

# Nutrition and the Health of Young People

*Division of Adolescent and School Health (DASH), National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), Centers for Disease Control and Prevention (CDC)*

## Benefits of Healthy Eating

- Healthy eating contributes to overall healthy growth and development, including healthy bones, skin, and energy levels; and a lowered risk of dental caries, eating disorders, constipation, malnutrition, and iron deficiency anemia.<sup>1</sup>

## Diet and Disease

- Early indicators of atherosclerosis, the most common cause of heart disease, begin as early as childhood and adolescence. Atherosclerosis is related to high blood cholesterol levels, which are associated with poor dietary habits.<sup>2</sup>
- Osteoporosis, a disease where bones become fragile and can break easily, is associated with inadequate intake of calcium.<sup>3</sup>
- Type 2 diabetes, formerly known as adult onset diabetes, has become increasingly prevalent among children and adolescents as rates of overweight and obesity rise.<sup>4</sup> A CDC study estimated that one in three American children born in 2000 will develop diabetes in their lifetime.<sup>5</sup>
- Overweight and obesity, influenced by poor diet and inactivity, are significantly associated with an increased risk of diabetes, high blood pressure, high cholesterol, asthma, joint problems, and poor health status.<sup>6</sup>

## Obesity Among Youth

- The prevalence of obesity among children aged 6-11 years has more than doubled in the past 20 years and among adolescents aged 12-19 has more than tripled.<sup>7,8</sup>
- Overweight children and adolescents are more likely to become overweight or obese adults;<sup>9</sup> one study showed that children who became obese by age 8 were more severely obese as adults.<sup>10</sup>

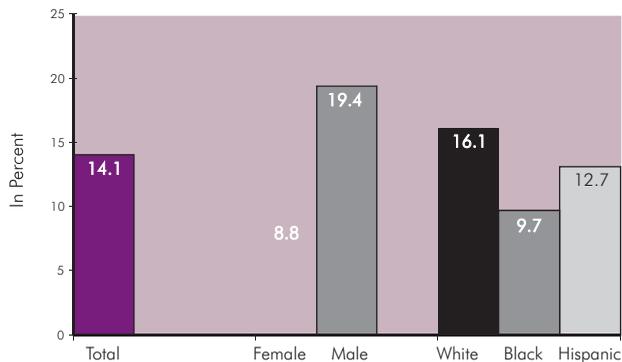
## Eating Behaviors of Young People

- Less than 40% of children and adolescents in the United States meet the U.S. dietary guidelines for saturated fat.<sup>11</sup>
- Almost 80% of high school students do not eat fruits and vegetables 5 or more times per day.<sup>12</sup>
- Only 39% of children ages 2-17 meet the USDA's dietary recommendation for fiber (found primarily in dried beans and peas, fruits, vegetables, and whole grains).<sup>13</sup>
- Almost 80% of adolescent females do not consume enough calcium.<sup>3</sup> During the last 25 years, consumption of milk, the largest source of calcium, has decreased 36% among adolescent females.<sup>14</sup> Additionally, from 1978 to 1998, average daily soft drink consumption almost doubled among adolescent females, increasing from 6 oz to 11 oz, and almost tripled among adolescent males, from 7 oz to 19 oz.<sup>11, 15</sup>
- A large number of high school students use unhealthy methods to lose or maintain weight. A nationwide survey found that during the 30 days preceding the survey, 11.8% of students went without eating for 24 hours or more; 4.3% had vomited or taken laxatives in order to lose weight; and 5.9% had taken diet pills, powders, or liquids without a doctor's advice.<sup>12</sup>

## Diet and Academic Performance

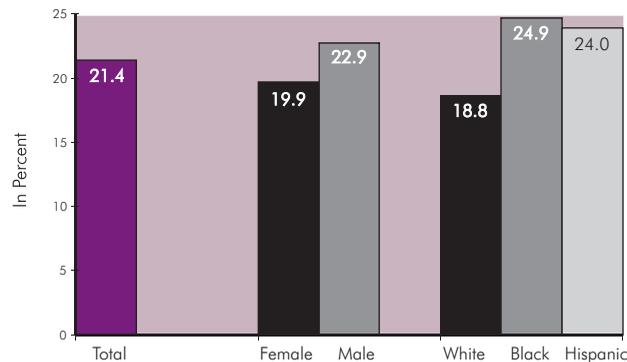
- Research suggests that not having breakfast can affect children's intellectual performance.<sup>16</sup>
- The percentage of young people who eat breakfast decreases with age; while 92% of children ages 6-11 eat breakfast, only 77% of adolescents ages 12-19 eat breakfast.<sup>11</sup>
- Hunger and food insufficiency in children are associated with poor behavioral and academic functioning.<sup>17, 18</sup>

