

ADOLESCENT NUTRITION

Adolescents face unique challenges to healthy eating as they become more independent from their families. Improving diet quality among this population is a key public health concern, as approximately one out of every five adolescents aged 12–19 years was obese in 2011–2012.¹ Inadequate consumption of essential nutrients can have a negative impact on adult health. Adequate calcium intake in adolescence is essential to attainment of peak bone mass.⁴ In addition, poor diet quality can increase the risk of chronic diseases such as cardiovascular disease, cancer, and type 2 diabetes.²

The Healthy Eating Index-2010 (HEI-2010) is designed to measure dietary quality³ and can be used to assess how well a population eats on average compared to the recommendations outlined in the 2010 Dietary Guidelines for Americans. Nine of the 12 HEI-2010 components address dietary adequacy of healthy foods. The remaining three components assess intake of foods that should be consumed in moderation: refined grains, sodium, and empty calories. In the table below, the HEI-2010 total and component scores are averages across all children, based on a 24-hour dietary recall.

In 2009–2010, the overall composite score for the HEI-2010 among adolescents aged 12–19 years was 46 out of 100 possible points, where 100 points indicates a diet that aligns with the 2010 Dietary Guidelines for Americans. With regard to the nine components of dietary adequacy, adolescents received 96 percent of the possible points for protein intake and 63 percent of the possible points for

whole fruit intake. Adolescents were least likely to consume adequate amounts of greens and beans and whole grains, with 17 and 14 percent, respectively, of possible points obtained (table 1).

HEI-2010 scores for individual components varied with sex. Female adolescents consumed 50 percent of the possible points for vegetables compared to 43 percent for males. Female adolescents were also more likely to consume recommended levels of sodium than were male adolescents, with 42 and 38 percent, respectively, consuming moderate levels. Non-Hispanic White adolescents were closer to meeting recommended levels of dairy consumption (78 percent) than non-Hispanic Black and Hispanic adolescents (59 and 64 percent, respectively). Overconsumption of refined grains, sodium, and empty calories was prevalent across all racial and ethnic groups.

Overall composite scores for diet quality did not vary by household poverty level; however, these scores mask differences in consumption of individual components (table 1). With regard to seafood and plant proteins, adolescents in households with incomes of 200 percent or more of poverty consumed about 57 percent of possible points compared to 36 percent among those in households with incomes of less than 100 percent of poverty. Conversely, adolescents living in households with incomes of 200 percent or more of poverty had lower scores for optimal consumption of sodium compared to adolescents in households with incomes less than 100 percent of poverty (35 versus 43 percent, respectively).

Table 1. Diet Quality Among Adolescents Aged 12–19 as Measured by Healthy Eating Index (HEI-2010) Scores,* by Poverty Status, 2009–2010**

Dietary Component	Overall Average	Less Than 100% of Poverty	100–199% of Poverty	200% or More of Poverty
Total HEI-2010	46	45	45	46
Adequacy (higher score indicates higher consumption)				
Total fruit	56	59	52	56
Whole fruit	63	60	46	72
Total vegetables	46	42	42	49
Greens and beans	17	19	19	16
Whole grains	14	12	17	14
Dairy	71	71	67	73
Total protein foods	96	94	93	97
Seafood and plant proteins	50	36	48	57
Fatty acids	36	39	40	34
Moderation (higher score indicates lower consumption)				
Refined grains	39	41	44	35
Sodium	39	43	44	35
Empty calories	47	46	43	49

*In this table, all scores are shown as a percentage of possible points. Total HEI-2010 scores reflect overall dietary quality. For the adequacy components, higher scores reflect higher intakes and a score corresponding to 100 indicates that the standard was met or exceeded on average. For the moderation components, higher scores reflect lower intakes because lower intakes are more desirable and a score corresponding to 100 indicates that the standard was met. For all components, a higher score indicates a higher quality diet. "Empty calories" refers to calories from solid fats (i.e., sources of saturated fats and trans fats) and added sugars (i.e., sugars not naturally occurring). Total fruit includes 100 percent fruit juice. **The U.S. Census Bureau weighted average poverty threshold for a family of four was \$23,492 in 2012.

Data Sources

Table 1. Centers for Disease Control and Prevention, National Center for Health Statistics. National Health and Nutrition Examination Survey, 2009–2010. Data analyzed by the Maternal and Child Health Epidemiology and Statistics Program.

Endnotes

- Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of childhood and adult obesity in the United States, 2011–2012. *Journal of the American Medical Association*. 2014;311(8):806–814.
- U.S. Department of Agriculture; U.S. Department of Health and Human Services. *Dietary Guidelines for Americans*, 7th edition. Washington, DC: Government Printing Office; 2010. Available at: <http://www.cnpp.usda.gov/dietaryguidelines.htm>. Accessed September 30, 2014.
- Guenther PM, Casavale KO, Reedy J, et al. Update of the Healthy Eating Index: HEI-2010. *Journal of the Academy of Nutrition and Dietetics*. April 2013;113(4):569–580.
- American Academy of Pediatrics. Calcium requirements of infants, children, and adolescents. *Pediatrics* 1999;104(5):1152–1157.

Suggested Citation

U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Child Health USA 2014*. Rockville, Maryland: U.S. Department of Health and Human Services, 2015. Online at <http://mchb.hrsa.gov/chusa14/>