

**Soft Drinks and
School-Age Children:**

Trends

Effects

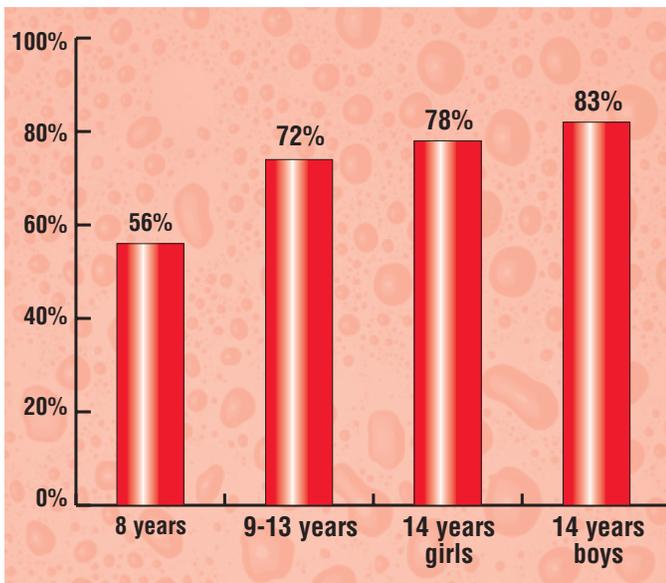
Solutions

Trends in Soft Drink Consumption

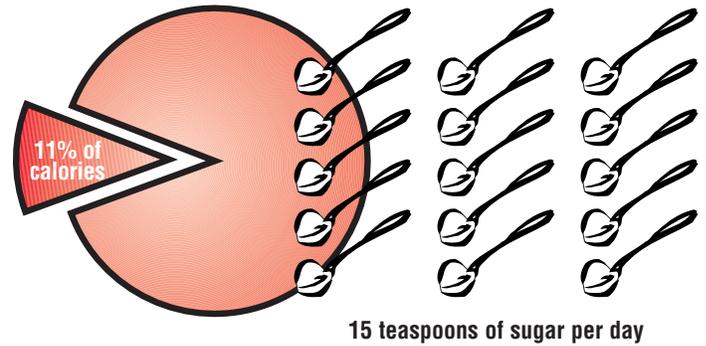
According to the USDA, the per capita soft-drink consumption has increased almost 500% over the past 50 years. Soft drinks include soda, fruit-flavored and part-juice drinks and sports drinks. Half of all Americans consume soft drinks daily—most of which are sugar-sweetened.¹ Soda is the soft drink most frequently consumed. Enough regular soda is produced to supply EVERY American with over 14 ounces of soda every day.² The availability of soda in the U.S. now exceeds that of milk.³ This is a growing concern for children and adolescents.

Children start drinking soda at a remarkably young age and consumption increases through young adulthood.⁴ Fifty-six percent of 8-year-olds consume soft drinks daily and a third of teenage boys drink at least three cans of soda a day.⁵ On average, adolescents get 11% of their calories or 15 teaspoons of sugar from soft drinks.⁴ This high consumption of sugar is contrary to the Dietary Guidelines for Americans 2000 which recommend choosing sensibly to limit intake of beverages and foods that are high in added sugar.

Percent of Children Drinking Soft Drinks Daily⁵

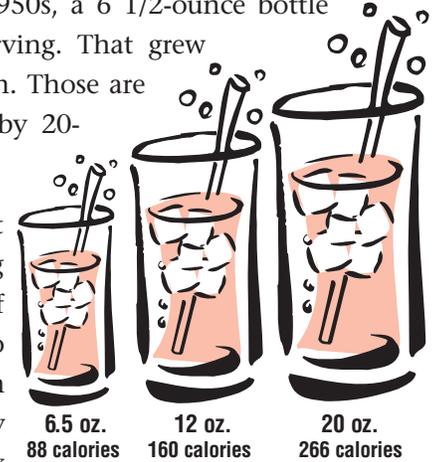


Soft Drink Contribution to Diets of Adolescents⁶



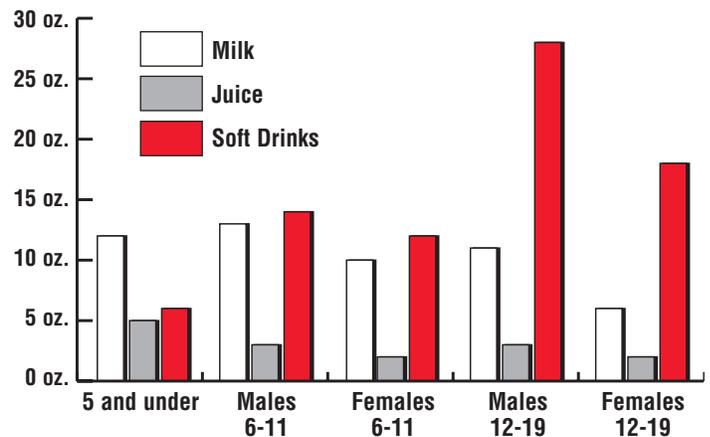
One reason for the increasing consumption of soft drinks is that the industry has steadily increased container sizes. In the 1950s, a 6 1/2-ounce bottle was the standard serving. That grew into the 12-ounce can. Those are now being replaced by 20-ounce bottles.⁴

