



# Competitive Foods: Soft Drinks vs. Milk

## Food Assistance Research Brief

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**Issue:** A USDA Report to Congress found that “competitive foods”—those available in schools in addition to USDA-provided school meals—have lower nutritional quality than school meals. These foods may contribute to overconsumption of food energy, dietary fat, saturated fat, added sugars, and sodium, and underconsumption of calcium, fiber, fruits and vegetables, and whole grains. Restricting the availability of less nutritious foods, taxing such foods, and improved marketing of more nutritious food choices have been proposed as policy changes, and in some cases have been tested in individual States and districts. This issue brief reviews current information on the growth and impact of competitive foods, and presents an Economic Research Service case study on competition between soft drinks and milk in particular.

**Background:** Older children enjoy more freedom in making food choices, and their diets appear to worsen with age (Lin et al., 2001). In particular, 60 percent of preschool children meet their calcium intake recommendation, but only 13 percent of teenage girls meet the recommendation. Consuming enough calcium during childhood and adolescence is important to bone formation and to prevention of osteoporosis in later life. The Economic Research Service has estimated that for osteoporosis-related hip fractures alone, improved diets might save \$5.1 billion to \$10.6 billion each year in medical care costs, missed work, and premature deaths.

Competitive foods available to schoolchildren can include food purchased offcampus, a la carte sales, vending machines, school stores, canteens, and snack bars, fundraising sales, food at school parties and treats given by teachers to students.

These foods are not required to meet the nutritional standards of reimbursable school meals, and studies suggest

they often do not. The National School Lunch Program regulations prohibit the sale of “foods of minimal nutritional value” in foodservice areas during mealtimes. Such foods contain less than 5 percent of the Recommended Daily Allowance for eight specific nutrients per serving—for example, carbonated soft drinks, water ices, chewing gum, and most hard candies. School food authorities and State agencies may impose additional restrictions on competitive foods in schools.

Vending machines selling foods and beverages were present in 94.9 percent of senior high schools, 62 percent of middle/junior schools, and 26.3 percent of elementary schools in 2000 (Wechsler et al., 2001). In addition, more than one-fourth (26.8 percent) of elementary schools, 39.4 percent of middle/junior high schools, and 59.3 percent of senior high schools had a school store, canteen or snack bar where students can purchase food or beverages. In schools with open campus policies, offcampus food sources may also compete with USDA meals; open campus policies were reported by 26.6 of senior high schools, 10.6 percent of middle/junior high schools and 6.0 percent of elementary schools (Wechsler et al., 2001).

A national study showed that the presence of alternatives is associated with reduced participation in school lunch programs. With all other factors being equal, 51 percent of students attending open campus schools eat a school lunch in a given day compared with 56 percent attending closed campus schools (Gleason, 1996).

Use of vending machines was also associated with a lower onsite school-lunch participation rate, which dropped from 56 percent to 47 percent. Attending a school with a la carte offerings had no direct association with participation, but was negatively associated with school meals program certification, which in turn affected total meals served.

## Competitive foods can be lucrative

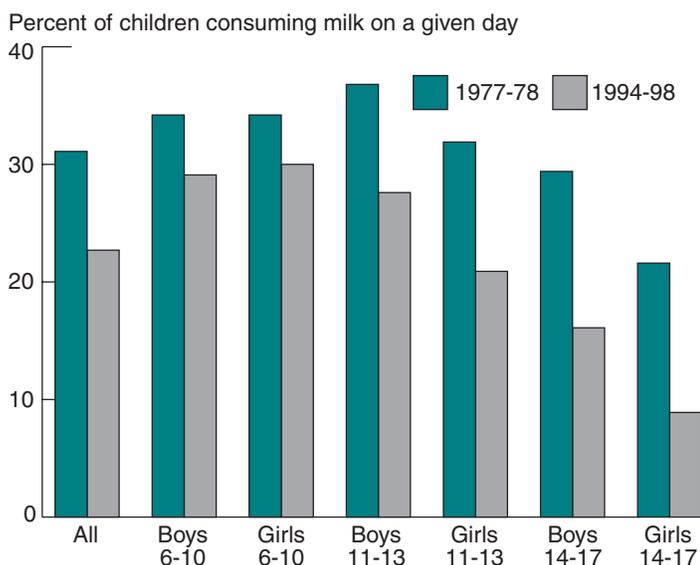
In some cases, competitive foods are important to the finances of the school or the school food service itself. Among schools in the 1998-99 School Nutrition Dietary Assessment II, a la carte sales contributed \$375 per 1,000 elementary school students and \$1,985 per 1,000 high school students. In a study by the American School Food Service Association, a la carte sales contributed approximately 11 percent to total revenue in elementary school cafeterias, 25 percent in middle schools, and 36 percent in high schools. Schools have negotiated contracts with soft drink companies—worth as much as \$19 million in one Texas school district—in which schools provide exclusive rights to vending machine sales and event sales, and in some cases guarantee minimum sales.

