

University of Rochester

Heat Stress Guidelines

OS-G008

Purpose:

This document is intended to raise employee awareness regarding the risks associated with exposure to hot temperatures. It is also intended to inform employees on how to prevent exposures to these conditions. For the purpose of this guideline, hot temperatures means a long period of high heat and humidity with temperatures above 90 degrees. In extreme heat, evaporation is slowed and the body must work extra hard to maintain a normal temperature.

Scope:

Each year, thousands of outdoor workers experience heat illness, which often manifests as heat exhaustion. If not quickly addressed, heat exhaustion can become heat stroke. Between 2015 and 2019, environmental heat cases resulted in an average of 35 fatalities per year and an average of 2,700 cases with days away from work. Heat illnesses and deaths are preventable.



Symptoms of heat exhaustion include:

- Confusion
- Dark-colored urine (a sign of dehydration)
- Dizziness
- Fainting
- Fatigue
- Headache
- Muscle or abdominal cramps
- Nausea, vomiting or diarrhea
- Pale skin
- Profuse sweating
- Rapid heartbeat

Symptoms of heat stroke include:

- Core body temperature above 104 degrees Fahrenheit or fainting may be the first sign.
- Throbbing headache
- Dizziness and light-headedness
- Lack of sweating despite the heat
- Red, hot, and dry skin
- Muscle weakness or cramps
- Nausea and vomiting
- Rapid heartbeat, which may be either strong or weak
- Rapid, shallow breathing
- Behavioral changes such as confusion, disorientation, or staggering
- Seizures
- Unconsciousness

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If you see someone experiencing heat exhaustion or heat stroke:

- **Call x13 or 911 immediately in an emergency; otherwise seek medical assistance as soon as possible.**

Treatment for Heat Exhaustion

If you, or anyone else, has symptoms of heat exhaustion, it's essential to immediately get out of the heat and rest, preferably in an air-conditioned room. If you can't get inside, try to find the nearest cool and shady place.

Other recommended strategies include:

- Drink plenty of fluid (avoid caffeine and alcohol).
- Remove any tight or unnecessary clothing.
- Take a cool shower, bath, or sponge bath.
- Apply other cooling measures such as fans or ice towels.

If such measures fail to provide relief within 15 minutes, seek emergency medical help, because untreated heat exhaustion can progress to heat stroke.

First Aid for Heat Stroke

If you suspect that someone has a heat stroke, immediately call x13 or 911 or transport the person to a hospital. Any delay seeking medical help can be fatal.

While waiting for the paramedics to arrive, initiate first aid. Move the person to an air-conditioned environment -- or at least a cool, shady area -- and remove any unnecessary clothing.

If possible, take the person's core body temperature and initiate first aid to cool it to 101 to 102 degrees Fahrenheit. (If no thermometers are available, don't hesitate to initiate first aid.)

Try these cooling strategies:

- Fan air over the patient while wetting his or her skin with water from a sponge or garden hose.
- Apply ice packs to the patient's armpits, groin, neck, and back. Because these areas are rich with blood vessels close to the skin, cooling them may reduce body temperature.
- Immerse the patient in a shower or tub of cool water.
- If the person is young and healthy and suffered heat stroke while exercising vigorously -- what's known as exertional heat stroke -- you can use an ice bath to help cool the body.

Guidelines:

To prevent Heat Stress:

When the heat index is high, it's best to stay in an air-conditioned environment. If you must go outdoors, you can prevent heat stress by taking these steps:

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- Wear lightweight, light-colored, loose-fitting clothing, and a wide-brimmed hat.
- Use a sunscreen with a sun protection factor (SPF) of 30 or more.
- Drink extra fluids. To prevent dehydration, it's generally recommended to drink at least eight glasses of water, fruit juice, or vegetable juice per day. Because heat-related illness also can result from salt depletion, it may be advisable to substitute an electrolyte-rich sports drink for water during periods of extreme heat and humidity.
- Avoid caffeine and alcohol as these can contribute to dehydration.
- Take additional precautions when exercising or working outdoors. The general recommendation is to drink 24 ounces of fluid two hours before exercise, and consider adding another 8 ounces of water or sports drink right before exercise. During exercise, you should consume another 8 ounces of water every 20 minutes, even if you don't feel thirsty.
- Reschedule or cancel outdoor activity. If possible, shift your time outdoors to the coolest times of the day, either early morning or after sunset.
- If you are a supervisor, increase your site visits to make sure your employees are staying hydrated and provided frequent rest breaks.

- Monitor the color of your urine. Darker urine is a sign of dehydration. Be sure to drink enough fluids to maintain very light-colored urine.

Administration:

Additional Resources

<https://www.cdc.gov/niosh/topics/heatstress/infographic.html>

<https://www.webmd.com/fitness-exercise/heat-exhaustion#1>

<https://www.webmd.com/a-to-z-guides/heat-stroke-symptoms-and-treatment#3>

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