

Fluids and Exercise

How important are fluids?

Fluid replacement is probably the most important nutritional concern for athletes. About 60% of your body weight is water. As you exercise, fluid is lost through your skin as sweat and through your lungs when you breathe. If this fluid is not replaced regularly when you exercise, you can get dehydrated.

When you are dehydrated, a smaller amount of blood circulates through your body. Your heart pumps less blood with each beat and your muscles do not get enough oxygen from your blood. Soon exhaustion sets in and your athletic performance suffers.

If you have lost as little as 2% of your body weight due to dehydration, it can adversely affect your athletic performance. For example, if you are a 150-pound athlete and you lose 3 pounds during a workout, your performance will start to suffer unless you replace the fluid you have lost. Proper fluid replacement is the key to preventing dehydration and reducing the risk of heat injury during training and competition.

How can I prevent dehydration?

Drink plenty of fluids **before, during, and after** a workout or race. Often athletes are not aware that they are losing body fluid or that their performance is being impacted by dehydration.

If you are not sure how much fluid to drink, use one of these methods.

1. **Weight.** Weigh yourself before practice and again after practice. For every pound you lose during the workout you will need to drink 2 cups (16 ounces) of fluid.
2. **Urine color.** Check the color of your urine. If it is a dark gold color like apple juice, you are dehydrated. If you are well hydrated, the color of your urine will look like pale lemonade.

Thirst is not a good way to judge how much fluid you have lost. If you wait until you are thirsty to replenish body fluids, then you are already dehydrated. Most people do not get thirsty until they have lost more than 2% of their body weight. And if you only drink enough to quench your thirst, you may still be dehydrated.

Keep a water bottle handy when you work out. Drink as often as you want, ideally every 15 to 30 minutes. High school and junior high school athletes can bring a water bottle to school and drink between classes and during breaks so they show up at workouts hydrated.

What about sport drinks?

Researchers have found that sports drinks that contain between 6% and 8% carbohydrate (sugars) are absorbed into the body as fast as water. Sports drinks can provide energy to working muscles that water cannot. This extra energy can

delay fatigue and may improve performance, especially if the sport lasts longer than 1 hour. If you drink a sports drink, you can keep your blood sugar level even when the sugar stored in your muscles (glycogen) is running low. This allows your body to continue to produce energy at a high rate.

Drinks containing less than 5% carbohydrate do not provide enough energy to improve your performance. So, athletes who dilute sports drink are most likely not getting enough energy from their drink to keep a good blood sugar level. Drinks that contain more than 10% carbohydrates (most soda pop and some fruit juices) can cause stomach cramps, nausea, and diarrhea. This can hurt your performance.

Some sports drinks contain a small amount of protein. These have been found to help muscles recover.

What does the sodium in sports drinks do?

Sodium is an electrolyte needed to help keep proper fluid balance in your body. Sodium helps your body absorb and retain more water. Researchers have found that the fluid from an 8-ounce serving of a sports drink with 6% carbohydrates (sugars) and about 110 mg of sodium absorbs into your body faster than plain water.

Some parents, coaches, and athletes are concerned that sports drinks may contain too much sodium. However, most sports drinks are actually low in sodium. An 8-ounce serving of Gatorade has a sodium content similar to a cup of 2% milk.

What are guidelines for fluid replacement?

- Drink a sports drink containing carbohydrate to help give you more energy during intense training and long workouts.
- Drink fluids that contain a small amount of sodium and other electrolytes (like potassium and chloride).
- Find a beverage that tastes good. Something cold and sweet is easier to drink.
- Drink 10 to 16 ounces of cold fluid about 15 to 30 minutes before workouts. Drinking a sports drink with a 6% to 8% carbohydrate level helps build up energy stores in your muscles.
- Drink 4 to 8 ounces of cold fluid every 10 to 15 minutes during exercise.
- Start drinking early in your workout because you will not feel thirsty until you have already lost 2% of your body weight. By that time, your performance may have started to decline.
- Avoid carbonated drinks, which can cause gas and may decrease fluid volume.
- Practice drinking fluids while you train. If you have never used a sports drink don't start during a meet or on race day. Try different fluids until you find the drink that works for you.

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