Spartans Youth Football, Inc.

Heat Related First Aid

Heat cramps: First aid

Heat cramps are painful, involuntary muscle spasms that usually occur during heavy exercise in hot environments. Inadequate fluid intake often contributes to heat cramps. The spasms may be more intense and more prolonged than typical nighttime leg cramps. Muscles most often affected include those in your calves, arms, abdomen, and back, although heat cramps may involve any muscle group involved in the exercise.

If you suspect heat cramps:

- Rest briefly and cool down.
- Drink clear juice or an electrolyte-containing sports drink.
- Practice gentle, range-of-motion stretching and gentle massage of the affected muscle group.
- If your cramps don't go away in 1 hour, call your doctor.

Heat exhaustion: First aid

Heat exhaustion is one of the heat-related syndromes, which range in severity from mild heat cramps to heat exhaustion to potentially life-threatening heatstroke.

Signs and symptoms of heat exhaustion often begin suddenly, sometimes after excessive exercise, heavy perspiration and inadequate fluid intake. Signs and symptoms resemble those of shock and may include:

- Feeling faint
- Nausea
- Heavy sweating
- Ashen appearance
- Rapid, weak heartbeat
- Low blood pressure
- Cool, moist skin
- Low-grade fever

If you suspect heat exhaustion:

- Get the person out of the sun and into a shady or air-conditioned location.
- Lay the person down and elevate the legs and feet slightly.
- Loosen or remove the person's clothing.
- Have the person drink cool water, not iced, or sports drink containing electrolytes.
- Cool the person by spraying or sponging with cool water and fanning them.
- Monitor the person carefully. Heat exhaustion can quickly become heatstroke. If fevers of 102F, fainting, confusion or seizures occur, dial 911 or call for emergency medical assistance.

Heatstroke: First aid

Heatstroke is similar to heat cramps and heat exhaustion. It's one of the heat-related problems that often result from heavy work in hot environments, usually accompanied by inadequate fluid intake. Older adults, people who are obese and people born with an impaired ability to sweat are at high risk of heatstroke. Other risk factors include dehydration, alcohol use, cardiovascular disease and certain medications.

What makes heatstroke much more severe and potentially life-threatening is that the body's normal mechanisms for dealing with heat stress, such as sweating and temperature control, are lost. The main sign of heatstroke is a markedly elevated body temperature — generally greater than 104 F — with changes in mental status ranging from personality changes to confusion and coma. Skin may be hot and dry, although in heatstroke caused by exertion, the skin is usually moist.

Other signs and symptoms may include:

- Rapid heartbeat
- Rapid and shallow breathing
- Elevated or lowered blood pressure
- Cessation of sweating
- Irritability, confusion or unconsciousness
- Fainting, which may be the first sign in older adults

If you suspect heatstroke:

- Move the person out of the sun and into a shady or air conditioned space.
- Dial 911 or call for emergency medical assistance.
- Cool the person by covering them with damp sheets or spraying them with cool water. Direct air onto the person with a fan or newspaper.

By Mayo Clinic Staff
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Water: How much should you drink every day?

Water is essential to good health, yet needs vary by individual. These guidelines can help ensure you drink enough fluids.

How much water should you drink each day? — A simple question with no easy answers. Studies have produced varying recommendations over the years, but in truth, your water needs depend on many factors, including your health, how active you are and where you live.

Though no single formula fits everyone, knowing more about your body's need for fluids will help you estimate how much water to drink each day.

Health benefits of water

Water is your body's principal chemical component, comprising, on average, 60 percent of your weight. Every system in your body depends on water. For example, water flushes toxins out of vital organs, carries nutrients to your cells and provides a moist environment for ear, nose and throat tissues.

Lack of water can lead to dehydration, a condition that occurs when you don't have enough water in your body to carry out normal functions.

How much water do you need?

Every day you lose water through your breath, perspiration, urine and bowel movements. For your body to function properly, you must replenish its water supply by consuming beverages and foods that contain water.

A couple of approaches attempt to approximate water needs for the average, healthy adult living in a temperate climate.

- **Replacement approach.** The average urine output for adults is 1.5 liters a day. You lose close to an additional liter of water a day through breathing, sweating and bowel movements. Food usually accounts for 20 percent of your total fluid intake, so if you consume 2 liters of water or other beverages a day (a little more than 8 cups) along with your normal diet, you will typically replace the lost fluids.
- **Dietary recommendations.** The Institute of Medicine advises that men consume roughly 3.0 liters (about 13 cups) of total beverages a day and women consume 2.2 liters (about 9 cups) of total beverages a day.

Even apart from the above approaches, it is generally the case that if you drink enough fluid so that you rarely feel thirsty and produce between one and two liters of colorless or slightly yellow urine a day, your fluid intake is probably adequate.

