulting from the body's inability to adequately dissipate heat, including:

- Heat Rash
- Heat Cramps
- Heat Syncope (Fainting)
- Heat Exhaustion
- Heat Stroke

5.4 Heat Index

A measure combining air temperature and relative humidity to describe the apparent temperature experienced by the human body.

Heat Index values should be considered together with:

- Solar radiation
- Radiant heat
- Wind speed
- Physical workload
- Required personal protective equipment
- Employee acclimatization

The United States Occupational Safety and Health Administration (OSHA) has published a proposed heat injury and illness prevention regulation. The following heat triggers are established in the proposed rule:

- Initial heat trigger: heat index of 80 degrees Fahrenheit
- High heat trigger: heat index of 90 degrees Fahrenheit

OSHA's proposed rule excludes short duration employee exposures at or above the initial heat trigger of 15 minutes or less in any 60-minute period as well as sedentary work activities at indoor work areas that only involve some combination of sitting, occasional standing and walking for brief periods of time (e.g., walking to the restroom or copier), and occasional lifting of objects weighing less than 10 pounds.

5.5 High-Risk Employee

An employee whose risk of heat illness may be increased because of one or more factors, including:

- Recent return from extended absence
- New employee not yet acclimatized
- Heavy physical workload
- Medical conditions affecting thermoregulation
- Certain prescription medications
- Advanced age
- Previous history of heat illness

Employees are not required to disclose personal medical information to supervisors; however, supervisors should encourage employees to report any condition that may require additional precautions.

5.6 Heat Safety Coordinator

The supervisor, foreman, crew leader, or other designated individual responsible for implementing heat mitigation measures for a specific work activity.

5.7 Engineering Controls

Methods used to reduce employee exposure by modifying the work environment, including ventilation, fans, shade structures, mechanical lifting devices, cooling equipment, or other physical controls.

5.8 Administrative Controls

Management practices intended to reduce employee exposure, including:

- Work scheduling
- Task rotation
- Rest breaks
- Hydration requirements
- Reduced workloads
- Acclimatization schedules
- Employee monitoring

6.0 ROLES AND RESPONSIBILITIES

6.1 Associate Vice President for Facilities

The Associate Vice President shall:

- Establish departmental expectations for heat illness prevention.
- Provide adequate resources to support implementation of this procedure.
- Ensure departments maintain appropriate staffing and equipment necessary to reduce heat-related hazards.
- Support continuous improvement based on incident reviews and changing regulatory guidance.

6.2 Directors

Directors shall:

- Ensure this procedure is implemented within their respective departments.
- Establish operational expectations for heat preparedness.
- Ensure supervisors receive appropriate training.
- Allocate resources necessary to provide hydration, shade, cooling equipment, and employee protection.
- Review operational impacts during periods of elevated heat.
- Coordinate with Occupational and Environmental Safety regarding significant heat-related incidents.

6.3 Managers and Assistant Directors

Managers shall:

- Monitor seasonal forecasts and anticipated periods of elevated heat.
- Ensure work schedules are modified when appropriate.
- Confirm adequate staffing to permit work/rest cycles.
- Ensure employees have access to potable drinking water and suitable recovery areas.
- Verify employees returning from extended absences are appropriately acclimatized.
- Review heat-related incidents and implement corrective actions.

6.4 Supervisors

Supervisors have primary responsibility for implementing this procedure in the field.

Supervisors shall:

- Evaluate anticipated heat conditions before beginning work.
- Consider heat index, humidity, radiant heat, workload, PPE requirements, and employee acclimatization when planning work.
- Conduct pre-job safety discussions addressing anticipated heat hazards.
- Modify work schedules whenever practical to reduce exposure during peak heat.
- Schedule strenuous work during cooler portions of the day whenever operationally feasible.
- Ensure employees have continuous access to potable drinking water.
- Encourage frequent hydration before employees become thirsty.
- Establish shaded or cooled recovery areas whenever practical.
- Encourage employees to take preventive rest breaks whenever needed.
- Observe employees for early signs of heat-related illness.
- Utilize buddy systems whenever practical.
- Maintain effective communication with employees working alone or in remote locations.
- Immediately initiate emergency response procedures whenever heat stroke is suspected.
- Document heat-related incidents in accordance with University reporting requirements.

6.5 Employees

Employees are responsible for actively participating in heat illness prevention by:

- Reporting fit for duty.
- Drinking adequate fluids before and throughout the workday.
- Following acclimatization guidance.
- Wearing appropriate clothing and PPE.
- Taking authorized recovery breaks.
- Monitoring themselves and coworkers for signs of heat illness.
- Promptly reporting symptoms of heat stress to their supervisor.
- Immediately seeking assistance if symptoms develop.
- Participating in required training.

