

Hydration for Young Athletes By Rob Busse, PT, MS, CMTPT

Hydration is important during exercise. The body's best defense against overheating is sweat evaporating from an athlete's skin and water evaporating from the respiratory system. Hydration is crucial for temperature regulation and maintaining blood volume. Fluid losses of as little as 2 % of body weight can have a negative effect on athletic performance, primarily causing fatigue.

Gatorade (sports drinks) vs. Water

Sports drinks, such as Gatorade, claim that the athlete will improve his or her performance when using the product. This claim may be true, depending on the length and intensity of the athlete's workout or competition. Research has shown that when you exercise for more than an hour, you need to replenish electrolytes. When you exercise heavily, you lose electrolytes in your sweat, particularly sodium and potassium. David Spierer, professor of sports sciences at Long Island University, identifies electrolytes as minerals in your blood and other body fluids that are electrically charged. These positively and negatively charged minerals allow for a balance in key systems throughout the human body. Electrolytes are important because they affect the amount of water in your body, the acidity of your blood (pH), muscle function, and other important processes. Examples of electrolytes include calcium, sodium, magnesium, and potassium. When an athlete exercises for more than an hour, there is a decrease in sodium and potassium levels. Replenishing these electrolytes is helpful. Sports drinks contain sodium, potassium and sometimes other electrolytes. Most sports drinks also contain carbohydrate, which provides the athlete with an energy boost during longer periods of exercise. Sports drinks with 4 – 8 percent carbohydrate and 0.5g sodium/L are more effective than water during extended periods of exercise.

Exercising for shorter periods of time does not require replenishing electrolytes. Water is just as effective in keeping an athlete hydrated during shorter periods of sports activity.

Gatorade

Nutrition Facts [per 20 oz. bottle] % Daily Value

Sodium:	11 %
Potassium:	2 %
Carbohydrate:	11 %
Fat:	0 %
Protein:	0 %

How Much Water is Enough?

The American College of Sports Medicine recommends hydrating before exercise as well as during and after workouts, whether using a sports drink or water. The standard recommendation is 500ml (appx 16 oz) two hours before activity, 150 – 250ml (appx. 5-8 oz) every 15 - 20 minutes during activity, and 450 – 675ml (appx. 15- 22 oz) for every 0.5kg of weight loss a person experiences after exercise.

Bottom Line

It is important for athletes to keep their bodies well hydrated to improve performance and for overall health. The use of sports drinks can be valuable when exercising for extended periods. Maintaining the electrolyte levels in the human body has been proven to be helpful during exercise.

References

David K. Spierer, Assistant Professor of Sports Sciences at Long Island University, Brooklyn Campus.

Hughston Sports Medicine Foundation: Water vs Sports Drinks “Gatorade or Water? Texas Medical Assoc. Report Analyzes Benefits of Sports Drinks”; Ken Ortolon; June 16, 2005.

David C. Dugdale, III, MD, Professor of Medicine, Division of General Medicine, Department of Medicine, University of Washington School of Medicine.

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