Not only are soft drinks contributing significant amounts of calories and sugar to the diets of children and adolescents, they are also replacing milk as the beverage of choice. In fact, teenage boys and girls are drinking twice as much soda as milk.⁴



Beverage Consumption of Children and Adolescents in the U.S.

(Average quantities [in ounces] per day)⁶



The Health Effects of Soft Drink Consumption

When children and adolescents replace milk with soft drinks, they lose out on valuable nutrients needed for normal growth and development. Only 36% of boys and 14% of girls are getting enough calcium. High soft-drink consumption is also correlated with low intakes of magnesium, vitamin A, vitamin C and riboflavin, as well as high intakes of calories, fat and carbohydrates.⁴

Nutrient Composition of Non-diet Soda, Orange Juice and Low-fat Milk²

	Non-diet Soda	Orange Juice	1% Milk
Per 12-ounce serving			
Calories, kcal	160	168	153
Vitamin A, IU	0	291	750
Vitamin C, mg	0	146	3
Calcium, mg	0	33	450
Magnesium, mg	0	36	51
Potassium, mg	0	711	352

According to the 2001 Surgeon General's *Call to Action to Prevent and Decrease Obesity*, today there are nearly twice as many overweight children and almost three times as many overweight adolescents as there were in 1980.⁷ Initial results from the 1999 National Health and Nutrition Examination Survey (NHANES), using Body Mass Index (BMI), indicate that an estimated 13 percent of children ages 6-11 years and 14 percent of adolescents ages 12-19 years are overweight.⁸ BMI, an index of a person's weight in relation to height, is commonly used to classify overweight and obesity among adults, and is also recommended to identify children who are overweight or at risk of becoming overweight. Children with a BMI \geq 85th percentile but $<$ 95th percentile are at

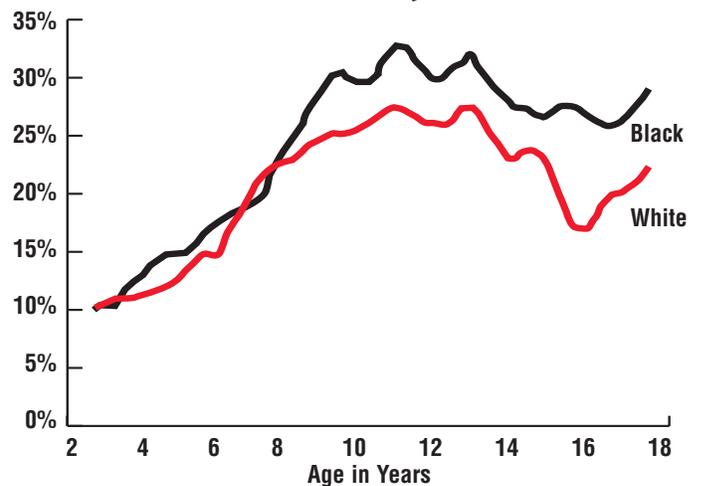
risk for overweight and children with a BMI \geq 95th percentile are overweight.⁸ North Carolina 2000 data from children seen in public health settings show an even greater increase in the number of overweight children.⁹

Percent of North Carolina Children Who Are Overweight⁹

	1995	2000	Increase
Ages 2-4	9.0%	12.2%	36.6%
Ages 5-11	14.7%	20.6%	40.1%
Ages 12-18	22.7%	26.0%	14.5%

Various environmental and social factors are contributing to this trend. The increasing consumption of sugar-sweetened soft drinks has been identified as one factor. A recent study of 12-year-olds found that for each additional serving of sugar-sweetened drink consumed daily, both BMI and frequency of overweight increased by 60% after adjustment for anthropometric, demographic, dietary and lifestyle variables.¹

Prevalence of Overweight (BMI \geq 95th Percentile) White and Black Children by Age North Carolina, 2000⁹



There are other health risks associated with excessive soft drink consumption. Low calcium intake contributes to osteoporosis, a disease leading to fragile and broken bones. The risk of osteoporosis depends in part on how much bone mass is built in early life. For girls, 92% of their bone mass is built by age 18 and if they are not consuming enough calcium during their teenage years, they cannot catch up later.⁴

Solutions to Reverse the Trends in Soft Drink Consumption

The Regulations

Research shows that there is a direct link between good nutrition and the ability to learn, play, grow and develop. Well-nourished children have higher test scores, better school attendance and fewer behavioral problems.¹⁰ Schools are important environments that impact children's nutrient intake. There are minimal regulations in place that foster the development of healthful eating habits.

