

STEVEN CHUDIK MD

SHOULDER, KNEE & SPORTS MEDICINE

Dehydration



Under normal conditions, your body maintains fluid balance through thirst mechanisms and the kidneys' ability to dilute or concentrate your urine. However, during periods of exercise, the thirst mechanism is not adequate enough to maintain good hydration. The human body needs water to maintain enough blood and other fluids to function properly. You lose fluids when you urinate, vomit, have diarrhea, sweat, breathe, or have a fever. If your body loses much more fluid than you are drinking, you become dehydrated. Along with the fluids, your body also loses electrolytes (mineral salts). If you wait until you are thirsty during an athletic event, it is too late to replenish the fluids completely.

Risk Factors

- Diarrhea
- Vomiting
- Not eating much during an illness or after strenuous exercise
- Not drinking much during an illness or during or after strenuous exercise
- Medications that control excess body fluid (diuretics) by causing fluid loss
- Infants and the elderly are at greater risk for dehydration.

Potential Complications

- Reduced ability to dissipate heat, resulting in elevated core body temperatures
- Heat illness
- Heat stroke
- Kidney failure

Frequent Signs and Symptoms

- Thirst
- Dry, warm skin
- Dark urine
- Low urine volume
- Lightheadedness, especially when you stand from a sitting position
- Headache
- Muscle cramping
- Fainting
- Convulsions
- Low blood pressure
- Severe muscle contractions
- Rapid breathing
- Vomiting



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Prevention

- Do not wait until you are thirsty to start to replenish fluids when playing sports.
- Drink small amounts of fluid frequently throughout and after sporting events.
- Drink extra fluids to keep up with any ongoing losses (such as through sweating, diarrhea).
- Carry extra water and the ingredients for making an oral rehydration solution (ORS).
- If you have diarrhea or vomiting, or you are not drinking much, force yourself to drink more liquids before you become dehydrated.

Treatment Considerations

If you are mildly dehydrated, you need to drink enough liquid to replace the fluids you lost. Also, you need to replace the electrolytes you lost. Drinking sips of water slowly, along with eating foods with salt, will replace the fluids and salts you lost. Over-the-counter medicines are available that help replenish fluids and electrolytes. You also can replace fluids and electrolytes by drinking sports drinks, or other ORS. Drink the solution immediately. Do not wait until dehydration becomes severe.

Packets of oral rehydration salts are widely available. Mix the contents of a packet with one quart or liter of drinking water. If you are not sure if the water is safe to drink, first boil the water for at least five minutes. If you do not have a sports drink or ORS packet, you can make an oral rehydration solution by adding 2 tablespoons of sugar or honey, $\frac{1}{4}$ teaspoon salt and $\frac{1}{4}$ teaspoon baking soda to 1 quart or liter of water. If you don't have any baking soda, add another $\frac{1}{4}$ teaspoon of salt. If possible, add $\frac{1}{2}$ cup orange juice or mashed banana to improve the taste and provide potassium.



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Drink sips of the ORS every five minutes until urination becomes normal. (It is normal to urinate four or five times a day). Adults and adolescents should drink at least 3 quarts or liters of ORS a day until they are well. If you are vomiting, keep trying to drink the ORS. Your body will retain some of the fluids and salts you need even though you are vomiting. Remember to take only sips of liquids. Chilling the ORS may help. If you have diarrhea, keep drinking the ORS. The fluids will not increase the diarrhea. If you have symptoms of severe dehydration, you need to go to an emergency room, or other healthcare facility, to get intravenous (IV) fluids. If you are able to drink, you also should drink the ORS. With treatment for dehydration, whatever is causing diarrhea, vomiting, or other symptoms also should be treated.



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