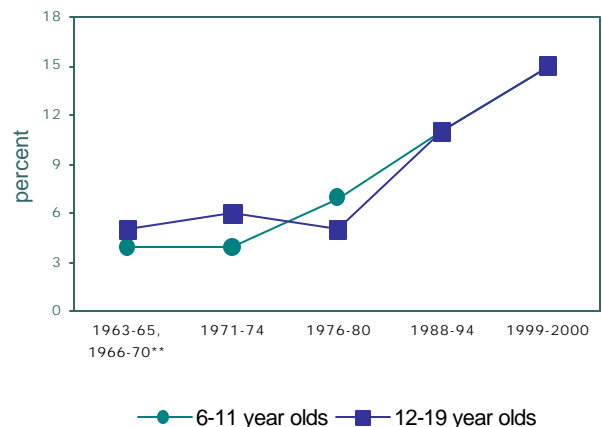


National Alliance for Nutrition and Activity

Obesity and Other Diet-Related Diseases in Children

- Heart disease, cancer, stroke, and diabetes are responsible for two-thirds of deaths in the United States.¹ The major risk factors for those diseases often are established in childhood: unhealthy eating habits, physical inactivity, obesity, and tobacco use.
- 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.²
- 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.³
- 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 1994.⁴
 - As the number of young people with type 2 diabetes increases, diabetic complications like limb amputations, blindness, kidney failure, and heart disease will develop at younger ages (likely in their 30s and 40s).
- Obesity rates have doubled in children and tripled in adolescents over the last two decades. One in seven young people are obese and one in three are overweight.⁵ Obese children are twice as likely as non-obese children to become obese adults.⁶
- Obesity increases the risk of high blood cholesterol, high blood pressure, and diabetes while still in childhood. Overweight and obesity can result in negative social consequences, e.g., discrimination, depression, and lower self-esteem.^{7,8}
- From 1979 to 1999, annual hospital costs for treating obesity-related diseases in children rose threefold (from \$35 million to \$127 million).⁹

Childhood Obesity*⁵



—●— 6-11 year olds —■— 12-19 year olds
*Obese is defined by the 95th percentile of the sex-specific CDC BMI-for-age-growth charts. **Data for 1966-70 are for adolescents ages 12-17.

Unhealthy eating habits often begin in childhood.

- Between 1989 and 1996, children’s calorie intake increased by approximately 80 to 230 extra calories per day depending on the child’s age and activity level.^{10, 11} The increases in calorie intake are driven by increased intakes of foods and beverages high in added sugars.

- Only 2% of children (2 to 19 years) meet the five main recommendations for a healthy diet from the Food Guide Pyramid.¹²
- Three out of four American high school students do not eat the recommended 5 or more servings of fruits and vegetables each day.¹³ Three out of four children consume more saturated fat than is recommended in the *Dietary Guidelines for Americans*.¹⁴
- Soft drink consumption has doubled over the last 30 years.¹⁵ With each additional serving of soft drink (soda, juice drinks, etc.) consumed each day, the odds that a child will become obese increase by 60%.¹⁶ Consumption of soft drinks can displace low-fat milk and 100% juice from children's diets.^{17,18,19,20,21}

¹ Anderson R. "Deaths: Leading Causes for 2000." *National Vital Statistics Reports*, vol. 50, no. 16. Accessed at <http://www.cdc.gov/nchs/data/nvsr/nvsr50/nvsr50_16.pdf> on January 21, 2003.

² 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.

³ 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.

⁴ 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.

⁵ Ogden C, Flegal K, Carroll M, Johnson C. "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.

⁶ Serdula M, Ivery D, Coates R, et al. "Do Obese Children Become Obese Adults? A Review of the Literature." *Preventive Medicine* 1993, vol. 22, pp. 167-177.

⁷ U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General; 2001.

⁸ Strauss R. "Childhood Obesity and Self-Esteem." *Pediatrics* 2000, vol. 105, p. e15.

⁹ Wang G, Dietz W. "Economic Burden of Obesity in Youths Aged 6 to 17 Years: 1979-1999." *Pediatrics* 2002, vol. 109, pp. e81.

¹⁰ U.S. Department of Agriculture, Office of Analysis, Nutrition, and Evaluation. *Changes in Children's Diets: 1989-1991 to 1994-1996*. Washington, DC: USDA, January 2001. Report No. CN-01-CD1.

¹¹ Institute of Medicine, National Academies. *Dietary Reference Intakes: Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. Washington, DC: National Academies Press, 2002.

¹² Munoz K, Krebs-Smith S, Ballard-Barbash R, Cleveland L. "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).

¹³ Kann L, Kinchen S, Williams B, et al. Youth Risk Behavior Surveillance - United States, 1999. *Morbidity and Mortality Weekly Report* 2000, vol. 49, no. SS-5, pp. 1-96.

¹⁴ Agricultural Research Service, US 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.

¹⁵ U.S. Department of Agriculture, Economic Research Service. *Per Capita Food Consumption Data System*. Washington, D.C. Accessed at <<http://www.ers.usda.gov/Data/FoodConsumption/Spreadsheets/beverage.xls>> on April 16, 2002.

¹⁶ Ludwig DS, Peterson KE, Gortmaker SL. "Relation Between Consumption of Sugar-Sweetened Drinks and Childhood Obesity: a Prospective, Observational Analysis." *The Lancet* 2001, vol. 357, pp. 505-508.

¹⁷ 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.

¹⁸ Bowman SA. "Diets of Individuals Based on Energy Intakes from Added Sugars." *Family Economics and Nutrition Review* 1999, vol. 12, pp 31-38.

¹⁹ Guenther PM. "Beverages in the Diets of American Teenagers." *Journal of the American Dietetic Association* 1986, vol. 86, pp. 493-499.

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