The United States Department of Agriculture (USDA) has established regulations to control the sale of foods of minimal nutritional value in the food service area during school meal periods. The only foods included in this definition are carbonated beverages, hard candies, water ices (flavored ices) and chewing gum. USDA also allows states to establish such rules as necessary to control the sale of other competitive foods. Competitive foods are defined as any foods sold in competition with reimbursable school meals.

In 1976, the North Carolina State Board of Education adopted a policy stating that all food and beverages sold in the school must contribute to the nutritional well being of the child and aid in establishing good food habits.¹¹ This standard was changed by North Carolina Statute 115C-264 (1991) and states that each school may, with the approval of the local board of education, sell soft drinks to students so long as soft drinks are not sold (i) during the lunch period, (ii) at elementary schools, or (iii) contrary to the requirements of the National School Lunch Program.

The National Association of State Boards of Education (NASBE) recommends that elementary school students not have access to food or beverages in vending machines. The recommendation for middle and high schools provides two options: 1) no access during school hours or 2) no access until 30 minutes after the

end of the last lunch period.¹² Despite the recommendations of NASBE and other health and education organizations, many school policy officials are making different decisions, as they face mounting pressure to do more with less. The public is demanding qualified teachers, smaller classes and better-equipped facilities. However, schools may not be receiving adequate funds to fully address all these concerns. Many educators are responding to these pressures by considering nontraditional funding sources, including a proliferation of vending options.

Some school systems have chosen to contract with a soft drink company for the sole sale of one brand, which is referred to as a "exclusive beverage" or "pouring rights" contract. A significant part of the funding comes in an immediate lump sum with subsequent revenues tied to sales. It is important that contract terms be reviewed for language to avoid incentives that encourage students to increase their consumption of soft drinks.

Vending Machine Placement and Operation

Many middle/junior and high schools have employed strategies for limiting the sale of foods and beverages from vending machines.

- **Keep all vending machines turned off during regular school hours.**
- **Keep the machines off until the end of the last lunch period.**
- **Prohibit the sale of "foods of minimal nutritional value" until 30 minutes after the last lunch period.**
- **Prohibit the sale of soft drinks until the end of the school day.**
- **Place vending machines in out-of-the-way places to discourage their frequent use.**
- **Place vending machines far from the dining areas to optimize students' participation in the school food service program.**

Influencing Access to Soft Drinks in Schools

School districts that choose to rely on revenue generated from vending machines to pay for school site needs should make every effort to work towards the Healthy People 2010 objective of ensuring that all foods available at school contribute to good dietary quality. The Healthy Carolinians 2010 objectives that call for reducing the percent of children and adolescents who are overweight and obese; and reducing the percent of students who eat high-sugar snack foods on a given day¹³ support this national objective. The following recommendations will aid schools in striving for these objectives.

- Adhere to federal regulations and state and local policies regarding competitive foods, including soft drinks, sold in vending machines.
- Work with community partners to develop a comprehensive school nutrition policy that addresses appropriate beverage choices.
- Create demand for nutritious beverages by working with nutrition educators to design and implement educational and marketing activities.
- Never include incentives for increasing students' consumption of soft drinks in vending agreements. Ensure that signage, banners and advertising are prudent and that instructional areas are free of commercial advertising.¹²
- Guide sales in a more positive direction by including the following guidelines in vending agreements:
 - 100% fruit or vegetable juice, milk and bottled water are readily available throughout the day.
 - 100% fruit or vegetable juice, milk and bottled water are sold at attractive prices.¹²
 - Soft drink container sizes are moderate¹² (12 ounces rather than 20 ounces).
- Provide vending machines with low-fat and skim milk, including chocolate, strawberry and other popular flavors.
- Provide bottled water in vending machines and ensure access to water at no cost by having an adequate number of strategically placed water coolers.

Students Make Healthier Choices

Two school systems have demonstrated that when given a choice and with the right packaging and marketing mix, students will make healthful choices.

A School Board in **Madison, Wisconsin** decided not to renew an exclusive vending contract with a soft drink company. The board voted to continue selling soda in schools but with multiple vendors. It also pledged to add healthier beverages. A milk vending machine was installed at each of the four main high schools. Four flavors of milk are available: chocolate, chocolate malt, reduced-fat white and reduced-fat strawberry. The milk and juice machines stay on all day, while most of the soda machines are disabled during school hours. Students can buy milk and orange juice between classes and during some study halls, not just before and after school. While there were many skeptics, the schools now struggle to keep the milk vending machines stocked. The machines hold 16-ounce bottles of milk that sell for \$1.00.

