

# Nutritional Integrity in Schools

**Childhood Obesity Is Skyrocketing.** Over the last two decades, rates of obesity have doubled in children and tripled in adolescents.<sup>1</sup> U.S. Department of Agriculture (USDA) surveys have found that children ages 2 to 18 years consumed an average of 118 more calories per day in 1996 than they did in 1978.<sup>2</sup> An extra 118 calories per day, if not compensated for through increased physical activity, translates into an average of 12 pounds of weight gain per year. The increases in calorie intake are driven by increased intakes of foods and beverages high in added sugars.<sup>3</sup>

**Children's Diets Are Poor.** Only 2% of children (2 to 19 years) meet the USDA's five main recommendations for a healthy diet.<sup>4</sup> Three out of four children consume more saturated fat than is recommended in the *Dietary Guidelines for Americans*.<sup>5</sup> Three out of four American high school students do not eat even the minimum recommended number of servings (five) of fruits and vegetables each day.<sup>6</sup>

**Poor Diet and Obesity Are Causing "Adult" Diseases in Children.** One quarter of children ages 5 to 10 years show early warning signs for heart disease, such as elevated blood cholesterol or high blood pressure.<sup>7</sup> Atherosclerosis (clogged arteries) begins in childhood. Autopsy studies of 15 to 19 year olds have found that all have fatty streaks in more than one artery, and about 10% have advanced fibrous plaques.<sup>8</sup> Type 2 diabetes can no longer be called "adult onset" diabetes because of rising rates in children. In a study conducted in Cincinnati, the incidence of type 2 diabetes in adolescents increased ten-fold between 1982 and 1994.<sup>9</sup> From 1979 to 1999, annual hospital costs for treating obesity-related diseases in children rose threefold (from \$35 million to \$127 million).<sup>10</sup>

## **Nutritionally-Poor Foods Are Widely Available in Schools.**

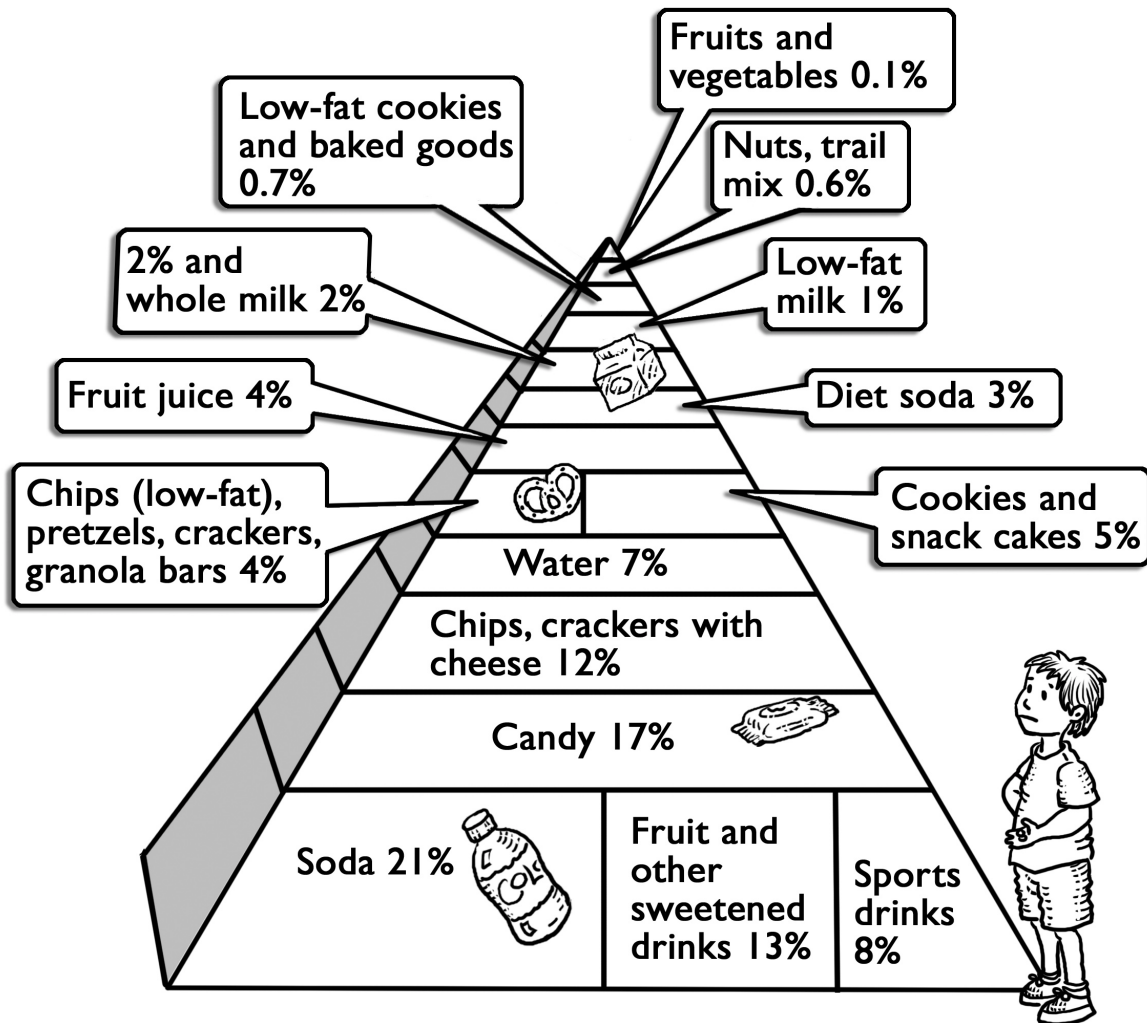
Nationally, 43% of elementary schools, 74% of middle/junior high schools, and 98% of senior high schools have vending machines, school stores, or snack bars.<sup>11</sup> The most common items sold include soft drinks, sports drinks, imitation fruit juices, chips, candy, cookies, and snack cakes.<sup>12,13</sup> The sale of foods in schools outside of the meal programs can negatively affect children's diets, since many are high in calories, added sugars, and fat and low in nutrients.<sup>14</sup> Some assert that if schools do not sell soft drinks, candy, and other low-nutrition foods and beverages, then children will go off campus to buy them. However, most schools have closed campuses: 94% of elementary schools, 89% of middle/junior high schools, and 73% of high schools have closed campus policies.<sup>15</sup>

