

KEY POINTS

- People with heat stroke have symptoms of confusion and an elevated temperature.
- People with heat exhaustion are dehydrated. Symptoms include dizziness, headache, nausea, and weakness.
- The very young, the very old, and people with obesity and chronic illness are at greater risk of heat-related illness.

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Heat Wave Emergencies

Heat-related illness is caused by exposure to high temperatures. High humidity increases the risk. The main way the body cools off is through sweating and evaporation of the sweat. On days with high humidity, evaporation does not occur as rapidly, and the body has trouble releasing heat.

Which is more serious, heat exhaustion or heat stroke?

Heat stroke is more serious than heat exhaustion. The word “stroke” makes it easy to remember which is worse. Heatstroke (also called sunstroke) is a life-threatening emergency. There is a 10 to 70% mortality rate if it not treated promptly. EMS 911 transport is required.

What are the symptoms of heat stroke?

A person with heat stroke is usually confused or unconscious. The skin is hot and flushed. The temperature of the heat stroke victim is often over 105° F (40.5° C). Sweating stops in 50% of victims.

What are the symptoms of heat exhaustion?

Symptoms include profuse sweating, headache, nausea, vomiting, dizziness, and weakness. The body temperature can range from normal to 104° F (40° C). The onset of symptoms is usually gradual, over several hours.

Dehydration is the primary problem in a person with heat exhaustion. As dehydration worsens, heat exhaustion symptoms go from mild to severe. Heat exhaustion can progress to heat stroke.

My son is 18 years old, and during a soccer game he started feeling tired and nauseated. It was very hot and quite humid. Normally, he is very healthy and can play an entire game and not get tired. Could this be heat exhaustion?

Absolutely! Heat exhaustion is the most likely cause of these symptoms. On a hot day, heat exhaustion is a common reason for healthy individuals to start feeling tired, nauseated, and weak.

What liquids are best for treating heat exhaustion?

Drinking cool water is a good choice for treating dehydration from heat exhaustion. This is a situation in which eating some salty foods (e.g., potato chips or pretzels) helps!

Sports - rehydration drinks (e.g., Gatorade, Powerade) are also good for treating heat exhaustion. They contain sugar and salt mixed into the liquid.

How much liquids are needed?

An adult or teen with heat exhaustion should drink 2 to 3 cups (480 to 720 ml) of liquids right away to replace what was lost. Then the adult or teen should drink approximately 1 cup (240 ml) every 15 minutes for the next 1 to 2 hours.

The color of the urine (pee) tells if a person is drinking enough liquids. Dark-yellow urine suggests dehydration. Clear or light-yellow urine suggests adequate hydration.

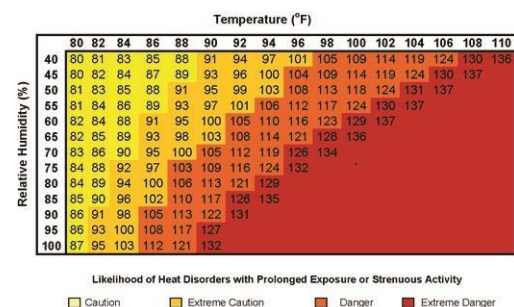
Who is at greatest risk for heat-related illness?

The very young, the very old, and people with obesity and chronic illness are at greater risk of heat related illness.

- **The very young:** Babies and infants can become dehydrated quickly because of their small size.
- **The very old:** Older adults are at increased risk because they have a decreased ability to sweat. They also may have other chronic medical conditions or take medicines that can reduce that can reduce their ability to adapt to the heat.
- **Obesity:** People with a higher percent body fat have a decreased ability to disperse heat.

What is the heat index?

Higher humidity makes it feel hotter outside. Lower humidity makes it feel cooler outside because body sweating and evaporative cooling work better in dry air. The **heat index** is a measure of how hot it really feels when one factors in both the relative humidity and the actual air temperature.



Read more at: [National Weather Service](https://www.weather.gov/heatindex).

How can one prevent heat-related illness?

There are a number of things you can do to prevent heat exhaustion and heat stroke.

- **Drink more.** When working or exercising in a hot environment, drink large amounts of cool liquids. This means 1 cup every 15 minutes. Water is the ideal fluid for replacing lost sweat. Very little salt is lost. Special glucose-electrolyte solutions (sports drinks) offer no advantage over water unless exercising for longer than an hour.
- **Take water breaks.** Take 5-minute water breaks in the shade every 25 minutes. It is important to drink water even when not thirsty. Thirst is often delayed until a person is almost dehydrated. A healthy person can't drink too much water during hot weather.
- **No salt tablets.** Avoid salt tablets because they slow down stomach emptying and delay the absorption of fluids.
- **Dress cool.** Wear a single layer of lightweight clothing. Change it if it becomes wet with sweat.
- **Stay cool.** During heat waves, spend as much time as possible in cool environments (e.g., with air conditioning) or use an electric fan. It takes at least a week to acclimate to a hot environment.
- **Exercise smart.** Athletic coaches recommend that exercise sessions be shortened and less vigorous if the temperature exceeds 82° F (28° C), especially if the humidity is high.
- **Limit hot tub time.** When using a hot tub, limit exposure to 15 minutes and have a "buddy" system in case a heat reaction suddenly occurs. If you have a fever or just exercised vigorously, avoid hot tubs and saunas because these interfere with your ability to release heat.

FIRST AID Advice for Heatstroke (Sunstroke)

- **Call EMS 911 immediately**
- Move the victim to a cool shady area. If possible, move into an air-conditioned place.
- Lie the victim down on his or her back. Elevate the feet.
- Remove excess clothing or equipment (e.g., sports gear, protective work uniforms).
- Sponge the entire body surface continuously with cool water. Fan the victim to increase evaporation.
- If the victim is awake, give as much cold water or sports drink (e.g., Gatorade, Powerade) as he or she can drink. An awake adult or teen should drink 2 to 3 cups (480 to 720 ml) of liquids right away to replace what was lost.
- Fever medicines are of no value for the fever seen with heat stroke.



FIRST AID for Heat Exhaustion

- Move the victim to a cool shady area. If possible, move into an air-conditioned place.
- The victim should lie down. Elevate the feet.
- Undress victim (except for underwear) so the body surface can give off heat.
- Sponge the entire body surface continuously with cool water. Fan the victim to increase evaporation.
- Give as much cold water or sports drink (e.g., Gatorade, Powerade) as the victim can tolerate. An adult or teen with heat exhaustion should drink 2 to 3 cups (480 to 720 ml) of liquids right away to replace what was lost. Then the adult or teen should drink approximately 1 cup (240 ml) every 15 minutes for the next 1 to 2 hours.

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