



5-minute safety talk

Heat-related illness

The body burns calories and produces heat to keep its temperature at 98.6 degrees Fahrenheit. In a hot environment or during vigorous physical activity, the body will rid itself of excess heat. Two effective ways it does this are sweating and dilation of blood vessels. When sweat evaporates from the skin, you begin to cool off. When blood vessels dilate, blood is brought to the skin surface to release heat.

Problems develop when the body's cooling mechanisms do not work properly. For example, when the air temperature exceeds body temperature, the body cannot easily cool itself. If the air is humid, sweat also does not evaporate quickly. Sweat also does not evaporate from a person who works hard or exercises while wrapped in heavy clothing or protective gear. That makes heat-related illness a concern in any weather, anywhere.

What's the problem?

Heat-related illness takes several forms. Heat rash occurs when sweat ducts get clogged. Heat cramps are painful muscle spasms caused by the loss of electrolytes from heavy sweating. If workers develop these conditions, immediately get them out of the heat so they can rest. The next stage of heat-related illness may not be far away. Heat syncope, heat exhaustion and heatstroke develop from prolonged exposure to heat. A victim of heat syncope becomes light-headed and faints when blood flow to the brain decreases. This is because blood pressure is lowered when blood vessels dilate to rid the body of heat. Blood pressure lowers further when blood volume drops as water is evaporated from the blood.

When the body loses too much water and salt, heat exhaustion sets in. Signs include weakness, dizziness, nausea, headache, heavy sweating and clammy skin. A heatstroke victim has a rapid pulse, hot, red skin and has stopped sweating. The victim may show mental confusion, a decrease in alertness and blurred judgment. Heatstroke can be extremely serious and lead to brain damage or even death if not treated promptly and properly.

Hot tips to cool conditions

You should know how to recognize a victim of heat-related illness. Evaluate the symptoms, then follow these first aid actions:

Heat cramps: Have the worker sip water or a sports drink. Gently stretch, massage and ice the muscle. Seek medical attention if the worker has heart problems or if cramps don't get better within an hour.

Heat syncope: Have the worker lie down in a cool area. Call for medical help.

Heat exhaustion: Lay the worker down on his or her back in a cool area. Call for medical help. Remove excessive layers of clothing. Give a sports drink or water. Do not give anything to drink if the worker vomits. Cool the worker with a cool water spray or wet cloths and a fan.

Heatstroke: Call for medical help immediately. While you wait for help to arrive, immediately cool the victim with any means at hand, preferably by immersing the victim up to the neck in cold water. Alternatively, move the worker to a cool place and remove clothing down to the underwear, then apply ice packs at the neck, armpits and groin. Or, cover the worker with wet towels or cloths or spray him or her with cool water, and fan the worker to quickly evaporate the dampness on the skin.

Catch it early

Awareness is vital to prevent heat-related illnesses. Supervisors need to watch for warning signs of heat illness in workers. Workers also should be educated on what to look for in victims. Many companies that have workers exposed to heat year-round, provide supervisors with lectures, videos and even first aid training to prevent and treat heat-related illnesses. Workers adapt to the heat, but they should know their limits and supervisors should never push beyond those limits. Workers can take other preventive measures to combat the heat:

- **Eat light. The more calories you take in, the more body heat you produce.**
- **Drink plenty of fluids before work and throughout the day. Avoid caffeine.**
- **Wear lightweight clothing. Wide-brimmed hats protect workers from direct sunlight.**

Heat illnesses, especially in the summer, are the consequence of not recognizing the warning signs on the job. Hot conditions don't have to be dangerous if you watch for the warning signs, and get cooperation from workers to prevent heat-related illness.



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Protect Yourself Heat Stress



When the body is unable to cool itself by sweating, several heat-induced illnesses such as heat stress or heat exhaustion and the more severe heat stroke can occur, and can result in death.

Factors Leading to Heat Stress

High temperature and humidity; direct sun or heat; limited air movement; physical exertion; poor physical condition; some medicines; and inadequate tolerance for hot workplaces.

Symptoms of Heat Exhaustion

- Headaches, dizziness, lightheadedness or fainting.
- Weakness and moist skin.
- Mood changes such as irritability or confusion.
- Upset stomach or vomiting.

Symptoms of Heat Stroke

- Dry, hot skin with no sweating.
- Mental confusion or losing consciousness.
- Seizures or convulsions.

Preventing Heat Stress

- Know signs/symptoms of heat-related illnesses; monitor yourself and coworkers.
- Block out direct sun or other heat sources.
- Use cooling fans/air-conditioning; rest regularly.
- Drink lots of water; about 1 cup every 15 minutes.
- Wear lightweight, light colored, loose-fitting clothes.
- Avoid alcohol, caffeinated drinks, or heavy meals.

What to Do for Heat-Related Illness

- Call 911 (or local emergency number) at once.

While waiting for help to arrive:

- Move the worker to a cool, shaded area.
- Loosen or remove heavy clothing.
- Provide cool drinking water.
- Fan and mist the person with water.

For more complete information:

OSHA Occupational
Safety and Health
Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA

OSHA 3154-07R-06