"I think we should use our vending machines in the schools – fill them with good food, with fresh vegetables, with milk and products that are really healthy for the body."

– California Governor  
Arnold Schwarzenegger

**Schools Should Practice What They Teach.** Selling low-nutrition foods in schools contradicts nutrition education and sends children the message that good nutrition is unimportant.<sup>14</sup> The school environment should reinforce classroom nutrition education by modeling and supporting healthy behaviors.

**Nutrition-Poor Foods in Schools Undermine Parents' Efforts to Feed Children Well.** Parents entrust schools with the care of their children during the school day. Without their parents' knowledge, some children spend their lunch money on low-nutrition foods from vending machines and a la carte lines, rather than on balanced school meals. This practice is especially problematic when children have diet-related illnesses, such as high cholesterol or diabetes. Long cafeteria lines, short lunch periods, and activities held during the lunch period also lead some students to purchase foods from a vending machine rather than a nutritionally-balanced school lunch.



## School Vending Machine Pyramid

The above results are from a study conducted in fall 2003 in which 120 volunteers in 24 states surveyed the contents of 1,420 vending machines in 251 middle, junior high, and high schools. Both in middle and high schools, 75% of beverage options and 85% of snack options were of poor nutritional quality.

**Empty Calories and Obesity.** While obesity is a complex, multi-factorial problem, soft drinks and snack foods play a key role. Children who consume more soft drinks consume more calories (about 55 to 190 per day) than kids who drink fewer soft drinks.<sup>16,17</sup> Sodas and fruit drinks are the single leading source of calories and added sugars in the diets of teenagers.<sup>18</sup> A study conducted by the Harvard School of Public Health found that for each additional can or glass of soda or juice drink a child consumes per day, the child's chance of becoming overweight increases by 60%.<sup>19</sup> Women who increase their intake of sugar-sweetened soft drinks are more likely to gain weight

and have a higher risk of developing type 2 diabetes than women who decrease their consumption.<sup>20</sup> A health-education program encouraging elementary school students to decrease soft drink consumption reduced rates of overweight and obesity.<sup>21</sup>

Consumption of soft drinks can displace healthier foods from children's diets, like low-fat milk, which can help to prevent osteoporosis, and juice, which can help to prevent heart disease and cancer.<sup>16,17,22,23,24</sup>

In addition, the number of calories children consume from snacks increased by 120 calories per day between 1977 and 1996, from 363 calories in 1977 to 484 calories in 1996.<sup>25</sup> After the transition to middle school, when students gain access to school snack bars, students tend to eat fewer fruits and vegetables<sup>26</sup> and drink less milk and more sweetened beverages than they did in elementary school.<sup>27</sup>

