



# Heat-Related Illnesses

## Overview

**Heat and humidity can cause several different types of heat-related illnesses such as heat cramps, heat exhaustion and heat stroke.** Knowing the signs and symptoms of each type of heat-related illness will help to keep you safe on the job. Normally, the body has ways of keeping itself cool by allowing heat to escape through the skin and evaporating sweat (perspiration). However, if the body does not cool down properly or does not cool down enough, a person may suffer a heat-related illness. Anyone is susceptible to a heat-related illness, but the very young and elderly are at the greatest risk. Beyond that, heat-related illnesses can become serious or even deadly if unattended.

## Types of Heat-Related Emergencies

These are three types of heat-related emergencies: **Heat Cramps** are **muscular pains and spasms** caused by heavy exertion. This is generally the result of a loss of water and salt through sweating. **Heat Exhaustion** is caused by **fluid loss** and decreased blood flow to your vital organs. This condition can produce flu-like symptoms. **Heat Stroke** is the most serious heat-related emergency and occurs when **the body's internal cooling system has failed. This is a life-threatening condition requiring immediate and aggressive action.** The chart on the following page provides information about the various signs and symptoms of the three main types of heat-related illnesses.

## The Heat Index

**The heat index is a method that combines air temperature and relative humidity to determine an apparent temperature or in other words, how hot it actually feels outside.** The human body normally cools itself through perspiration (or sweating), when the water in sweat evaporates and carries heat away from the body. However, when the relative humidity is high, the evaporation rate of the water is reduced. This means that heat is removed from the body at a lower rate, causing it to retain more heat than it would in dry air. The heat index is important to know especially when doing physical work outdoors, as higher combinations of heat and humidity can make the body more susceptible to heat-related illnesses.

## Preventing Heat-Related Emergencies

**Know the signs and symptoms of the various types of heat-related illnesses.** Take time to monitor yourself and be aware of your co-workers. If working outdoors, avoid long periods of direct sunlight. Use cooling fans to keep air circulating around your body. This helps aid your natural cooling process. Wear lightweight, light-colored and loose-fitting clothes when working in warm and humid environments. **Drink primarily non-caffeinated fluids. Caffeine actually works against you because it is a diuretic and will cause you to lose more fluids than you are ingesting. Drinking water or other electrolyte products are best. Never wait until you feel thirsty to start hydrating – you are well on your way to becoming dehydrated when you feel thirsty. It is critical to your overall health to stay properly hydrated, especially when working in hot and humid environments.**



## Heat-Related Emergency Guide

The first step is always prevention. In hot and humid environments, always wear loose-fitting and lightweight clothes, take frequent breaks, drink lots of fluids, avoid caffeine (coffee and soda) and alcohol and do not stay in direct sunlight for long periods of time.

### Signs & Symptoms

Heat Cramps	Heat Exhaustion	Heat Stroke
Heat cramps are muscular pain and spasms due to heavy exertion. Generally thought to be caused by a loss of water and salt through sweating.	Heat exhaustion is caused by fluid loss causing blood flow to decrease to vital organs. As a result of dehydration, victims often complain of flu-like symptoms hours after exposure.	Heat stroke is the most serious type of heat-related illness that is <b>LIFE THREATENING</b> and requires <b>IMMEDIATE</b> care.
Heat cramps usually occur during outdoor activities or strenuous activities. Can occur even when it does not seem very hot or humid.	Heat exhaustion is serious but not life threatening, if identified and treated properly. Without treatment, heat exhaustion can lead to heat stroke.	Heat stroke occurs when the body's heat regulating system fails. Body temperatures raise to a point that brain damage and death may result, unless the body is cooled very quickly.
Signs & Symptoms	Signs & Symptoms	Signs & Symptoms
<ul style="list-style-type: none"> <li>▪ Leg cramps</li> <li>▪ Muscle spasms</li> <li>▪ Stiff abdomen</li> <li>▪ Weak, faint or dizzy</li> <li>▪ Stiff abdomen</li> <li>▪ Possible nausea</li> <li>▪ Normal mental status</li> </ul>	<ul style="list-style-type: none"> <li>▪ Skin is cool and moist</li> <li>▪ Excessive perspiration</li> <li>▪ Pupils are dilated (large)</li> <li>▪ Body temp near normal</li> <li>▪ Headache</li> <li>▪ Weak, dizzy or faint</li> <li>▪ Disorientation</li> <li>▪ Dark and decreased urine</li> </ul>	<ul style="list-style-type: none"> <li>▪ Skin is hot and dry</li> <li>▪ No sweating</li> <li>▪ Pupils are very small</li> <li>▪ Victim is confused or unable to think straight</li> <li>▪ Possible seizures</li> <li>▪ Body temperature is very high (can be as high as 105° F)</li> </ul>

### Treatment

Heat Cramps	Heat Exhaustion	Heat Stroke
<ul style="list-style-type: none"> <li>▪ Move to a cooler location</li> <li>▪ Seek medical help if victim loses consciousness</li> <li>▪ Drink plenty of fluids</li> </ul>	<ul style="list-style-type: none"> <li>▪ Get medical attention</li> <li>▪ Move victim to a cool area</li> <li>▪ Lay victim on their back and elevate feet 8-10 inches</li> <li>▪ If conscious, give water every 15 minutes</li> <li>▪ Cool by fanning or spraying with cool water</li> </ul>	<ul style="list-style-type: none"> <li>▪ Call 911 immediately</li> <li>▪ Move victim to a cool area</li> <li>▪ Loosen clothing</li> <li>▪ Douse body with water</li> <li>▪ Apply ice packs or wet clothes to neck, armpits and groin</li> </ul>

### General Guidelines and Reminders

Do not underestimate the seriousness of heat-related illnesses. Do not give medication to reduce fever and do not allow the victim to drink any caffeinated or alcoholic beverages. In heat-related emergencies, do not overlook other medical conditions that might be complicated by excessive heat. When in doubt, seek medical attention as soon as possible.