



Keep Your Cool: Preventing and Treating Heat Stress

by Langdon Dement

Memorial Day marks the unofficial start of the summer season in the United States. In many parts of the country, the heat and humidity is already in place. Workers in hot environments can be at risk for heat stress, which can lead to serious illness. Older workers, those with existing health conditions like high blood pressure, diabetes, and obesity, and those working strenuously or in direct sunlight are at greatest risk.

Types of Heat Stress:

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

Heat Stroke

Heat stroke is the most serious condition related to heat and should be considered a medical emergency. When the body becomes unable to control its temperature, the mechanism that controls sweating fails, the body is unable to cool down, and the core temperature rises quickly. When heat stroke occurs, body temperature can reach 106F or higher within 15 minutes. A temperature that high can result in death or permanent disability to the brain and internal organs without emergency treatment.

Symptoms of heat stroke include:

- Red, hot, dry skin
- Lack of sweating despite the heat
- Throbbing headache
- Nausea and vomiting
- Rapid heartbeat and rapid, shallow breathing
- Muscle weakness or cramps, dizziness and light-headedness
- Behavioral changes such as confusion or disorientation
- Unconsciousness





What to Do:

- Notify a supervisor and call 911 immediately.
- Move the sick worker to a cool, shaded, or air-conditioned location and remove unnecessary clothing.
- Cool the person by spraying, sponging, or showering with water, and by fanning his or her body.
- Apply ice packs to the armpits, groin, neck, and back. These areas have major blood vessels close to the skin and can help reduce blood temperature.
- If the person is conscious, give them cool water to drink.

Heat Exhaustion

Heat exhaustion occurs when the body loses too much water and salt through excessive sweating. It is usually caused by exposure to high temperatures, especially with high humidity, and strenuous activities. Heat exhaustion can turn into heat stroke without quick treatment.

Symptoms of heat exhaustion include:

- Heavy sweating or clammy, moist skin
- Rapid pulse and rapid, shallow breathing.
- Slightly elevated body temperature
- Weakness or fatigue
- Dizziness, confusion
- Nausea
- Pale or flushed complexion
- Muscle cramps

What to Do:

- Help the worker move to a cool, shaded, or air-conditioned area and let him or her rest.
- Provide plenty of water or other cool, nonalcoholic beverages.
- Help cool the person by spraying, sponging, or showering with water, and by fanning his or her body.
- Monitor temperature and symptoms and contact a doctor if they don't improve within an hour.

Heat Syncope

Heat syncope is a fainting episode or dizziness that can happen from prolonged standing or a sudden rise from sitting or lying down. Blood vessels in the body dilate to radiate heat, which lowers blood pressure.

Symptoms of heat syncope include:

- Light-headedness
- Dizziness
- Fainting



What to Do:

- Help the worker sit or lie down in a cool place when he or she begins to feel symptoms.
- Provide cool water, clear juice, or a sports beverage.
- If the person has fainted, evaluate for symptoms of head or other body injury.

Heat Cramps

Heat cramps are painful, involuntary muscle spasms that usually affect workers who sweat a lot during strenuous activity. This sweating depletes the body's electrolyte and moisture levels, which contribute to painful cramps. Heat cramps can be a symptom of heat exhaustion.

Symptoms of heat cramps include:

- Muscle pain or spasms usually in the abdomen, arms, or legs.

What to Do:

- Stop activity, and rest in a cool place.
- Drink clear juice or a sports beverage.
- Gently stretch or massage the cramping muscle.
- Do not work strenuously for a few hours after the cramps subside because further exertion may lead to heat exhaustion or heat stroke.
- Seek medical attention if the worker has heart problems or is on a low-sodium diet, or if cramps do not subside within one hour.

Heat Rash

Heat rash is a skin irritation caused by excessive sweating during hot, humid weather. It is also known as prickly heat. It occurs when skin ducts are blocked and perspiration is trapped beneath the skin.

Symptoms of heat rashes include:

- A cluster of red spots that look like pimples or small blisters. It is more likely to occur on the neck and upper chest, in the groin, under the breasts, and in elbow creases

Workers experiencing heat rash should:

- Try to work in a cooler, less humid environment when possible.
- Keep the affected area dry.
- Dusting powder may help decrease discomfort.

Preventing Heat Stress

Nobody can control the weather, but heat stress is preventable if employers and workers take proper precautions.

Employers should:

- Schedule routine maintenance and repair for cooler months.
- Schedule jobs in the morning or evening when the weather is cooler.
- Acclimatize workers by exposing them for progressively longer periods to hot work environments.



- Reduce the physical demands of workers.
- Use relief workers or assign extra workers for physically demanding jobs.
- Provide cool water or non-alcoholic liquids to workers.
- Provide rest periods and water breaks in cool areas.
- Monitor workers who are at risk of heat stress.
- Provide heat stress training that includes information about risk, prevention, symptoms, treatment, and PPE.

Workers should:

- Avoid exposure to extreme heat, sun exposure, and high humidity when possible.
- Wear light-colored, loose-fitting, breathable clothing such as cotton and avoid synthetic fabrics. Be aware that protective clothing or personal protective equipment may increase the risk of heat stress. This does not mean they should avoid proper PPE.
- Gradually build up to heavy work and schedule heavy work during the coolest parts of day.
- Take more breaks in extreme heat and humidity and rest in the shade or a cool area.
- Drink water frequently. Drink enough water that you never become thirsty, approximately 1 cup every 15-20 minutes. Avoid alcohol, and drinks with large amounts of caffeine or sugar. Light colored urine will indicate appropriate hydration.
- Monitor your physical condition and that of your coworkers.

AUTHOR

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