**Schools Are Switching to Selling Healthier Foods and Are Not Losing Revenue.** More than a dozen schools and districts in Arizona, California, Kentucky, Maine, Massachusetts, Minnesota, Mississippi, Montana, Pennsylvania, and other states have demonstrated that schools can switch to selling healthier foods without losing revenue. For example, eight schools in a recent pilot program in Arizona switched to selling healthier foods via vending, a la carte, or school stores and they did not lose money.<sup>28</sup>

While school vending contracts appear lucrative, they usually provide only a small percentage of a school district's budget and, on a per-student basis, school vending contracts typically do not raise large amounts of revenue. A General Accounting Office study found that schools they interviewed raised between \$3 and \$30 per student per year from their soft drink contracts.<sup>29</sup> The Texas Department of Agriculture estimates that Texas schools raise \$54 million per year from vending sales, while the state's school food service operations may lose \$60 million per year to the sale of foods sold outside of the meal programs.<sup>30</sup>

**The School Foods "Playing Field" is Uneven.** School meals must meet detailed nutrition standards set by Congress and USDA in order for a school food service program to receive federal subsidies. In contrast, foods sold individually outside the meal programs (sometimes referred to as "competitive" foods), including those sold in vending machines, a la carte (snack) lines, school stores, snack bars, and fund raisers, are not required by the USDA to meet comparable nutrition standards.

- During meal periods, the sale of "foods of minimal nutritional value" (FMNV) is prohibited by federal regulations in areas where USDA school meals are sold or eaten. However, FMNV can be sold anywhere else on-campus -- including just outside the cafeteria -- at any time.
- FMNV provide less than 5% of the Reference Daily Intake (RDI) for eight specified nutrients per serving.<sup>31</sup> FMNV include seltzer, chewing gum, lollipops, jelly beans, and carbonated sodas. Many low-nutrition foods are not considered FMNV, such as chocolate candy bars, chips, cookies, snack cakes, and fruitades (containing little fruit juice), and therefore may be sold in the school cafeteria during meal times.

"All foods and beverages sold or served to students in school should be healthful and meet an accepted nutritional content standard."

– Institute of Medicine,  
*Preventing Childhood Obesity:  
Health in the Balance*, 2005.

**School Food Has Long Been a Federal Issue.** Since the Truman administration, foods sold and served through school meals have been regulated at the federal level. Congress and USDA set detailed standards and requirements for the foods provided by the school meal programs.

The federal government invests significant resources in the school meal programs (\$9.4 billion in FY 2004 for school lunch and breakfast, including cash payments and commodities), and has strong nutrition standards for those meals, as well as provides technical assistance and support for states and local school food service authorities to meet those standards.<sup>32</sup> Selling low-nutrition foods in schools undermines that investment.

The federal government spends large amounts of money treating diet-related diseases such as heart disease, cancer, diabetes, stroke, and osteoporosis through the Medicaid and Medicare programs and federal employee health insurance. Those diseases have their roots in childhood. According to the USDA, healthier diets could prevent at least \$71 billion per year in medical costs, lost productivity, and lost lives.<sup>33</sup> U.S. healthcare costs due to obesity are \$94 billion,<sup>34</sup> half of which (\$47 billion) is paid through Medicare and Medicaid.

Most states and localities leave the development of dietary guidance to federal agencies. There is no scientific basis for nutrition standards for school foods to differ for children in different states. If nutrition standards for school foods are left to local action, then schools and school districts serving low-income students may have less-healthy food and beverage options. Fewer parents in such communities have the spare time, resources, and empowerment to advocate for change in their

*The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity 2001* recommends that "[i]ndividuals and groups across all settings ... [adopt] policies specifying that all foods and beverages available at school contribute toward eating patterns that are consistent with the *Dietary Guidelines for Americans*."

children's schools at the state or local level. As a result, disadvantaged children may be presented with fewer healthy snack and beverage choices than more affluent children, and health disparities may widen.

**Support for Improving School Foods Is Strong.**<sup>35,36,37</sup>

A national poll by the Robert Wood Johnson Foundation found that 90% of teachers and parents support the conversion of school vending machine contents to healthy beverages and foods.<sup>35</sup> Similarly, a 2005 *Wall Street Journal/Harris Interactive Health-Care* poll found that 83% of all adults think that "public schools should do more to limit children's access to unhealthy foods like snack foods, sugary soft drinks, and fast foods."<sup>38</sup>

*For more information, contact Joy Johanson at the Center for Science in the Public Interest at <jjohanson@cspinet.org> or 202-777-8351.*

<sup>1</sup> Ogden C, et al. "Prevalence and Trends in Overweight Among U.S. Children and Adolescents, 1999-2000." *Journal of the American Medical Association* 2002, vol. 288, pp. 1728-1732.

