Consumption of Sports Drinks by Children and Adolescents

Healthy Eating Research
Building evidence to prevent childhood obesity

Issue Brief, June 2012

Introduction

Over the past three decades, U.S. children and adolescents have significantly increased their consumption of sugar-sweetened beverages (SSBs). The per-capita caloric contribution of SSBs to children's and adolescents' diets increased from 204 calories per day in 1988–1994 to 224 calories per day in 1999–2004. Adolescents now obtain 10 percent to 15 percent of their caloric intake from SSBs. Consumption of SSBs is associated with excess weight gain, poor nutrition, displacement of healthful beverages, and a higher risk for obesity and diabetes.

The term sugar-sweetened beverages is often associated with traditional carbonated beverages, such as sodas. However, this category of beverages also includes sports drinks or electrolyte drinks, sweetened tea, fruit-flavored drinks and punches, and other beverages that contain large amounts of added sugar.

Sports drinks were created in 1965 in the United States. They were designed for athletes or individuals participating in prolonged vigorous physical activity, particularly activities performed in high temperatures and humidity. In addition to water, sports drinks contain carbohydrates and electrolytes (primarily sodium and potassium). Depending on the brand, some sports drinks contain as much as 19 grams of added sugar, 200 milligrams of sodium, and 80 calories per 8 ounces.

While sports drinks were designed for athletes, they are now commonly consumed by youths and non-athletes in the United States. Adolescents who consume sports drinks more than once a day are more likely to be male, Black or Hispanic, eat at fast-food restaurants more than once a week, and be physically inactive. Although some children and adolescents find sports drinks appealing because of their perceived link to athletic performance, many consume sports drinks simply to quench their thirst or as a substitute for soda. Increasingly, sports drinks also are being consumed by non-athletes–those who simply like the taste of sports drinks or who are looking for a different kind of beverage.

This issue brief is based on a research review prepared by Mary Story, PhD, RD, and Laura Klein, MPH, University of Minnesota. The full research review, which includes citations, is available at www.healthyeatingresearch.org.

The Evidence

Sports drink consumption is increasing.

- From 1989–2008, the percentage of American children ages 6 to 11 consuming sports drinks increased significantly, from 2 percent to 12 percent. The amount of sports drinks consumed by these children also increased, from 255 milliliters per day to 289 milliliters per day during the same timeframe.
- In 2006, sports drinks were the third-fastest growing beverage category in the U.S. In 2008, sports drinks sales were $7.5 billion, increasing in volume by 17 percent between 2004 and 2008.

Sports drink manufacturers are targeting children and adolescents.

- In 2010, Gatorade television ads were ranked among the top five most-advertised products seen by children and adolescents. Powerade television ads were ranked twenty-sixth.

Sports drinks are marketed as a healthy alternative to soda.

- Many parents are confused by the nutritional content of sports drinks. Even though the American Academy of Pediatrics recommends that most children and adolescents should not consume sports drinks, more than a quarter (27%) of parents believe that sports drinks are healthy for children, and 40 percent believe that Gatorade is healthy.
- Since beverage manufacturers voluntarily phased out full-calorie soda from schools, they have promoted sports drinks as a healthier alternative, with some success. Sports drinks increased their market share in schools from 14.6 percent in 2004 to 20 percent in the 2006–2007 school year, while the market share of sodas decreased from 39.9 percent to 29.8 percent in the same timeframe.

The benefits of sports drinks are appropriate only for athletes or individuals engaging in prolonged vigorous physical activity, and/or those activities performed in high temperatures and humidity.

- According to the American Academy of Pediatrics, children participating in vigorous exercise should drink water before, during, and after exercise. If children are participating in prolonged vigorous physical activity in hot, humid conditions for more than one hour, small amounts of sports drinks may be appropriate. However, for the typical child or adolescent engaging in routine physical activity for less than three hours in normal weather conditions, the use of sports drinks in place of water is unnecessary.

The average American child or adolescent does not engage in enough physical activity to warrant consumption of sports drinks.

- According to a 2009 Centers for Disease Control and Prevention survey among students in grades 9 through 12, in the 50 U.S. states and the District of Columbia, only 18.4 percent of students participated in any kind of physical activity that increased their heart rate and made them breathe hard some of the time for at least 60 minutes per day on each of the seven days before the survey.

Water and a balanced diet are recommended and optimal for children and adolescents who do not participate in high-intensity physical activity lasting more than one hour.

