

Approaches to Reduce Sports Drink Consumption Among Adolescents

Abstract: *Sports drinks originally developed to improve performance and prevent or treat dehydration, heat stroke, and muscle cramps in elite athletes are consumed regularly by nearly 60% of the adolescent population. Sports drinks are often perceived as healthy, and marketing campaigns fail to delineate the types and amount of activity that warrant appropriate use. Current trends in adolescent consumption of sports drinks will be reviewed and approaches to reduce consumption, including counseling on the appropriate use of sports drinks, will be discussed.*

Keywords: sports drinks; sugar-sweetened beverages; pediatrics; overweight; obesity



Sports drinks originally developed to improve performance and prevent or treat dehydration, heat stroke, and muscle cramps in elite athletes have experienced an immense rise in consumption among recreational athletes, moderate exercisers, and sedentary individuals alike.^{1,2} This inappropriate use results in an increase in unnecessary calories and added sugar, which has been tied to overweight, obesity, and other cardiometabolic risk

factors.³⁻⁵ Sports drink consumption is particularly problematic for adolescents who consume approximately 9% of their daily caloric intake from sugar-sweetened beverages (SSBs).⁶ Although great strides have been made in reducing the overall consumption of SSBs in adolescents, sports drinks are often overshadowed by soda or overlooked because of their perceived healthfulness. The 2015 Youth Risk Behavior Survey (YRBS) found that nearly 60% of adolescents report past week consumption of sports drinks, a

the appropriate use of sports drinks, will be discussed.

Current Trends in Adolescent Consumption of Sports Drinks

A study conducted by Cordrey et al² examined the use of sports drinks among adolescents using data from the 2010 National Youth Physical Activity and Nutrition Survey and the 2015 YRBS. The study found that adolescent past week

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slight increase from 2010.² The 2015 Dietary Guidelines for Americans recommend limiting added sugars to less than 10% of total daily caloric intake and specify elimination of SSBs as one strategy to achieve this recommendation.⁷ Current trends in adolescent consumption of sports drinks will be reviewed and approaches to reduce consumption, including counseling on

consumption of sports drinks increased slightly from 56.0% in 2010 to 57.6% in 2015 ($P = .002$). The 2015 survey found that 31.8% of adolescents consumed 1 to 3 sports drinks in the past week, 11.9% consumed 4 to 6 sports drinks in the past week, and 3.2% consumed 4 or more sports drinks daily. Whereas the overall prevalence of sports drink consumption increased slightly, the

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number of adolescents reporting daily consumption of sports drinks is down from 16.1% in 2010 to 13.8% in 2015 ($P < .0001$).

The 2015 analysis found that boys, non-Hispanic African Americans, Hispanics, and tobacco users were at greater risk for daily sports drink consumption. Additionally, adolescents who watched more than 2 hours of television daily were more likely to be daily sports drink consumers compared with those who watched television for 2 hours or less daily.

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Addressing Marketing and Product Image

The increase in sports drink consumption is at least partly a result of product marketing. The sports drink industry has instilled the idea that maintaining hydration is essential to athletic training, performance, and recovery. In a compelling investigative piece in the *British Medical Journal*, Deborah Coehn describes the evolution of sports drink marketing and the heavy influence of the sports drink industry on sports health and nutrition authorities.⁸ The piece argues that many of the sports nutrition guidelines promoting use of sports drinks are authored by industry sponsored scientists and sports medicine organizations.

Furthermore, sports drinks, although developed for elite athletes, market to the greater public. During a period of rebranding in 2010, Gatorade's chief marketing officer identified 13- to 17-year-old high school athletes as their product's core target.⁹ Endorsements by elite athletes and claims of hydration benefits with little thought to the types and amount of activity that warrant sports drink use lead to the perception that sports drinks are healthy. A study from the Yale University Rudd Center for Food Policy and Obesity confirms this idea, finding that more than 1 in 4 American parents believe that sports

drinks are healthy for children.¹⁰ However, a 20-oz bottle contains as much as 140 calories and 34 g of sugar, and consumption has been implicated in weight gain, dental erosion, obesity, and diabetes.^{3,5,11,12}

Reducing Availability in Schools

The observed reduction in adolescent caloric intake from SSBs is partly a result of policies in schools that limit the availability of such products for student consumption.¹³ Whereas the first wave of legislation focused on elimination of non-diet soda, research indicated that many students simply shifted their consumption from soda to sports drinks or other SSBs which remained available through vending machines or direct sale to students during school hours.¹⁴ The Healthy, Hunger-Free Kids Act of 2010, specifically the Smart Snacks Standards (which went into place in the 2014-2015 academic year), are a step in the right direction.¹⁵ The Smart Snacks Standards are a federal requirement for all foods sold outside the National School Lunch Program and School Breakfast program, which includes beverages available to students during the school day. The standards allow the sale of water, unflavored or flavored low-fat or fat-free milk, 100% fruit or vegetable juice, and low- or no-calorie beverages on campus. Products that do not meet these standards are prohibited. To be considered low calorie, the beverage must contain no more than 5 calories per fluid ounce.