<sup>2</sup> Nielsen S, Seiga-Riz AM, and Popkin B. "Trends in Energy Intake in U.S. between 1977 and 1996: Similar Shifts Seen across Age Groups." *Obesity Research*. 2002;10:370-378.

<sup>3</sup> Gleason P and Suitor C. *Food for Thought: Children's Diets in the 1990s*. Princeton, NJ: Mathematica Policy Research, Inc., 2001.

<sup>4</sup> Munoz K, et al. "Food Intakes of U.S. Children and Adolescents Compared with Recommendations." *Pediatrics* 1997, vol. 100, pp. 323-329 (erratum in *Pediatrics* 1998, vol. 101, pp. 952-953).

<sup>5</sup> Agricultural Research Service, U.S. Department of Agriculture. *Food and Nutrient Intakes by Children 1994-96, 1998* (1999). Table Set 17. Accessed at <<http://www.barc.usda.gov/bhnrc/foodsurvey/home.htm>> on August 17, 2001.

<sup>6</sup> Kann L, et al. Youth Risk Behavior Surveillance – United States, 1999. *Morbidity and Mortality Weekly Report* 2000, vol. 49, pp. 1-96.

<sup>7</sup> Freedman D, Dietz W, Srinivasan S, Berenson G. "The Relation of Overweight to Cardiovascular Risk Factors Among Children and Adolescents: The Bogalusa Heart Study." *Pediatrics* 1999, vol. 103, pp. 1175-1182.

