

# Everyone Goes Home “SAFE”!

## HEAT ILLNESS CAN BE DEADLY

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, which killed more than 30 workers last year. **These illnesses and deaths are preventable.**

## What Are Heat Related Injuries?



There are **three** types of heat-related injuries:

- **Heat cramps** – These are painful muscle cramps, usually in the stomach, arms, or legs that may occur during heavy activity. Heat cramps are the least serious type of heat-related injury. It can be dangerous to ignore them, however, since they are an early warning sign that the body is having trouble with heat.
- **Heat exhaustion** – This is the body's response to losing too much water and salt in sweat. It often occurs in people who exercise heavily or work in a hot, humid place, which makes them sweat a lot. Elderly people and those with high blood pressure are also prone to heat exhaustion. As the body overheats, blood flow to the skin increases, which decreases blood flow to other organs and causes weakness, confusion, and can cause collapse. If heat exhaustion is not treated, the person may suffer heat stroke.
- **Heat stroke** – This is the most serious type of heat-related injury. Heat stroke, also known as sun stroke, occurs when the body becomes unable to cool itself down. The body's temperature may rise to 106 degrees Fahrenheit or higher within minutes. If heat stroke is not treated quickly, it can lead to brain damage or death.

## Heat-related illnesses include...

- **Heat rash** (prickly heat), which occurs when the sweat ducts to the skin become blocked or swell, causing discomfort and itching.
- **Heat cramps**, which occur in muscles after exercise because sweating causes the body to lose water, salt, and minerals (electrolytes).
- **Heat edema** (swelling) in the legs and hands, which can occur when you sit or stand for a long time in a hot environment.
- **Heat tetany** (hyperventilation and heat stress), which is usually caused by short periods of stress in a hot environment.
- **Heat syncope** (fainting), which occurs from low blood pressure when heat causes the blood vessels to expand (dilate) and body fluids move into the legs because of gravity.
- **Heat exhaustion** (heat prostration), which generally develops when a person is working or exercising in hot weather and does not drink enough liquids to replace those lost liquids.

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- **Heatstroke** (sunstroke), which occurs when the body fails to regulate its own temperature and body temperature continues to rise, often to 105°F (40.6°C) or higher. **Heatstroke is a medical emergency. Even with immediate treatment, it can be life-threatening or cause serious long-term problems.**

## Questions often asked:

- **Who is affected?** Workers exposed to hot and humid conditions are at risk of heat illness, especially those doing heavy work tasks or using bulky protective clothing and equipment. Some workers might be at greater risk than others if they have not built up a tolerance to hot conditions.
- **What is heat illness?** The body normally cools itself by sweating. During hot weather, especially with high humidity, sweating isn't enough. Body temperature can rise to dangerous levels if precautions are not taken. Heat illnesses range from heat rash and heat cramps to heat exhaustion and heat stroke. Heat stroke can result in death and requires **immediate medical attention**.
- **How can heat illness be prevented?** Remember three simple words: **water, rest, shade**. Drinking water often, taking breaks, and limiting time in the heat can help prevent heat illness. Employers should include these prevention steps in worksite training and plans. Gradually build up to heavy work in hot conditions. This helps you build tolerance to the heat – or become acclimated. Employers should take steps that help workers become acclimated, especially workers who are new to working outdoors in the heat or have been away from work for a week or more. Gradually increase workloads and allow more frequent breaks during the first week of work. Also, it's important to know and look out for the symptoms of heat illness in yourself and others during hot weather. Plan for an emergency and know what to do — **acting quickly can save lives!**

## What are the Symptoms?

### Heat Cramps

- Painful muscle cramps, usually in the stomach, arms, or legs
- Heavy sweating

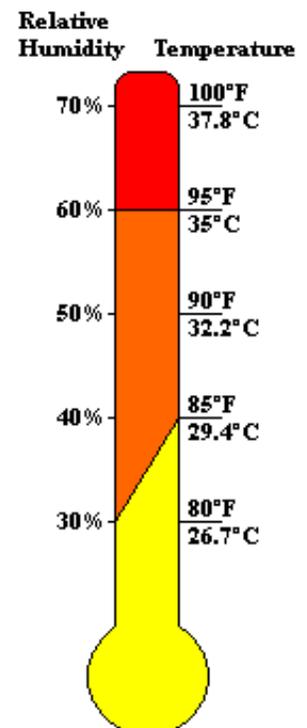
### Heat Exhaustion

- Heavy sweating
- Cold, clammy skin
- Paleness
- Tiredness
- Weakness
- Dizziness
- Headache
- Fainting

### THE HEAT EQUATION

**High Temperature**  
+ **High Humidity**  
+ **Physical Work**  
-----  
**Heat Illness**

- = **Danger**
- = **Caution**
- = **Less Hazardous**





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- Muscle cramps
- Nausea
- Vomiting
- Fast, weak pulse
- Fast, shallow breathing

## **Heat Stroke**

- Very high body temperature (above 103)
- No sweating
- Red, hot, dry skin
- Dizziness
- Headache
- Confusion
- Nausea
- Vomiting
- Fast, strong pulse
- Unconsciousness

## **What is the Treatment?**

### **Heat Cramps**

Heat cramps usually occur during heavy activity. It is best for the person to stop being active and sit quietly in a cool place and drink sips of water, clear juice, or a sports drink. To relieve the muscle cramps, firm pressure is placed on the muscles or the muscles are massaged gently. It is important for the person not to return to heavy exercise for a few hours after the cramps go away, because this might lead to heat exhaustion or heat stroke. A doctor should be called if the cramps do not go away within an hour.

### **Heat Exhaustion**

Medical help should be called immediately if the symptoms are severe, or if the person has heart disease or high blood pressure. Otherwise, it is important for the person to cool off by being taken to a shaded area and fanned or, if possible, moved into an air-conditioned room; it is best for him or her to lie down and remove heavy clothing. Sips of water and applying cool, wet cloths on the skin are helpful. A cool shower or bath may also help.

### **Heat Stroke**

Heat stroke is a serious medical emergency. Medical help should be sought right away. While waiting for help, the person can be cooled off by getting out of the sun, being fanned, or being moved into an air-conditioned room. It is important for the person to lie down and remove clothing. Applying cool, wet cloths, or putting the person in a cool bath or shower will help. If the humidity is low, another solution is to wrap the person in a cool, wet sheet. If the person is outside, spraying him or her with a garden hose can be effective. Taking the person's temperature regularly, and keeping up the cooling efforts until it drops to 101 to 102 degrees Fahrenheit is important. Sometimes the person's muscles may start to twitch wildly as a result of heat stroke. If this



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happens, the person should be kept from getting hurt. It is important not to put anything in the person's mouth, and do not give him or her anything to drink. If vomiting occurs, the airway is kept open by turning the person onto his or her side.