

about the
AUTHOR

Debra Wein, MS, RD, LDN, CSSD, NSCA-CPT is a faculty member at the University of Massachusetts Boston and adjunct lecturer at Simmons College. Debra is the President and Co-founder of Sensible Nutrition, Inc. (www.sensiblenutrition.com), a consulting firm established in 1994 that provides nutrition services to athletes, individuals, universities, corporate wellness programs and nonprofit groups. Debra is certified as a Specialist in Sports Dietetics (CSSD) through The American Dietetic Association. Her sport nutrition handouts and free weekly email newsletter are available online at www.sensiblenutrition.com.

Kristine Welch is a certified personal trainer through the American College of Sports Medicine and currently completing a dietetic internship to become a registered dietitian. Her focus and interest is preventative health and nutrition.

Avoid Sport Beverage Blunders: Which One is Right For You?

Sports drinks are a concentration of water, carbohydrates and electrolytes that are designed to replenish athletes' energy and fluid balance. They are recommended to hydrate athletes involved in sustained, intense exercise lasting longer than one-hour to mainly add carbohydrates for energy (1). Sports drinks add fuel to the muscles for extended exercise or recovery of muscle glycogen after exercise (3).

The goal of drinking during exercise is to prevent dehydration, considered >2% fluid loss in body weight (1), which ultimately hinders performance. Electrolytes, such as sodium and potassium, are commonly added to sports drinks to replace losses from sweating. Sodium is the main electrolyte lost in sweat and replacement is necessary for athletes participating in prolonged exercise of three hours or more (marathons, triathlons, etc.) for prevention of hyponatremia or water intoxication(5). Hyponatremia occurs when too much water is consumed, dangerously lowering sodium and potassium levels. The replacement of electrolytes lost during exercise of less than 3 hours can be met through meals consumed post exercise, not necessarily through a sports drink (3).

People that workout less than one hour should drink plain water for hydration (1). If plain water does not suit you, enhanced water or water with added flavors are good substitutes. Try mixing water with a few ounces of juice for flavor. Sodium in these drinks could provide benefit because it stimulates thirst, resulting in rehydration (5).

The carbohydrate recommendation for sports drinks is to provide 30 – 60 grams of carbohydrate per hour (1). Drinks that contain 60 – 80 calories per 8 ounces supply the needed carbohydrates required for continuous performance to prevent muscle fatigue. Ideally, the best way to refuel carbohydrates is with a combination of sugars (ex: glucose, sucrose, fructose, maltodextrine) and the concentration should be 6 – 8% carbohydrate (or 14.2 – 18.9 grams per 8 oz.), as highly concentrated carbohydrate beverages are shown to reduce gastric emptying and can even produce stomach upset (3). Furthermore, fructose should not be the main carbohy-

drate source during exercise because it is converted too slowly into an energy source and can cause gastrointestinal distress (1).

Many sports drinks now contain added protein. These drinks provide a 4:1 carbohydrate to protein ratio designed to increase endurance and sports performance. A 2006 study published by *Medicine & Science in Sports & Exercise* found that adding 2% protein to a 6% carbohydrate drink provided no additional performance benefit during sports activity in which athletes normally compete (2). The additional protein provides greater caloric intake during exercise and recovery which may account for any improvements seen in performance (4). However, at this time more research is needed on this subject.

Enhanced water is a general term for water that contains additions of flavor, color or vitamins and minerals. Enhanced waters (e.g., Gatorade's Propel, Glaceau's Vitamin Water, Sobe's Life Water, etc.) have less calories and electrolytes than sports drinks and are intended for everyday consumers as well as athletes not participating in intense activity. Are these beverages necessary? No. On the other hand, research shows that children (and adults) will drink more and stay hydrated better if the water is enhanced with flavor (6).

Although one serving can provide between 10 – 100% of the DRI for some vitamins, (Table 2), it is possible that these beverages, along with a multivitamin and the nutrients naturally found in foods could bring a person's intake to levels close to or exceeding the upper level recommendations for that nutrient.

Drinking enhanced water does help meet fluid needs but the vitamins supplied do not substitute for a meal and these drinks do have added calories that are not present in regular water. So if weight loss is the primary goal, drinks like Sobe Life and Vitamin Water which provide 120 – 150 calories per bottle, will add unnecessary calories.

Enhanced waters made with artificial sweeteners, such as Propel, provide minimal carbohydrates. Although Propel is more suited for hydrating people trying to lose or

Tables 1 and 2

Sports Drink (8 oz serving)	Calories	CHO (g)	CHO source	Protein (g)	Sodium (mg)	Artificial Sweetener
Gatorade	50	14	Sucrose, glucose-fructose solution	0	110	No
Powerade	70	19	High fructose corn syrup, maltodextrin	0	55	No
AllSport	65	16	Sucrose	0	54	No
Accelerade	80	15	Sucrose	4	120	No

Enhanced Water (8 oz)	Calories	CHO source	CHO (g)	Protein (g)	Sodium (mg)	Vitamins	Artificial Sweetener
Propel	10	Sucrose	3	0	35	Vitamin C: 10%; Vitamin E: 10%; Niacin: 25%; Vitamin B6: 25%; Vitamin B12: 4%; Pantothenic acid: 25%	Sucralose
Vitamin Water	50	Fructose	13	0	0	Vitamin B3:10%, Vitamin B5:10%, Vitamin B6:10%, Vitamin B12:10%, Vitamin C: 60%	No
Sobe Life Water	40	Sucrose	10	0	35	Vitamin C: 100%; Vitamin E: 20%; Niacin: 10%; Vitamin B6: 10%; Vitamin B12: 10%; Pantothenic acid: 10%	No

maintain weight, they are not suited for athletes engaging in long, intense exercise routines.

In summary, athletes that exercise intensely for 1 hour or more need additional carbohydrates and fluid replacement than simply water alone. Athletes participating in prolonged exercise for 3 hours or more need fluid, carbohydrate and electrolyte replacement. Enhanced waters provide hydration, but also calories that can contribute to weight gain if not used in moderation. ■

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