

## Heat Illness Prevention and Management

***This fact sheet discusses heat stress exposure risk, signs and symptoms, recommended response and illness prevention.***

As global temperatures rise and extreme-heat events become more frequent, it's essential for employers and their employees to take precautions to prevent heat-related illnesses. Anyone can suffer the effects of heat stress. People with higher-than-average exposure risk include those who:

- Have not had a chance to acclimatize
- Do strenuous activities in hot/humid conditions
- Wear heavy protective clothing and equipment
- Have an underlying medical condition, such as hypertension
- Are overweight or obese
- Are older and have heat intolerance
- Are taking certain medications (refer to our related [fact sheet](#))

Employees in construction trades, firefighting, recreation and food services, utilities, agriculture, grounds maintenance, and oil and gas production are among those who are more likely to experience heat-induced illnesses. Examples of at-risk occupations also include mining, environmental hazard abatement and manufacturing with heat-generated processes.

### Recognizing Heat-related Illnesses

Leading contributors to the development of heat stress are water loss (dehydration), salt loss and the “heat-battery effect,” which is remedied by using ice or cold water to lower body temperature. This trio is explained in a blog post on [Heat Stress Prevention for Regular People](#) by WorkCare Senior Vice President John Longphre, M.D., M.P.H. While hydration is typically emphasized, he recommends taking all three factors into consideration.

Heat stress can occur when dehydration and elevated body temperature intersect. Sweating helps the body dispel heat. About 60 percent of the body is water by weight; about 73 percent of the brain is water. Even a 2 percent loss of water through sweating can impair physical and cognitive function.



Heat-related illnesses range in severity from mild skin irritation to potentially fatal heat stroke. Table 1 on Page 3 lists symptoms and how to respond to them.

### Prevention

Employees with indoor and outdoor heat exposure are advised to:

- Drink sips of water every 15 minutes
- Replace salt and other chemicals lost while sweating with beverages containing electrolytes
- Take frequent rest breaks in a shady place or air-conditioned indoor area
- Cool their body with water mist, ice or wet cloths
- Use the buddy system to limit overexertion and monitor each other for symptoms
- Outdoors, wear head and neck protection, loose clothing and sunscreen
- Do the most strenuous tasks during cooler times of the day or at night

Employers should be prepared to:

- Allow time for acclimatization and gradually increase workload
- Have cool, fresh drinking water readily available at jobsites

- Incorporate work/rest cycles and job rotation to reduce heat exposure
- Provide places where employee can rest, rehydrate and cool off
- Provide thorough training on heat illness prevention and response

Engineering controls may be used to help reduce heat exposure, for example, air conditioning, cooling fans and ventilation systems; reflective shields to redirect radiant heat; insulation of hot surfaces; and preventing steam leaks. Employers may also need to supply protective gear such as insulated or reflective clothing or suits equipped with a self-contained air conditioner or compressed air source.

WorkCare's occupational health clinicians and industry subject matter experts are available to consult on workplace heat hazard reduction strategies and response to symptoms. .

Contact us at [info@workcare.com](mailto:info@workcare.com).



**The federal Occupational Safety and Health Administration (OSHA) released its proposed [workplace heat standard](#) on July 2, 2024, with the intention to solicit public comments as part of the rulemaking process. If enacted, [proposed amendments to Part 1910 – Occupational Safety and Health Standards](#) are expected to substantially decrease heat exposure risk for about 36 million U.S. employees.**

The proposed rule would require employers to develop a comprehensive heat-related injury and illness prevention plan that includes:

- Methods for heat exposure risk assessments
- Policies for adequate hydration and rest breaks
- Measures to control indoor heat
- Acclimatization periods for new/returning employees
- Training on heat illness prevention, signs and symptoms
- Procedures for emergency and first-aid response

The standard would generally apply to all industries. However, certain workplaces would be exempt, for example, if there is no reasonable expectation of exposure above an initial high-

heat trigger of 90°F; when exposure duration would be less than 15 minutes in a 60-minute period; and when employees are involved in firefighting or work in air-conditioned and/or sedentary indoor environments.

Pending adoption of the standard, OSHA said it will continue to hold businesses accountable for heat-related violations of the Occupational Safety and Health Act's general duty clause 29 U.S.C. § 654(a)(1) and other applicable regulations. The agency also plans to continue heat-related inspections under its [National Emphasis Program – Outdoor and Indoor Heat-Related Hazards](#), which targets workplaces with high heat exposure risks. In addition, it has prioritized programmed inspections in agricultural industries that employ temporary, nonimmigrant H-2A workers for seasonal labor.

California, Colorado, Minnesota, Oregon and Washington have adopted their own workplace standards to help prevent heat illness. In conjunction with the release of the proposed OSHA standard, the [Biden Administration announced actions](#) being taken to help protect workers and communities from extreme weather threats.

This table features heat-related symptoms and recommended first-aid measures.\*

Illness	Symptoms	First Aid*
<b>Heat stroke</b>	<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>
<b>Heat exhaustion</b>	<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>
<b>Heat cramps</b>	<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>

\*Consult with medical professionals to ensure employees receive appropriate care. WorkCare provides 24/7 telehealth triage and places clinical staff onsite to manage work-related injuries and illnesses at onset.

Source: [Occupational Safety and Health Administration Heat-related Illnesses and First Aid](#).