Employees shall never hesitate to stop work and notify supervision whenever they believe heat conditions present an immediate danger to themselves or others.

6.6 Occupational and Environmental Safety

Occupational and Environmental Safety shall provide technical assistance regarding:

- Heat hazard assessments
- Training resources
- Regulatory interpretation
- Incident investigations
- Program evaluation
- Recommendations for continuous improvement

7.0 HEAT STRESS HAZARD ASSESSMENT AND PREVENTION

7.1 General

University Facilities supervisors shall evaluate environmental conditions before and throughout work activities whenever employees may be exposed to elevated temperatures, radiant heat, high humidity, or strenuous physical activity. Heat stress prevention measures shall be implemented whenever conditions indicate an increased risk of heat-related illness.

Heat stress risk is influenced by numerous factors, including:

- Air temperature and heat index
- Relative humidity
- Direct sunlight and radiant heat
- Wind speed and air movement
- Duration and intensity of physical work
- Use of personal protective equipment
- Employee acclimatization
- Individual medical or physical risk factors

Supervisors shall continuously monitor changing weather conditions and adjust work practices whenever environmental conditions increase the likelihood of heat illness.

8. HEAT STRESS PREVENTION MEASURES

The primary methods of preventing heat-related illness include engineering controls, administrative controls, work practices, employee education, and personal protective measures. No single control is sufficient under all conditions; multiple controls should be implemented as conditions warrant.

8.1 Engineering Controls

Whenever practical, engineering controls shall be used to reduce employee exposure to excessive heat. Examples include:

- Increasing natural or mechanical ventilation
- Using portable fans to improve air movement where appropriate

- Providing shaded work areas or temporary shelters
- Reducing radiant heat through reflective barriers or insulation
- Utilizing mechanical equipment to reduce physical exertion
- Providing cooled or air-conditioned recovery areas for rest breaks

Engineering controls should be considered before relying solely on administrative or personal protective measures.

8.2 Administrative Controls

Supervisors shall adjust work schedules and assignments to reduce heat exposure whenever practical. Administrative controls may include:

- Scheduling strenuous outdoor work during cooler morning hours.
- Rotating employees between high-heat and lower-heat tasks.
- Increasing the frequency and duration of recovery breaks.
- Limiting overtime during periods of excessive heat.
- Reducing work pace when environmental conditions warrant.
- Suspending non-essential outdoor work when conditions present unacceptable risk.

Whenever feasible, employees should work in pairs or be monitored periodically so signs of heat illness can be recognized early. Employees working alone shall maintain reliable communication with their supervisor or designated contact.

8.3 Hydration

Maintaining adequate hydration is essential for preventing heat-related illness.

Employees shall:

- Begin work properly hydrated.
- Drink water frequently throughout the workday rather than waiting until they become thirsty.
- Increase water consumption during periods of heavy sweating.
- Use electrolyte replacement beverages during prolonged or strenuous work when appropriate.
- Avoid excessive consumption of alcohol or beverages that may contribute to dehydration.

Supervisors shall ensure cool potable drinking water is readily available at all work locations where heat exposure exists and shall encourage employees to drink frequently throughout the shift.

8.4 Rest and Recovery

Employees shall be provided opportunities to cool down before symptoms of heat illness develop.

Depending upon environmental conditions and work intensity, supervisors may implement:

- Additional shaded or air-conditioned recovery periods
- More frequent work-rest cycles
- Temporary reduction in workload
- Temporary reassignment to lower heat exposure tasks

Employees shall immediately notify their supervisor whenever they begin experiencing symptoms of heat stress and shall stop work until evaluated.

8.5 Acclimatization

Employees who are new to hot work environments or who have been away from heat exposure for an extended period require time to gradually adapt to working in elevated temperatures.

Supervisors shall gradually increase work duration and workload over several days to allow proper acclimatization.

As a general guideline:

- New employees should gradually increase heat exposure over approximately four to seven days.
- Employees returning after an absence of two weeks or longer should also follow a graduated return to heat exposure.

Employees undergoing acclimatization shall receive increased observation for signs of heat illness, particularly during the first several days of exposure.

8.6 Clothing and Personal Protective Equipment

Employees should wear lightweight, breathable clothing whenever work requirements permit.

