

REFERENCE GUIDE

A Loss Control Service from Donegal Insurance Group



Heat-Related Disorders

Introduction

Any process, task, or environment that raises employees core temperatures above 100.4 degrees F increases the risk of heat stress. Facilities with no air conditioning, operations involving high air temperatures, high humidity, additional heat sources, direct physical contact with hot objects, and strenuous physical activity that limits an employee's opportunity to cool their body temperature throughout the day increase heat stress exposure. Risk of heat illness is significant enough that the Occupational Safety and Health Administration (OSHA) has launched a focused campaign to reduce the incidence of heat illness. OSHA considers lack of controls a potential occupational illness/injury hazard to be reviewed and enforced during workplace visits.



Factors leading to heat-related illnesses include, but are not limited to:

- A combination of high temperature and humidity
- Low fluid consumption
- Limited movement of air or circulation of air within facilities
- Wearing protective clothing for prolonged periods of time
- Poor physical condition
- Age (older individuals are more susceptible)
- Medications
- Lack of acclimatization to a hotter-than-normal climate
- Wearing clothing that holds in body heat

Types of Heat Illness

Heat stroke, the most serious heat-related disorder, is a *medical emergency that may result in DEATH*. In such cases, the body's temperature regulating system has failed and internal temperature is generally greater than 104F. Symptoms generally include confusion, seizures, unconsciousness and/or lack of perspiration. If these signs exist, immediately call 911. According to both NIOSH (National Institute for Occupational Safety & Health) and OSHA, prior to arrival of medical personnel, move the individual to a shaded or cooler area. Next, remove the individual's outer clothing and place cool to cold wet clothes or towels loosely on the body, especially at the wrists and neck. Such actions may help to normalize body temperature.

Heat exhaustion is generally characterized by headache, nausea, dizziness, weakness, confusion, extreme thirst and/or heavy sweating. Body temperature generally will exceed 100F. Should a worker suffer such symptoms, OSHA suggests moving the individual to a shaded or air conditioned environment and increase the worker's hydration by providing frequent small sips of water or a combination of water and electrolytes (such as a sports drink). To promote a reduction of body temperature, remove shoes and socks and apply cool/cold compresses to the worker's forehead, wrists and back of neck.

Heat cramps (muscle pain) are caused by physical overexertion in a hot work environment. Such pain is caused by the loss of body salts/electrolytes during perspiration. According to OSHA, individuals experiencing heat cramps should seek or create shade and begin electrolytic fluid intake every 15-20 minutes.

Heat rash is generally the least dangerous condition, but the most common. Reddish pimples or small blisters may appear on the neck, upper chest, groin and elbow creases. OSHA recommends moving the individual to a cooler environment and apply medicated powders (no creams or ointments). Activity that makes skin warm and moist will make the rash worse. To help avoid this, wear light-colored, loose-fitting clothing.

To Reduce the Risk of Heat Stress (that can lead to Heat Illnesses):

- Monitor the weather conditions to know the time of day that presents the greatest risk for heat exposure. This can be done through a Heat Index app developed by NIOSH and OSHA that is available to everyone.
- If possible, schedule the most physically-demanding tasks during cooler parts of the day.
- Schedule 10-15 minute rest periods during the hottest part of the day.
- Provide for shaded or air-conditioned recovery area.
- Train supervisors and managers that heat stress can be dangerous and to recognize the signs and symptoms of heat-related illnesses.
- Wear loose-fitting clothing and a wide-brim hat when working outside. Protect the back of your neck from direct sunlight.
- Cool indoor work areas by using portable air conditioning units or fans running at moderate air speed.
- Allow new workers to gradually increase tolerance to working in warmer environments over a period of 1 to 2 weeks. Workers returning to a hot environment still need to re-acclimate by gradually increasing workloads for a period of 4-5 days.
- Provide workers with access to plenty of water. Encourage drinking before the start of the workday and at least a pint per hour during the shift. Instruct employees to check the color of their urine, which normally should be clear or lightly colored if one is adequately hydrated.
- Use mechanical devices rather than using physical labor to move or lift objects.
- Monitor closely employees who wear protective clothing or respirators. Establish a schedule of 'Work-Rest' periods with the assistance of a medical provider, industrial hygienist or other professional versed in the health effects of heat related illnesses.

Activities to Avoid (According to OSHA and NIOSH):

- Don't drink caffeinated products including sodas, coffee and tea prior to going to work and during work hours. Such beverages may cause loss of fluids.
- Avoid exposure of your skin or head to direct sunlight over a prolonged period of time.
- Work during the hottest part of the day without rest breaks in a shaded area (businesses should consider allowing frequent rest breaks in shaded areas on extreme heat days). Reference OSHA's Occupational Heat Exposure site at OSHA.gov.

References & Additional Information

OSHA has a [Heat Safety Tool](#), a Smartphone application that calculates the heat index and provides reminders about protective measures.

[OSHA Overview: Working in Outdoor and Indoor Heat Environments](#)

[OSHA Prevention: Protecting New Workers](#)

Other heat illness information may be found at www.osha.gov/heat and www.cdc.gov/niosh/topics/heatstress



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