In an attempt to increase the milk intake by teenagers, milk vending machines were installed in eleven high schools in **Miami-Dade County in Florida** as a pilot program of the dairy industry. The machines dispense colorful and resealable bottles of chocolate, strawberry and unflavored regular and low-fat milk for \$1.00. The initial response exceeded expectations. Machines run out of milk almost daily. The machines are placed next to or near soda and snack vending machines.

REFERENCES

1. Ludwig DS, Peterson, KE, Gortmaker S. Relationship between consumption of sugar-sweetened drinks and childhood obesity: a prospective, observational analysis. *Lancet*. 2001; 357: 505-508.
2. Nestle M. Soft drink "pouring rights": marketing empty calories. *Public Health Reports*. 2000; 115: 308-319.
3. Food and consumption (per capita) data system. USDA Economic Research Services. Available at <http://www.ers.usda.gov>.
4. Jacobson ME. Liquid candy: how soft drinks are harming Americans' health. Washington, DC: Center for Science in the Public Interest; 1989. Available at http://www.cspinet.org/sodapop/liquid_candy.htm.
5. Squires S. Soft drinks, hard facts: research suggests kids who drink a lot of soft drinks risk becoming fat, weak-boned, cavity-prone and caffeine addicted. *Washington Post*; February 27, 2001, p.HE10.
6. USDA, Continuing Survey of Food Intake by Individuals (CSFII), 1994-96. Available at <http://www.barc.usda.gov/bhnrc/foodsurvey/Cd98.html>.
7. *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*. US Government Printing Office, Washington, DC; 2001. Available at <http://www.surgeongeneral.gov/topics/obesity/>.
8. Prevalence of overweight among children and adolescents: United States. National Center for Health Statistics; 1999. Available at <http://www.cdc.gov/nchs/products/pubs/pubd/hestats/over99fig1.htm>.
9. North Carolina-Nutrition and Physical Activity Surveillance System (NC-NPASS) includes data on children seen in North Carolina Public Health Sponsored WIC and Child Health Clinics and some School Based Health Centers. Percentiles were based on the CDC/NCHS Year 2000 Body Mass Index (BMI) Reference.
10. The consequences of hunger and food insecurity for children. Brandeis University, Center on Hunger and Poverty; 2002. Available at <http://www.centeronhunger.org>.
11. North Carolina State Board of Education Policy Manual. Available at <http://sbepolicy.dpi.state.nc.us>.
12. Fit, healthy and ready to learn: a school health policy guide. National Association of State Boards of Education; March; 2000. Available at <http://www.nasbe.org/HealthySchools/fithealthy.mgi#healthy>.
13. Healthy Carolinians 2010: North Carolina's Plan for Health and Safety. Report of the Governor's Task Force for Healthy Carolinians; 2000. Available at <http://www.healthy-carolinians.org>.

Dear Advocate for Healthy Children:

The increasing level of soft drink consumption by North Carolina's children and teens is one of many barriers to their achieving an adequate diet and a healthy lifestyle. It is a trend that parents, schools and communities have the capacity to reverse. This publication focuses primarily on schools; however, schools cannot solve the problem alone.

Parents can:

- Help children learn to enjoy water as the thirst quencher of choice.
- Provide a variety of low-fat milks and 100% fruit and vegetable juices that are high in nutrients.
- Provide access to soft drinks as a "sometimes" beverage to be enjoyed in moderate amounts.
- Be a role model by making healthy beverage choices.

Communities can:

- Advocate for healthful environments that are consistent with classroom nutrition education.
- Secure funding for marketing campaigns focused on healthful eating.
- Work through community partnerships to ensure that milk, water and other nutritious beverages are offered wherever less nutritious beverages are available.
- Fund education so that schools do not compromise the health of children and youth by raising funds through the sale of foods and beverages low in nutrients and high in calories.

Increased consumption of soft drinks is a high profile issue that provides an extraordinary opportunity to raise awareness of the unintended health consequences of personal and group decisions. Successful change in this area can lead to improved policy in other areas that will help ensure a healthy future for North Carolinians.

Yours for a Healthy North Carolina,
The School Nutrition Action Committee

For questions or comments, please contact: SNAC@ncmail.net

Developed by the North Carolina School Nutrition Action Committee (SNAC)
SNAC consists of representatives from three state governmental agencies that participate in school nutrition services including the Department of Public Instruction, the Department of Health and Human Services and the NC Cooperative Extension Service. The goal of this committee is to coordinate school nutrition activities that link the cafeteria, classroom and community to school health.

These institutions are equal opportunity providers.
July 2002

10,000 copies of this public document were printed at a cost of \$1,249 or \$0.12 per copy.

