

Heat Illnesses

Tailgate Safety Talk

Heat stress is a problem in our industry, and not just because there's no thermostat outside. The other reason is because we tend to be a stubborn, determined lot. For the most stubborn among us, that makes heat stress dangerous. The Centers for Disease Control and Prevention (CDC) reports that an average of 658 people die of extreme heat illnesses per year, so let's understand what it is and what we can do about it.

Forms of Heat Stress

- **Heat Rash.** This is a skin irritation caused by excessive sweating during hot, humid weather.
- **Heat Cramps.** These are most common for people who sweat a lot during strenuous activity. This depletes the body's salt and moisture levels, and a low salt level in muscles causes painful cramps. Heat cramps may also be a symptom of heat exhaustion.
- **Heat Syncope.** This is a fainting (syncope) episode or dizziness that usually occurs with prolonged standing or sudden rising from a sitting or lying position. Factors that may contribute to heat syncope include dehydration and lack of acclimatization.
- **Rhabdomyolysis.** This is a medical condition combining heat stress and prolonged physical exertion, resulting in the rapid breakdown, rupture, and death of muscle. When muscle tissue dies, electrolytes and large proteins are released into the bloodstream that can cause irregular heart rhythms and seizures, along with damage to the kidneys.
- **Heat Exhaustion.** This is the body's response to an excessive loss of water and salt, usually through excessive sweating. People most prone to heat exhaustion are the elderly, those with high blood pressure, and those working in a particularly hot environment.
- **Heat Stroke.** The most serious heat-related illness, heat stroke is when the body is no longer able to control its temperature. The body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. Body temperature can rise to 106°F or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability if emergency treatment is not given.

Symptoms and first aid suggestions from the CDC are listed for each of these in the table below. As you can see, heat stress can range from the irritating and annoying to the most serious consequences and it is nothing to be messed with. Because heat stroke can come on quite suddenly and escalate quickly, make sure it is on everyone's mind on the hotter and stickier days of summer.

Notice that one of the recurring elements in these illnesses relate to lack of acclimation to the heat conditions or the activity itself. So think about some factors that may take you to "orange alert":

- Sudden increase in temperature, humidity, or "heat index" from past days.
- Activity that demands prolonged standing, particularly without adequate shade.
- New activity with greater exertion than in past days.

	Symptoms	First Aid
Heat Rash	Looks like red cluster of pimples or small blisters Usually appears on the neck, upper chest, groin, under the breasts, and in elbow creases	Cooler, less humid work environment is best treatment Keep rash area dry Powder may be applied to increase comfort Ointments and creams should not be used Drink water and have a snack and/or carbohydrate-electrolyte replacement liquid (e.g., sports drinks) every 15 to 20 minutes Avoid salt tablets
Heat Cramps	Muscle cramps, pain, or spasms in the abdomen, arms, or legs	Get medical help if the person has heart problems, is on a low sodium diet, or if cramps do not subside within 1 hour Sit or lie down in a cool place Slowly drink water, clear juice, or a sports drink
Heat Syncope	Fainting (short duration) Dizziness Light-headedness during prolonged standing or suddenly rising from a sitting or lying position	Stop activity Increase oral hydration (water preferred) Seek immediate care at the nearest medical facility Ask to be checked for rhabdomyolysis (i.e., blood sample analyzed for creatine kinase)
Rhabdomyolysis	Muscle cramps/pain Abnormally dark (tea or cola colored) urine Weakness Exercise intolerance Can be asymptomatic	Take person to a clinic or emergency room for medical evaluation and treatment If medical care is unavailable, call 911 Someone should stay with worker until help arrives Remove person from hot area and give liquids to drink Remove unnecessary clothing, including shoes and socks Cool the person with cold compresses or have the person wash head, face, and neck with cold water Encourage frequent sips of cool water
Heat Exhaustion	Headache Nausea Dizziness Weakness Irritability Thirst Heavy sweating Elevated body temperature Decreased urine output	Call 911 for emergency medical care Stay with person until emergency medical services arrive Move the person to a shaded, cool area and remove outer clothing Cool the person quickly with a cold water or ice bath if possible; wet the skin, place cold wet cloths on skin, or soak clothing with cool water Circulate the air around the person to speed cooling Place cold wet cloths or ice on head, neck, armpits, and groin; or soak the clothing with cool water
Heat Stroke	Confusion, altered mental status, slurred speech Loss of consciousness Hot, dry skin or profuse sweating Seizures Very high body temperature Rapid, strong pulse	

Perhaps the best defense against heat stresses developing or escalating to dangerous levels is for everyone on the crew to be aware of the symptoms and the kinds of weather and activities that are most likely to invite them in. Posters like those shown (and hyperlinked) here, can be printed and posted in break rooms and other areas to supplement this tailgate talk.

