

# Heat Exhaustion

Heat exhaustion is a heat-related illness that can occur after you've been exposed to high temperatures, and it often is accompanied by dehydration.

There are two types of heat exhaustion:

- Water depletion. Signs include excessive thirst, weakness, headache, and loss of consciousness.
- Salt depletion. Signs include nausea and vomiting, muscle cramps, and dizziness.

Although heat exhaustion isn't as serious as heat stroke, it isn't something to be taken lightly. Without proper intervention, heat exhaustion can progress to heat stroke, which can damage the brain and other vital organs, and even cause death.

## Symptoms of Heat Exhaustion

The most common signs and symptoms of heat exhaustion include:

- Confusion
- Dark-colored urine (a sign of dehydration)
- Dizziness
- Fainting
- Fatigue
- Headache
- Muscle or abdominal cramps
- Nausea, vomiting, or diarrhea
- Pale skin
- Profuse sweating
- Rapid heartbeat

## Treatment for Heat Exhaustion

If you, or anyone else, has symptoms of heat exhaustion, it's essential to immediately get out of the heat and rest, preferably in an air-conditioned room. If you can't get inside, try to find the nearest cool and shady place.

Other recommended strategies include:

- Drink plenty of fluid (avoid caffeine and alcohol).
- Remove any tight or unnecessary clothing.
- Take a cool shower, bath, or sponge bath.

- Apply other cooling measures such as fans or ice towels.

If such measures fail to provide relief within 15 minutes, seek emergency medical help, because untreated heat exhaustion can progress to heat stroke.

After you've recovered from heat exhaustion, you'll probably be more sensitive to high temperatures during the following week. So it's best to avoid hot weather and heavy [exercise](#) until your doctor tells you that it's safe to resume your normal activities.

## Risk Factors for Heat Exhaustion

Heat exhaustion is strongly related to the heat index, which is a measurement of how hot you feel when the effects of relative humidity and air temperature are combined. A relative humidity of 60% or more hampers sweat evaporation, which hinders your body's ability to cool itself.

The risk of heat-related illness dramatically increases when the heat index climbs to 90 degrees or more. So it's important -- especially during heat waves -- to pay attention to the reported heat index, and also to remember that the heat index is even higher when you are standing in full sunshine.

# Heat Stroke

Heat stroke is the most serious form of heat injury and is considered a medical emergency. If you suspect that someone has heat stroke -- also known as sunstroke -- call 911 immediately and give first aid until paramedics arrive.

Heat stroke can kill or cause damage to the brain and other internal organs. Although heat stroke mainly affects people over age 50, it also takes a toll on healthy young athletes.

Heat stroke often occurs as a progression from milder heat-related illnesses such as heat cramps, heat syncope (fainting), and heat exhaustion. But it can strike even if you have no previous signs of heat injury.

Heat stroke results from prolonged exposure to high temperatures -- usually in combination with dehydration -- which leads to failure of the body's temperature control system. The medical definition of heat stroke is a core body temperature greater than 105 degrees Fahrenheit, with complications involving the central nervous system that occur after exposure to high temperatures. Other common symptoms include nausea, seizures, confusion, disorientation, and sometimes loss of consciousness or coma.

## Symptoms of Heat Stroke

The hallmark symptom of heat stroke is a core body temperature above 105 degrees Fahrenheit. But fainting may be the first sign.

Other symptoms may include:

- Throbbing headache
- Dizziness and light-headedness
- Lack of sweating despite the heat
- Red, hot, and dry skin
- Muscle weakness or cramps
- Nausea and vomiting
- Rapid heartbeat, which may be either strong or weak
- Rapid, shallow breathing
- Behavioral changes such as confusion, disorientation, or staggering
- Seizures
- Unconsciousness
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## First Aid for Heat Stroke

If you suspect that someone has a heat stroke, immediately call 911 or transport the person to a hospital. Any delay seeking medical help can be fatal.

While waiting for the paramedics to arrive, initiate first aid. Move the person to an air-conditioned environment -- or at least a cool, shady area -- and remove any unnecessary clothing.

If possible, take the person's core body temperature and initiate first aid to cool it to 101 to 102 degrees Fahrenheit. (If no thermometers are available, don't hesitate to initiate first aid.)

Try these cooling strategies:

## Effects of Dehydration

- Fan air over the patient while wetting his or her [skin](#) with water from a sponge or garden hose.
- Apply ice packs to the patient's armpits, groin, neck, and back. Because these areas are rich with [blood](#) vessels close to the skin, cooling them may reduce body temperature.
- Immerse the patient in a shower or tub of cool water, or an ice bath.

If emergency response is delayed, call the hospital emergency room for additional instructions.

## Risk Factors for Heat Stroke

Heat stroke is most likely to affect older people who live in apartments or homes lacking air conditioning or good airflow. Other high-risk groups include people of any age who don't drink enough water, have chronic diseases, or who drink excessive amounts of alcohol.

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The risk of heat-related illness dramatically increases when the heat index climbs to 90 degrees or more. So it's important -- especially during heat waves -- to pay attention to the reported heat index, and also to remember that exposure to full sunshine can increase the reported heat index by 15 degrees.

If you live in an urban area, you may be especially prone to develop heat stroke during a prolonged heat wave, particularly if there are stagnant atmospheric conditions and poor air quality. In what is known as the "heat island effect," asphalt and concrete store heat during the day and only gradually release it at night, resulting in higher nighttime temperatures.

## Preventing Heat Stroke

When the heat index is high, it's best to stay in an air-conditioned environment. If you must go outdoors, you can prevent heat stroke by taking these steps:

- Wear lightweight, light-colored, loose-fitting clothing, and a wide-brimmed hat.
- Use a [sunscreen](#) with a sun protection factor (SPF) of 30 or more.
- Drink extra fluids. To prevent [dehydration](#), it's generally recommended to drink at least eight glasses of water, fruit juice, or vegetable juice per day. Because heat-related illness also can result from salt depletion, it may be advisable to substitute an electrolyte-rich sports drink for water during periods of extreme heat and humidity.

- Take additional precautions when [exercising](#) or working outdoors. The general recommendation is to drink 24 ounces of fluid two hours before exercise, and consider adding another 8 ounces of water or sports drink right before exercise. During exercise, you should consume another 8 ounces of water every 20 minutes, even if you don't feel thirsty.
- Reschedule or cancel outdoor activity. If possible, shift your time outdoors to the coolest times of the day, either early morning or after sunset.