

# Dehydration and Heat Stroke

## The danger of dehydration and heat stroke

Dehydration and heat stroke are two very common heat-related diseases that can be life-threatening if left untreated.

## What is Dehydration?

Dehydration can be a serious heat-related disease. It is also a dangerous side effect of diarrhea, vomiting, and fever. Children and people over the age of 60 are particularly susceptible to dehydration.

## What causes dehydration?

Under normal conditions, we all lose body water daily through sweat, tears, breathing, urine, and stool. In a healthy person, this water is replaced by drinking fluids and eating foods that contain water. When a person becomes so sick with fever, diarrhea, or vomiting, dehydration happens. It also happens if an individual is overexposed to the sun and not drinking enough water. This is caused when the body loses water content and essential body salts, such as sodium and potassium.

Occasionally, dehydration can be caused by medicines, such as diuretics. These deplete body fluids and electrolytes. Whatever the cause, dehydration should be treated as soon as possible.

## What are the symptoms of dehydration?

The following are the most common symptoms of dehydration. However, each individual may experience symptoms differently. Symptoms may include:

- Thirst
- Less-frequent urination
- Dry skin
- Fatigue
- Light-headedness
- Dizziness
- Confusion
- Dry mouth and mucous membranes
- Increased heart rate and breathing

In children, additional symptoms may include:

- Dry mouth and tongue
- No tears when crying
- No wet diapers for several hours
- Sunken abdomen, eyes, or cheeks
- Listlessness
- Irritability
- Skin that does not flatten when pinched and released

The symptoms of dehydration may resemble other medical conditions or problems. Always talk with your healthcare provider for a diagnosis.

### Treatment for dehydration

If caught early, dehydration can often be treated at home under a healthcare provider's guidance. In children, directions for giving food and fluids will differ according to the cause of the dehydration, so it is important to talk with your child's healthcare provider.

In cases of mild dehydration, simple rehydration is recommended by drinking fluids. Many sports drinks on the market effectively restore body fluids, electrolytes, and salt balance.

For moderate dehydration, intravenous (IV) fluids may be needed. If caught early enough, simple rehydration may be effective. Cases of serious dehydration should be treated as a medical emergency, and hospitalization, along with intravenous fluids, is necessary. Immediate action should be taken.

### How can dehydration be prevented?

Take precautionary measures to avoid the harmful effects of dehydration, including the following:

- Drink plenty of fluids, especially when working or playing in the sun.
- Make sure you are taking in more fluid than you are losing.
- Try to schedule physical outdoor activities for the cooler parts of the day.
- Drink appropriate sports drinks to help maintain electrolyte balance.
- For infants and young children, solutions such as Pedialyte will help maintain electrolyte balance during illness or heat exposure. Do not try to make fluid and salt solutions at home for children.

### What is Heat Stroke?

Heat stroke is the most severe form of heat illness and is a life-threatening emergency. It is the result of long, extreme exposure to the sun. In this case, a person does not sweat enough to lower body temperature. The elderly, infants, persons who work outdoors, people with mental illness, obesity, poor circulation, and those on certain

types of medicines or drinking alcohol are most susceptible to heat stroke. It is a condition that develops rapidly and needs immediate medical treatment.

### What causes heat stroke?

Our bodies make a tremendous amount of internal heat and we normally cool ourselves by sweating and radiating heat through the skin. However, in certain circumstances, such as extreme heat, high humidity, or vigorous activity in the hot sun, this cooling system may begin to fail. This allows heat to build up to dangerous levels.

If a person becomes dehydrated and cannot sweat enough to cool his or her body, his or her internal temperature may rise to dangerously high levels. This causes heat stroke.

### What are the symptoms of heat stroke?

The following are the most common symptoms of heat stroke. However, each individual may experience symptoms differently. Symptoms may include:

- Headache
- Dizziness
- Disorientation, agitation, or confusion
- Sluggishness or fatigue
- Seizure
- Hot, dry skin that is flushed but not sweaty
- A high body temperature
- Loss of consciousness
- Rapid heartbeat
- Hallucinations

The symptoms of a heat stroke may resemble other medical conditions or problems. Always talk with your healthcare provider for a diagnosis.

### Treatment for heat stroke

It is important for the person to be treated immediately as heat stroke can cause permanent damage or death. There are some immediate first-aid measures you can take while waiting for help to arrive, including the following:

- Get the person to a shaded area.
- Remove clothing and gently apply cool water to the skin followed by fanning to stimulate sweating.
- Apply ice packs to the groin and armpits.
- Have the person lie down in a cool area with their feet slightly elevated.
- Cool the person rapidly however you can.

Intravenous (IV) fluids are often necessary to compensate for fluid or electrolyte loss. Bed rest is generally advised and body temperature may fluctuate abnormally for weeks after heat stroke.

### How can heat stroke be prevented?

There are precautions that can help protect you against the adverse effects of heat stroke. These include the following:

- Drink plenty of fluids during outdoor activities, especially on hot days. Water and sports drinks are the drinks of choice. Avoid caffeinated tea, coffee, soda, and alcohol, as these can lead to dehydration.
- Wear lightweight, tightly woven, loose-fitting clothing in light colors.
- Schedule vigorous activity and sports for cooler times of the day.
- Protect yourself from the sun by wearing a hat, sunglasses and using an umbrella.
- Increase time spent outdoors gradually to get your body used to the heat.
- During outdoor activities, take drink breaks often and mist yourself with a spray bottle to avoid becoming overheated.
- Try to spend as much time indoors as possible on very hot and humid days.
- Never leave children or pets in closed cars on warm or sunny days.

If you live in a hot climate and have a chronic condition, talk to your healthcare provider about extra precautions you can take to protect yourself against heat stroke.

The infographic is split into two vertical panels. The left panel is orange and titled 'Heat Exhaustion'. It lists symptoms: Dizziness, Thirst, Heavy Sweating, Nausea, and Weakness. It includes a box with 'ACT FAST' instructions: Move to a cooler area, Loosen clothing, Sip cool water, and Seek medical help if symptoms don't improve. The right panel is red and titled 'Heat Stroke'. It lists symptoms: Confusion, Dizziness, and Becomes Unconscious. It includes a box with 'ACT FAST' instructions: CALL 911, Move person to a cooler area, Loosen clothing and remove extra layers, and Cool with water or ice. A central figure of a person is shown with a red head and orange body, with icons of a water bottle, a question mark, and a hand wiping sweat. A warning at the bottom states: 'Heat exhaustion can lead to heat stroke.' and 'Heat stroke can cause death or permanent disability if emergency treatment is not given.'

Heat Exhaustion	Heat Stroke
<b>ACT FAST</b> <ul style="list-style-type: none"><li>• Move to a cooler area</li><li>• Loosen clothing</li><li>• Sip cool water</li><li>• Seek medical help if symptoms don't improve</li></ul>	<b>ACT FAST</b> <b>CALL 911</b> <ul style="list-style-type: none"><li>• Move person to a cooler area</li><li>• Loosen clothing and remove extra layers</li><li>• Cool with water or ice</li></ul>
<i>Dizziness</i> <i>Thirst</i> <i>Heavy Sweating</i> <i>Nausea</i> <i>Weakness</i>	<i>Confusion</i> <i>Dizziness</i> <i>Becomes Unconscious</i>

*Heat exhaustion can lead to heat stroke.*

*Heat stroke can cause death or permanent disability if emergency treatment is not given.*

Stay Cool, Stay Hydrated, Stay Informed!

Logos: NOAA, CDC, NIOSH, NIHHS