When temperatures are on the rise and humidity is following along behind it, consider the OSHA-NIOSH Heat Safety Tool [App](#) (free download from the Apple or Google app stores). You can monitor the current heat index and risk levels in your area, as well as some forecasting. Finally, the app has some basic symptoms and first aid guides, in case you forgot.

Beyond awareness, there are some simple things to ward off heat stress injuries.

- Drink lots of water – early and often
- Wear light-colored, lightweight, loose-fitting clothing if your activities allow it...and a hat
- Wear sun screen and re-apply throughout the exposure
- Move activities to the shade, if you are able
- Take rest periods
- Slow it down a bit
- Keep an eye on each other – don't be afraid to ask – “you okay?”
- Attempt to delay strenuous activities to coolest parts of the day or even a later date when it is cooler
- Be mindful of activities that require standing in place for extended periods
- Acclimate to strenuous activities over days or even weeks

Like many safety risks, awareness of the threat and a little preparation in case it comes along can go a long way. So watch the weather forecast for the next several days, anticipate the most threatening days, and plan your activities accordingly, if you can. Beyond that, follow the best practices above and watch out for each other. If someone doesn't look right and you're not sure, call 911, get them to the shade, and start cooling them down. Don't mess with the heat.

Prevent Heat Illness at Work
Outdoor and indoor heat exposure can be dangerous.

Ways to Protect Yourself and Others

Nearly 3 out of 4 fatalities from heat illness happen during the first week of work.

- ✓ New and returning workers need to build tolerance to heat (acclimatize) and take frequent breaks.
- ✓ Follow the 20% Rule. On the first day work no more than 20% of the shift's duration at full intensity in the heat. Increase the duration of time at full intensity by no more than 20% a day until workers are used to working in the heat.

Things you need to know:

- Heat illness can strike quickly—learn to recognize the symptoms.
- Workers with heat illness should stop working, get cool, and drink fluids.
- Altered mental state can be a sign of heat stroke and requires immediate attention.
- When treating severe heat illness, cooling is the first priority.

HEAT STRESS First Aid for Heat Illness

Cooling is key. Know the symptoms and treatment of heat illness.

Signs and Symptoms
Symptoms can occur at any point. For example, a person will not always experience heat cramps before they suffer from heat exhaustion.

What to Do

Heat Rash/Prickly Heat

- When possible, a cooler, less humid work environment is the best treatment.
- Keep rash area dry.
- Powder can be applied to increase comfort.
- Do not use ointments or creams, as they may impair cooling—warm, moist skin can make the rash worse.

Heat Cramps

- Drink fluids every 15 to 20 minutes and eat a snack or sports drink.
- Avoid salt tablets.
- Get medical help if the worker has heart problems, is on a low sodium diet, or if cramps do not subside within 1 hour.

Heat Syncope (Fainting)

- Get or lie down in a cool place when beginning to feel faint or dizzy.
- Slowly drink water or clear juice.

Heat Exhaustion

- Call for medical help or take worker to a health facility for evaluation and treatment.
- Stay with worker until help arrives.
- Remove worker from heat area and give liquids to drink.
- Remove unnecessary clothing, including shoes and socks.
- Cool worker with water, cold compresses, an ice bath, or fans.
- Encourage frequent sips of cool water.

Heat Stroke

- This is an emergency! Call for emergency care immediately!
- Move worker to a cool area and remove outer clothing.
- Cool worker with water, cold compresses, an ice bath, or fans.
- Circulate air around worker to speed cooling.
- Place cold, wet cloths or ice on head, neck, armpits, and groin.
- Stay with worker until emergency medical services arrive.

for Heat Illness

I act quickly. When in doubt, call 911.

Take these actions:

- Give water to drink.
- Remove unnecessary clothing.
- Move to a cooler area.
- Cool with water, ice, or a fan.
- Do not leave alone.
- Seek medical care if needed.

For more information: 1-800-321-OSHA (6742)
TTY 1-877-589-5627 www.osha.gov/heat

Users of this tailgate talk are advised to determine the suitability of the information as it applies to local situations and work practices and its conformance with applicable laws and regulations.