Where personal protective equipment increases heat retention, supervisors shall consider additional protective measures including:

- Increased rest periods
- More frequent hydration
- Reduced work duration
- Cooling garments or cooling vests when appropriate

Selection of PPE shall continue to satisfy all applicable safety requirements while recognizing the additional heat burden imposed by protective equipment.

9. RECOGNITION OF HEAT-RELATED ILLNESSES AND EMERGENCY RESPONSE

9.1 General

Employees and supervisors shall remain alert for signs and symptoms of heat-related illness whenever work is performed in elevated temperatures. Early recognition and prompt intervention are critical to preventing minor heat-related conditions from progressing to life-threatening emergencies.

Any employee who experiences symptoms of heat-related illness shall immediately notify their supervisor or coworker, stop work, and move to a cooler location for evaluation. Employees shall never be discouraged from reporting symptoms or requesting a recovery period.

Supervisors shall ensure employees exhibiting signs of heat stress are not permitted to resume work until they have adequately recovered or have been medically evaluated, as appropriate.

9.2 Heat-Related Illnesses

Heat-related illnesses exist on a continuum ranging from mild discomfort to medical emergencies. Common conditions include:

Heat Rash

Heat rash is caused by blocked sweat ducts and commonly develops during prolonged exposure to hot, humid environments. Symptoms include clusters of small red bumps accompanied by itching or skin irritation.

Treatment generally consists of moving to a cooler environment, keeping the affected area dry, and avoiding additional heat exposure until symptoms improve.

Heat Cramps

Heat cramps are painful muscle spasms that typically occur following heavy physical exertion and excessive sweating. They commonly affect the legs, arms, shoulders, or abdomen and may indicate significant fluid and electrolyte loss.

Employees experiencing heat cramps shall:

- Stop work immediately.

- Move to a shaded or cooled location.
- Drink water or an electrolyte replacement beverage.
- Gently stretch and rest the affected muscles.

Employees shall not resume strenuous activity until cramping has completely resolved.

Heat Syncope

Heat syncope is a temporary loss of consciousness or dizziness caused by reduced blood flow to the brain during heat exposure. It frequently occurs after prolonged standing or when rising quickly from a seated or kneeling position.

Employees experiencing dizziness or fainting shall be moved to a cool location, placed in a position that promotes blood flow, and evaluated before returning to work.

Heat Exhaustion

Heat exhaustion is a serious heat-related illness resulting from excessive fluid and salt loss through sweating. Symptoms may include:

- Heavy sweating
- Weakness or fatigue
- Headache
- Nausea or vomiting
- Dizziness or lightheadedness
- Cool, pale, or clammy skin
- Rapid pulse
- Muscle cramps

Employees exhibiting signs of heat exhaustion shall:

- Stop work immediately.
- Move to a shaded or air-conditioned location.
- Remove excess clothing or PPE when safe to do so.
- Cool the individual using fans, cool water, or wet towels.
- Drink cool water if fully conscious and able to swallow.
- Be continuously observed for worsening symptoms.

If symptoms do not improve promptly or worsen, emergency medical services shall be contacted.

Heat Stroke

Heat stroke is a life-threatening medical emergency requiring immediate intervention.

Symptoms may include:

- Altered mental status or confusion
- Loss of consciousness
- Seizures
- Hot skin with or without sweating
- Very high body temperature
- Slurred speech
- Loss of coordination

Any employee suspected of experiencing heat stroke shall be treated as a medical emergency.

9.3 Emergency Response

When heat stroke or another serious heat-related illness is suspected, employees shall:

1. Immediately call 911.
2. Notify their supervisor as soon as practical.
3. Move the individual to a shaded or air-conditioned location.
4. Begin aggressive cooling measures while awaiting emergency responders, including:
 - a. Removing unnecessary outer clothing and PPE.
 - b. Applying cool water to the skin.
 - c. Using fans to increase evaporative cooling.
 - d. Placing cool, wet towels or ice packs on the neck, armpits, and groin when available.
5. Continue monitoring the individual's condition until emergency medical personnel arrive.

Employees shall not provide food or fluids to an unconscious, confused, or semiconscious individual.

If the individual stops breathing or has no pulse, trained personnel shall begin CPR and use an automated external defibrillator (AED), if available, until relieved by emergency responders.

9.4 Reporting and Follow-Up

All heat-related illnesses requiring first aid beyond self-care, medical treatment, emergency response, or resulting in lost work time shall be reported in accordance with University Facilities incident reporting procedures.

Supervisors shall review each heat-related incident to determine contributing factors and identify opportunities to improve work planning, training, hydration practices, acclimatization, or other preventive measures. Corrective actions shall be implemented when appropriate to reduce the likelihood of recurrence.