- <sup>8</sup> Pathobiological Determinants of Atherosclerosis in Youth (PDAY) Research Group. "Natural History of Aortic and Coronary Atherosclerotic Lesions in Youth; Findings from the PDAY Study." *Arteriosclerosis and Thrombosis* 1993, vol. 13, pp. 1291-1298.
- <sup>9</sup> Pinhas-Hamiel O, Dolan L, Daniels S, et al. "Increased Incidence of Non-Insulin-Dependent Diabetes Mellitus Among Adolescents." *The Journal of Pediatrics* 1996, vol. 128, pp. 608-615.
- <sup>10</sup> Wang G, Dietz W. "Economic Burden of Obesity in Youths Aged 6 to 17 Years: 1979-1999." *Pediatrics* 2002, vol. 109, pp. e81.
- <sup>11</sup> Wechsler H, et al. "Food Service and Foods and Beverages Available at School: Results from the School Health Policies and Programs Study 2000." *Journal of School Health* 2001, vol. 71, pp. 313-324.
- <sup>12</sup> Wechsler H, et al. "Food Service and Foods and Beverages Available at School: Results from the School Health Policies and Programs Study 2000." *Journal of School Health* 2001, vol. 71, pp. 313-324.
- <sup>13</sup> Center for Science in the Public Interest (CSPI). *Dispensing Junk: How School Vending Undermines Efforts to Feed Children Well*. Washington, D.C.: CSPI, 2004.
- <sup>14</sup> USDA. *Foods Sold in Competition with USDA School Meal Programs: A Report to Congress January 12, 2001*. Washington, DC: USDA, 2001.
- <sup>15</sup> Wechsler H, et al. "Food Service and Foods and Beverages Available at School: Results from the School Health Policies and Programs Study 2000." *Journal of School Health* 2001, vol. 71, pp. 313-324.
- <sup>16</sup> Harnack L, et al. "Soft Drink Consumption among U.S. Children and Adolescents: Nutritional Consequences." *Journal of the American Dietetic Association* 1999, vol. 99, pp. 436-441.
- <sup>17</sup> Guenther PM. "Beverages in the Diets of American Teenagers." *Journal of the American Dietetic Association* 1986, vol. 86, pp. 493-499.
- <sup>18</sup> Murphy M, Douglass J, Latulippe M, Barr S, Johnson R, Frye C. "Beverages As a Source of Energy and Nutrients in Diets of Children and Adolescents." *Experimental Biology* 2005, Abstract #275.4.
- <sup>19</sup> Ludwig DS, et al. "Relation between Consumption of Sugar-Sweetened Drinks and Childhood Obesity: A Prospective, Observational Analysis." *Lancet* 2001, vol. 357, pp. 505-508.
- <sup>20</sup> Schulze M, Manson J, Ludwig D, Colditz G, Stampfer M, Willett W, and Hu F. "Sugar-Sweetened Beverages, Weight Gain and Incidence of Type 2 Diabetes in Young and Middle-Aged Women." *Journal of the American Medical Association* 2004, vol. 292, pp. 927-934.
- <sup>21</sup> James J, Thomas P, Cavan D, and Kerr D. "Preventing Childhood Obesity by Reducing Consumption of Carbonated Drinks: Cluster Randomised Controlled Trial." *British Medical Journal* 2004, Online First, published April 23, 2004.
- <sup>22</sup> Ballew C, Kuester S, Gillespie C. "Beverage Choices Affect Adequacy of Children's Nutrient Intakes." *Archives of Pediatric and Adolescent Medicine* 2000, vol. 154, pp. 1148-1152.
- <sup>23</sup> Bowman SA. "Diets of Individuals Based on Energy Intakes from Added Sugars." *Family Economics and Nutrition Review* 1999, vol. 12, pp. 31-38.
- <sup>24</sup> Lewis CJ, Park YK, Dexter PB, Yetley EA. "Nutrient Intakes and Body Weights of Persons Consuming High and Moderate Levels of Added Sugars." *Journal of the American Dietetic Association* 1992, vol. 92, pp 708-713.
- <sup>25</sup> Jahns L, et al. "The Increasing Prevalence of Snacking among U.S. Children from 1977 to 1996." *The Journal of Pediatrics* 2001, vol. 138, pp. 493-498.
- <sup>26</sup> Cullen K et al. "Effect of A La Carte and Snack Bar Foods at School on Children's Lunchtime Intake of Fruits and Vegetables." *Journal of the American Dietetic Association* 2000, vol. 100, pp. 1482-1486.
- <sup>27</sup> Cullen K and Zakeri I. "Fruits, Vegetables, Milk, and Sweetened Beverages Consumption and Access to a la Carte/Snack Bar Meals at School." *American Journal of Public Health* 2004, vol. 94, pp. 463-467.
- <sup>28</sup> Arizona Department of Education (AZ DOE). *Arizona Healthy School Environment Model Policy Implementation Pilot Study*. Phoenix, AZ: AZ DOE, 2005.
- <sup>29</sup> General Accounting Office (GAO). *Commercial Activities in Schools*. Washington, D.C.: USDA, 2000.
- <sup>30</sup> Texas Department of Agriculture. *School District Vending Contract Survey*. Accessed on March 5, 2004 at <[www.agr.state.tx.us/foodnutrition/survey/](http://www.agr.state.tx.us/foodnutrition/survey/)>.
- <sup>31</sup> Federal Register: 7 CFR § 210.11. "Requirements for School Food Authority Participation, Competitive Food Services."
- <sup>32</sup> USDA. *Federal Costs of School Food Programs*. Accessed at <<http://www.fns.usda.gov/pd/cncosts.htm>> on February 21, 2003.
- <sup>33</sup> Frazao E. "High Costs of Poor Eating Patterns in the United States." In *America's Eating Habits: Changes and Consequences*. Edited by Elizabeth Frazao. Washington, D.C.: Economic Research Service, U.S. Department of Agriculture, 1999. Agriculture Information Bulletin No. 750, pp. 5-32.
- <sup>34</sup> Finkelstein EA, Fiebelkorn IC, Wang G. "State-level Estimates of Annual Medical Expenditures Attributable to Obesity." *Obesity Research* 2004; 12:18-24.
- <sup>35</sup> The Robert Wood Johnson Foundation (RWJF). *Healthy Schools for Healthy Kids*. Princeton, NJ: RWJF, 2003.
- <sup>36</sup> American Public Health Association (APHA). *Obesity Poll* conducted by Widmeyer Polling and Research. Washington, D.C.: APHA, 2003.
- <sup>37</sup> Harvard Forums on Health. *Obesity as a Public Health Issue: a Look at Solutions*. Boston, MA: Harvard University Program for Health Systems Improvement, 2003.
- <sup>38</sup> *Wall Street Journal* Online/Harris Interactive Health-Care Poll: "American Say Parents, Schools Play Role in Children's Obesity." February 14, 2005. Accessed on February 16, 2005 at <[http://online.wsj.com/article\\_print/0,,SB110805710472751448,00.html](http://online.wsj.com/article_print/0,,SB110805710472751448,00.html)>.