Health Care Provider Screening and Counseling

Providers caring for adolescent patients should screen for consumption of SSBs and ask specifically about non-soda beverages, including sports and energy drinks, flavored waters, and non-100% juices. Providers should counsel both parents and adolescents about appropriate use of sports drinks. According to the American Academy of Pediatrics (AAP), "for the average child engaged in routine physical activity, the use of sports drinks in the place of water on the sports field or in the lunchroom is generally unnecessary (p. 1183)."¹⁶ Unless

adolescents are involved in vigorous, competitive endurance or repeated-bout sports in which activity exceeds 60 minutes in duration or the athlete is exposed to hot, humid environments for prolonged periods, water is generally the appropriate first choice for hydration before, during, and after exercise. Furthermore, the AAP indicates that for most adolescents, a healthy balanced diet sufficiently meets the daily protein and electrolyte requirements.

Conclusions

Sports drink consumption contributes to the weight-related conditions on the rise in our adolescent population. Although great strides have been made to reduce school-based availability of full sugar sports drinks, aggressive marketing has left both adolescents and parents confused about the utility and healthfulness of these beverages. Thus, there is a continued need to help adolescents make informed choices about their beverage consumption. Health care providers should screen for SSB intake and ensure that parents and adolescents are aware that sports drinks fall under this category. Clear messaging should be provided about the appropriate use of sports drinks and the potential health consequences of improper consumption.

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Informed Consent

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Trial Registration

Not applicable, because this article does not contain any clinical trials. **AJLM**

References

1. Kays J, Philips-Han A. Gatorade: the idea that launched an industry. *Explore*. 2003;8(1).
2. Cordrey K, Keim SA, Milanaik R, Adesman A. Adolescent consumption of sports drinks. *Pediatrics*. 2018;141:e20172784.
3. Malik VS, Popkin BM, Bray GA, Després JP, Willett WC, Hu FB. Sugar-sweetened beverages and risk of metabolic syndrome and type 2 diabetes: a meta-analysis. *Diabetes Care*. 2010;33:2477-2483.
4. Te Morenga L, Mallard S, Mann J. Dietary sugars and body weight: systematic review and meta-analysis of randomized controlled trials and cohort studies. *BMJ*. 2013;346:e7492.
5. Malik VS, Pan A, Willett WC, Hu FB. Sugar-sweetened beverages and weight gain in children and adults: a systematic review and meta-analysis. *Am J Clin Nutr*. 2013;98:1084-1102.
6. Rosinger A, Herrick K, Gahche J, Park S. *Sugar-Sweetened Beverage Consumption Among US Youth, 2011-2014*. Hyattsville, MD: US Department of Health and Human Services; Centers for Disease Control and Prevention; National Center for Health Statistics; 2017. NCHS data brief, no. 271. <https://www.cdc.gov/nchs/data/databriefs/db271.pdf>. Accessed November 12, 2018.
7. US Department of Health and Human Services; US Department of Agriculture. *2015-2020 Dietary Guidelines for Americans*. 8th ed. Washington, DC: US Department of Health and Human Services; US Department of Agriculture; 2015. <http://health.gov/dietaryguidelines/2015/guidelines/>. Accessed November 12, 2018.
8. Cohen D. The truth about sports drinks. *BMJ*. 2012;345:e4737.
9. Zmuda N. What's a sport? Gatorade redefines to broaden target. <http://adage.com/article/news/a-sports-drink-pepsi-s-gatorade-broadens-target/143217/>. Published April 12, 2010. Accessed November 5, 2018.
10. Sugary drink f.a.c.t.s. Home page. <http://www.sugarydrinkfacts.org/>. Accessed November 12, 2018.
11. PepsiCo. The facts about your favorite beverages. <http://www.pepsicobeveragefacts.com/Home/Product?formula=33877&form=RTD&size=20>. Accessed November 5, 2018.
12. Shaw L, Smith AJ. Dental erosion—the problem and some practical solutions. *Br Dent J*. 1999;186:115-118.
13. Kit BK, Fakhouri TH, Park S, Nielsen SJ, Ogden CL. Trends in sugar-sweetened beverage consumption among youth and adults in the United States: 1999-2010. *Am J Clin Nutr*. 2013;98:180-188.
14. Taber DR, Chriqui JF, Vuillaume R, Kelder SH, Chaloupka FJ. The association between state bans on soda only and adolescent substitution with other sugar-sweetened beverages: a cross-sectional study. *Int J Behav Nutr Phys Act*. 2015;12(suppl 1):S7.
15. United States Department of Agriculture Food and Nutrition Services. A guide to smart snacks in schools for school year 2018-2019. https://fns-prod.azureedge.net/sites/default/files/tn/508_USDASmartSnacks_508_82218.pdf. Accessed October 31, 2018.
16. Committee on Nutrition and the Council on Sports Medicine and Fitness. Sports drinks and energy drinks for children and adolescents: are they appropriate? *Pediatrics*. 2011;127:1182-1189.