**Findings:** The subject of soft drinks illustrates some issues related to competitive foods. Soft drinks are popular vending items, but many health professionals, educators, and parents have voiced concerns about their presence in schools.

## More children chose soft drinks over milk at school

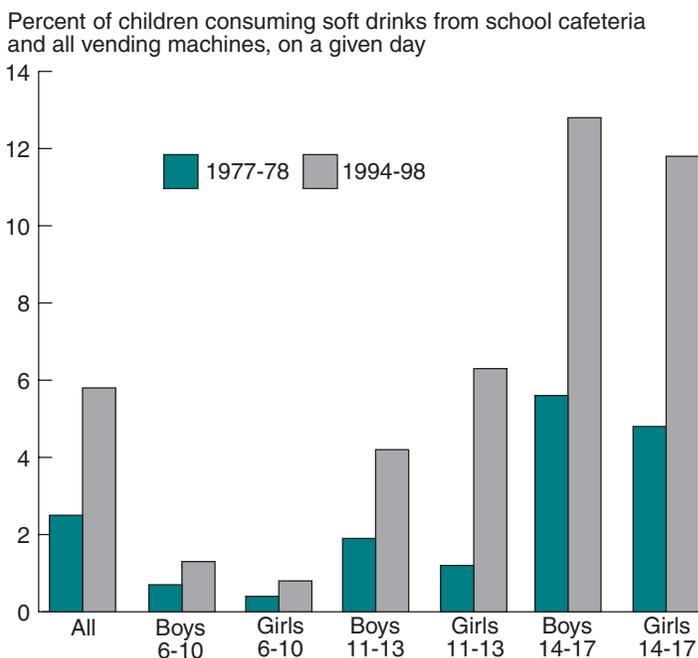
School meals are richer in calcium than meals eaten by children anywhere else. For each 1,000 calories provided, meals eaten at school provide 662 milligrams (mg) of calcium, compared to 474 from home meals, and 357 from fast-food meals. This is largely due to the milk served as a required part of school meals. Yet, USDA's food consumption surveys show that since 1977 fewer and fewer school-age children, regardless of age and gender, have consumed

**Figure 1. Milk consumption declining, especially for teenagers**



Source: Nationwide Food Consumption Survey 1977-78 and Continuing Survey of Food Intakes by Individuals, 1994-96 and 1998.

**Figure 2. Soft drink consumption rising, especially for teenagers**



Source: Nationwide Food Consumption Survey 1977-78 and Continuing Survey of Food Intakes by Individuals, 1994-96 and 1998.

milk (fig. 1). In 1977-78, 22 percent of girls age 14-17 consumed milk on any given day, whereas only 9 percent of the girls did so in 1994-98. The problem is worse among older children than younger children (Lin and French, 2001).

Meanwhile, the popularity of soft drinks among school-age children has risen tremendously (fig. 2). The proportion of children obtaining soft drinks at school cafeterias or vending machines (at school or elsewhere) more than doubled from 2.5 percent in 1977-78 to 5.8 percent in 1994-98. The increase is higher among children in middle and high schools. ERS research has shown that each 1-ounce decline in milk consumption is accompanied by a 4.2-ounce rise in soft drink consumption, resulting in a gain of 31 calories and a loss of 34 mg of calcium, raising nutritional concerns (Yen and Lin, 2002).

**Summary:** Some local school authorities have responded to concerns by limiting sales of competing foods and beverages in their schools or by developing their own nutritional standards for competitive foods sold in their schools. Market solutions and pricing strategies have also been investigated. Improved milk marketing—improved packaging, adding flavor options, using chilled cases and vending machines—increased milk sales by 18 percent across 146 pilot schools (Prentice, 2002). Lowering prices of lower-fat snacks and increasing prices of higher-fat snacks in Minnesota school vending machines was found to promote healthier choices, without significantly affect-

ing profits (French et al., 2001). More investigation of the relative costs and benefits of the various strategies being proposed to manage sales of competitive foods in school would be useful to guide decision making at both national and local levels.

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#### Additional information:

<http://www.ers.usda.gov/Briefing/FoodNutritionAssistance/childnutrition/>

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