10.0 TRAINING

10.1 General

University Facilities shall provide training to employees and supervisors whose work activities may expose them to elevated temperatures or other conditions that increase the risk of heat-related illness. Training shall ensure personnel understand the hazards associated with heat exposure, recognize the signs and symptoms of heat-related illnesses, and know the preventive measures and emergency response procedures outlined in this procedure.

Heat stress training shall be provided:

- Before employees are assigned work involving potential heat exposure.
- When employees are assigned new duties or work environments that present different heat-related hazards.
- Whenever significant changes are made to this procedure or heat illness prevention practices.
- Periodically, as determined by Occupational and Environmental Safety (OES) or University Facilities management, to reinforce heat illness prevention principles.

10.2 Employee Training

Employee training shall include, at a minimum:

- The causes and risk factors associated with heat-related illness.
- Environmental and personal factors that increase heat stress risk.
- The importance of hydration, rest, shade, and acclimatization.
- Safe work practices for reducing heat exposure.
- Recognition of the signs and symptoms of heat-related illnesses.
- Procedures for reporting symptoms in themselves or coworkers.
- Emergency response procedures, including when and how to summon emergency medical assistance.
- The importance of immediately reporting heat-related concerns without fear of retaliation or disciplinary action.

Employees are expected to actively participate in heat illness prevention by monitoring their own condition, watching for signs of heat stress in coworkers, and promptly communicating concerns to their supervisor.

10.3 Supervisor Training

Supervisors shall receive training that includes employee training topics as well as additional instruction on:

- Identifying work activities and environmental conditions that present elevated heat stress risks.
- Monitoring weather conditions and heat indices before and during work activities.
- Implementing engineering, administrative, and work practice controls.
- Managing employee acclimatization, particularly for new and returning employees.
- Adjusting work schedules, staffing, and recovery periods based on changing environmental conditions.
- Recognizing when employees require medical evaluation or emergency medical services.
- Conducting incident reviews and implementing corrective actions following heat-related illnesses or near misses.

Supervisors are responsible for ensuring preventive measures are implemented, employees have access to drinking water and recovery areas, and work activities are modified or suspended when conditions present an unacceptable risk.

10.4 Documentation

Training shall be documented in accordance with University Facilities and Occupational and Environmental Safety training record requirements. Documentation should include:

- Training date.
- Subject matter covered.
- Name of the instructor or training provider.
- Names of employees who attended.

Training records shall be maintained in accordance with applicable University record retention requirements.

Appendix A – Heat Stress Prevention Responsibility Matrix

<i>Activity</i>	<i>Employees</i>	<i>Supervisors</i>	<i>Directors/Managers</i>	<i>OES</i>
Complete required heat stress training	✓	✓	✓	Develop/provide guidance
Monitor weather and heat conditions		✓	✓	Provide technical guidance
Assess heat hazards before work		✓	✓	Assist as requested
Ensure drinking water is available		✓	✓	
Provide shade and recovery areas		✓	✓	
Adjust work schedules and work/rest cycles		✓	✓	Provide recommendations
Implement acclimatization practices		✓	✓	Provide guidance
Use safe work practices and stay hydrated	✓			
Monitor yourself and coworkers for signs of heat illness	✓	✓		
Report symptoms or unsafe conditions	✓	✓		
Respond to heat-related illness and initiate emergency procedures	✓	✓		Provide post-incident assistance as needed
Report heat-related incidents	✓	✓	✓	Review trends and provide recommendations
Review program effectiveness and implement improvements		✓	✓	Assist with program evaluation

RESPONSIBILITY KEY

Employees

- Follow heat stress prevention practices.
- Maintain hydration and report symptoms immediately.
- Watch for signs of heat illness in coworkers.
- Participate in required training.

Supervisors

- Evaluate heat hazards and implement appropriate controls.
- Ensure water, shade, and recovery opportunities are available.
- Monitor employees for signs of heat illness.
- Modify or suspend work when conditions warrant.
- Respond to incidents and complete required reporting.

Directors/Managers

- Ensure resources are available to implement the Heat Stress Prevention Program.
- Support supervisors in modifying operations during periods of elevated heat risk.
- Monitor program compliance and corrective actions.

Occupational and Environmental Safety (OES)

- Provide technical guidance on heat stress prevention.
- Assist with training materials and regulatory compliance.
- Review heat-related incidents and recommend program improvements.
- Periodically review the effectiveness of the Heat Stress Prevention Program.