- The Academy of Nutrition and Dietetics (formerly the American Dietetic Association) recommends water as the best and most economical source of fluid for activity lasting less than an hour for adolescent athletes in organized sports.

Sports drinks are a source of added sugars and contribute to excess energy intake.

- Sports drinks are a source of empty or nutrient-poor calories and are categorized as an SSB. Sports drinks contain 50 percent to 90 percent of the calories found in soda. Full-calorie sports drinks contain three to five teaspoons of sugar per 8-ounce serving.

Consumption of sports drinks may increase risk for poor dental health.

- Citric acid, which is often included in sports drinks, erodes tooth enamel.

Sports drinks are a source of sodium and contribute to increasing sodium intakes among American youths.

- The Dietary Reference Intake for sodium is no more than 1,500 milligrams to 2,300 milligrams per day for children and adolescents (depending on age).
- The 2007–2008 National Health and Nutrition Examination Survey (NHANES) data revealed that sodium intake among children and adolescents exceeds the level recommended in the 2010 *Dietary Guidelines for Americans*. In 2007–2008, the mean sodium intake for children ages 6 to 11 and adolescents ages 12 to 19 was 2,933 milligrams and 3,505 milligrams, respectively. Sodium intake of males for all ages was higher than that of females.

Sports drinks may displace necessary nutrients for growing youths.

- Among children and adolescents, intake of SSBs has been shown to be negatively associated with intake of milk, as well as calcium, vitamin D, folate, and iron.

Conclusions and Policy Implications

Sports drinks, along with sodas, energy drinks, fruit-flavored drinks, and other SSBs, are the top source of added sugars in the American diet, accounting for 46 percent of added sugar intake. Eleven percent of overall energy intake in children ages 2 to 18 comes from SSBs. Most children today consume four to six times more added sugars than the maximum recommended daily amount. The American Heart Association recommends that most children and adolescent girls consume no more than 20 grams of added sugars per day, and adolescent boys consume no more than 33 grams of added sugars per day.

Given the already elevated levels of added sugar in the American diet and its detrimental impact on health, the increased consumption of sports drinks in recent years is of growing concern for parents, health professionals, and public health advocates. While sports drinks may be beneficial for athletes and individuals participating in prolonged vigorous physical activity in warm to high temperatures, in the case of most children and adolescents, water is the recommended and optimal fluid for hydration. Parents, teachers, coaches, and children and adolescents need to understand the potential risks of consuming sports drinks. They also need to learn how to counteract marketing that leads youths to believe that consuming sports drinks will enhance athletic performance.

The available evidence points to the following policy implications related to consumption of sports drinks by children and adolescents:

- Fresh, safe, and free drinking water should be available at all times for children and adolescents, especially in schools and on athletic fields, recreational facilities, out-of-school time programs, and parks.
- Sports drinks should not be available or advertised throughout the school setting, and should not be available as options for purchase from school vending machines, school stores, the cafeteria, and other school facilities. Exceptions may apply for students participating in sports programs involving prolonged vigorous physical activity.
- School and community coaches, school nurses, physicians, dietitians, and out-of-school time staff and volunteers should help educate parents and youths about the need to consume water instead of sports drinks, except when participating in prolonged vigorous physical activity.
- Federal agencies should monitor the advertising and promotion of sports drinks to ensure that product health and nutrient claims are accurate and not misleading. These products should not be advertised directly to children and adolescents.

- The United States Department of Agriculture (USDA) should propose and finalize updated standards for foods and beverages sold outside the federal school meals program (through vending, à la carte, school stores, and fundraisers). Beverages for sale in elementary and middle schools should be limited to water, nonfat or low-fat (1 percent or less) milk or USDA-approved milk alternatives, and 100 percent fruit juice with no added sugar. In high school settings, USDA also might permit the sale of other low-calorie beverages.

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Scan to view the full research review.

About Healthy Eating Research

Healthy Eating Research is a national program of the Robert Wood Johnson Foundation. Technical assistance and direction are provided by the University of Minnesota School of Public Health under the direction of Mary Story, PhD, RD, program director, and Karen M. Kaphingst, MPH, deputy director. The Healthy Eating Research program supports research to identify, analyze, and evaluate environmental and policy strategies that can promote healthy eating among children and prevent childhood obesity. Special emphasis is given to research projects that benefit children and adolescents ages 3 to 18 and their families, especially in lower-income and racial and ethnic populations at highest risk for obesity.

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