Factors that influence water needs

You may need to modify your total fluid intake depending on how active you are, the climate you live in, your health status, and if you're pregnant or breast-feeding.

- **Exercise.** The more you exercise, the more fluid you'll need to keep your body hydrated. An extra 1 or 2 cups of water should suffice for short bouts of exercise, but intense exercise lasting more than an hour (for example, running a marathon) requires additional fluid. How much additional fluid is needed depends on how much you sweat during the exercise, but 13 to26 ounces (or about 2 to 3 cups) an hour will generally be adequate, unless the weather is exceptionally warm.

During long bouts of intense exercise, it's best to use a sports drink that contains sodium, as this will help replace sodium lost in sweat and reduce the chances of developing hyponatremia, which can be life-threatening. Fluid also should be replaced after exercise. Drinking 16 ounces of fluid per pound of body weight lost during exercise is recommended.

- **Environment.** Hot or humid weather can make you sweat and requires additional intake of fluid. Heated indoor air also can cause your skin to lose moisture during wintertime. Further, altitudes greater than 2,500 meters (8,200 feet) may trigger increased urination and more rapid breathing, which use up more of your fluid reserves.
- **Illnesses or health conditions.** Signs of illnesses, such as fever, vomiting and diarrhea, cause your body to lose additional fluids. In these cases you should drink more water and may even need oral rehydration solutions, such as Gatorade, Powerade or Ceralyte. Certain conditions, including bladder infections or urinary tract stones, also require increased water intake. On the other hand, certain conditions such as heart failure and some types of kidney, liver and adrenal diseases may impair excretion of water and even require that you limit your fluid intake.
- **Pregnancy or breast-feeding.** Women who are expecting or breast-feeding need additional fluids to stay hydrated. Large amounts of fluid are lost especially when nursing. The Institute of Medicine recommends that pregnant women drink 2.4 liters (about 10 cups) of fluids daily and women who breast-feed consume 3.0 liters (about 12.5 cups) of fluids a day.

Beyond the tap: Other sources of water

Although it's a great idea to keep water within reach at all times, you don't need to rely only on what you drink to satisfy your fluid needs. What you eat also provides a significant portion of your fluid needs. On average, food provides about 20 percent of total water intake, while the remaining 80 percent comes from water and beverages of all kinds.

For example, many fruits and vegetables — such as watermelon and cucumbers — are nearly 100 percent water by weight. Beverages such as milk and juice are also comprised mostly of water. Even beer, wine and caffeinated beverages such as coffee, tea or soda can contribute, but these should not be a major portion of your daily total fluid intake. Water is one of your best bets because it's calorie-free, inexpensive and readily available.

Dehydration and complications

Failing to take in more water than your body uses can lead to dehydration. Even mild dehydration — as little as a 1 percent to 2 percent loss of your body weight — can sap your energy and make you tired. Common causes of dehydration include strenuous activity, excessive sweating, vomiting and diarrhea.

Signs and symptoms of dehydration include:

- Mild to excessive thirst
- Fatigue
- Headache
- Dry mouth
- Little or no urination
- Muscle weakness
- Dizziness
- Lightheadedness

Mild dehydration rarely results in complications — as long as the fluid is replaced quickly — but more-severe cases can be life-threatening, especially in the very young and the elderly. In extreme situations, fluids or electrolytes may need to be delivered intravenously.

Staying safely hydrated

It's generally not a good idea to use thirst alone as a guide for when to drink. By the time one becomes thirsty, it is possible to already be slightly dehydrated. Further, be aware that as you get older your body is less able to sense dehydration and send your brain signals of thirst. Excessive thirst and increased urination can be signs of a more serious medical condition. Talk to your doctor if you experience either.

To ward off dehydration and make sure your body has the fluids it needs, make water your beverage of choice. Nearly every healthy adult can consider the following:

- Drink a glass of water with each meal and between each meal.
- Hydrate before, during and after exercise.
- Substitute sparkling water for alcoholic drinks at social gatherings.

If you drink water from a bottle, thoroughly clean or replace the bottle often. Refill only bottles that are designed for reuse. Though uncommon, it is possible to drink too much water. When your kidneys are unable to excrete the excess water, the electrolyte (mineral) content of the blood is diluted, resulting in a condition called hyponatremia (low sodium levels in the blood). Endurance athletes — such as marathon runners — who drink large amounts of water are at higher risk of hyponatremia. In general, though, drinking too much water is rare in healthy adults who consume an average American diet.

If you're concerned about your fluid intake, check with your doctor or a registered dietitian. He or she can help you determine the amount of water that's best for you.

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