**Percentage of High School Students Who Drank  $\geq 3$  Glasses/Day of Milk,\* by Sex\*\* and Race/Ethnicity,\*\*\* 2007**



\*During the 7 days preceding the survey; \*\*M>F; \*\*\*W>H>B  
Source: National Youth Risk Behavior Survey, 2005

**Percentage of High School Students Who Ate Fruits and Vegetables  $\geq 5$  Times/Day,\* by Sex\*\* and Race/Ethnicity,\*\*\* 2007**



\*100% fruit juice, fruit, green salad, potatoes (excluding French fries, fried potatoes, or potato chips) carrots, or other vegetables during the 7 days preceding the survey; \*\*M>F; and \*\*\*B, H>W  
Source: National Youth Risk Behavior Survey, 2005

## References

1. U.S. Department of Health and Human Services and U.S. Department of Agriculture. Dietary Guidelines for Americans, 6<sup>th</sup> Edition, 2005. Washington, DC, U.S. Government Printing Office.
2. Kavey RW, Daniels SR, Lauer RM, Atkins DL, Hayman LL, Taubert K. American Heart Association guidelines for primary prevention of atherosclerotic cardiovascular disease beginning in childhood. *Journal of Pediatrics* 2003;142(4):368-372.
3. U.S. Department of Health and Human Services. Bone Health and Osteoporosis: A Report of the Surgeon General. Rockville, MD: Department of Health and Human Services, Office of the Surgeon General, 2004.
4. Rosenbloom AL, Joe JR, Young RS, Winter WE. Emerging epidemic of type 2 diabetes in youth. *Diabetes Care* 1999;22(2):345-354.
5. Venkat Narayan KM, Boyle JP, Thompson TJ, Sorensen SW, Williamson DF. Lifetime risk for diabetes mellitus in the U.S. *Journal of the American Medical Association* 2003;290(14):1884-1890.
6. Mokdad AH, Ford ES, Bowman BA, Dietz WH, Vinicor F, Bales VS, Marks JS. Prevalence of obesity, diabetes, and obesity-related health risk factors, 2001. *Journal of the American Medical Association* 2003;289(1):76-79.
7. Ogden CL, Flegal KM, Carroll MD, Johnson CL. Prevalence and trends in overweight among U.S. children and adolescents, 1999-2000. *Journal of the American Medical Association* 2002;288:1728-32.
8. Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM. Prevalence of overweight and obesity in the United States, 1999-2004. *Journal of Medical Association* 2006;295(13):1549-1555.
9. Ferraro KF, Thorpe RJ Jr, Wilkinson JA. The life course of severe obesity: Does childhood overweight matter? *Journal of Gerontology* 2003; 58B(2):S110-S119.
10. Freedman DS, Khan LK, Dietz WH, Srinivasan SR, Berenson GS. Relationship of childhood obesity to coronary heart disease risk factors in adulthood: the Bogalusa Heart Study. *Pediatrics* 2001;108(3):712-18.
11. U.S. Department of Agriculture. *Continuing Survey of Food Intakes by Individuals* 1994-96, 1998.
12. CDC. Youth Risk Behavior Surveillance - U.S., 2007. *Morbidity and Mortality Weekly Report* 2008;57(SS-4):1-131.
13. Lin BH, Guthrie J, Frazao E. American children's diets not making the grade. *Food Review* 2001;24(2):8-17.
14. Cavadini C, Siega-Riz AM, Popkin BM. U.S. adolescent food intake trends from 1965 to 1996. *Archives of Disease in Childhood* 2000;83(1):18-24.
15. U.S. Department of Agriculture. *Continuing Survey of Food Intakes by Individuals*, 1987-88, Appendix A.
16. Pollitt E, Matthews R. Breakfast and cognition: An integrative summary. *American Journal of Clinical Nutrition* 1998;67(suppl):804S-813S.
17. Alaimo K, Olson CM, and Frongillo EA. "Food Insufficiency and American School-Aged Children's Cognitive, Academic and Psychosocial Developments." *Pediatrics* 108.1 (2001): 44-53.
18. Kleinman, R. E., et al. "Hunger in children in the United States: Potential behavioral and emotional correlates." *Pediatrics* 101 (1998):1-6.

### For Additional Information Contact:

DASH, NCCDPHP, CDC  
4770 Buford Highway, NE (Mail Stop K-29), Atlanta, GA 30341-3717  
800-CDC-INFO  
E-mail: CDCINFO@cdc.gov