Child TRENDS

NAHIC

ADOLESCENT HEALTH HIGHLIGHT

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Fast Facts

1. The physical growth that occurs during adolescence is second only to the growth that occurs during the first year of life.[1]

2. To support this accelerated growth and development, adolescents have nutritional needs that are greater than those of children and adults.[1,3]

3. Despite the importance of good nutrition to healthy adolescent development, the diets of adolescents and young adults are often nutrient poor, in part due to the high percentage of calories they consume from restaurants and fast food.[4]

4. Exercise habits established in adolescence affect health in adulthood. Yet adolescents are becoming increasingly sedentary, with about one quarter spending their leisure time sitting in front of computer screens more than three hours a day.[5,6]

5. Adolescents require at least as much sleep as they did when they were younger—eight hours each night at the very least;[7] but many are not getting enough.[8]

Physical Development and Daily Health Habits

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Adolescence: A time to nurture healthy habits

Adolescence is a period of tremendous development and physical growth. By traditional markers, such as rates of mortality and chronic disease, adolescents are generally very healthy. In fact, more than four in five parents (81 percent) rate the health of their adolescent as excellent or very good.[2] As adolescents become more independent, they assume greater responsibility for taking care of themselves on a daily basis. Adolescence offers a chance to establish habits that affect health not just during the teenage years, but across the lifespan.

Nurturing healthy habits: Room for improvement

The physical growth that occurs during adolescence is second only to the growth during the first year of life.[1,3] Optimal nutrition during adolescence is essential to supporting growth, maximizing bone density and preventing chronic disease in adulthood. In fact, adolescents have greater nutritional requirements in many areas, such as the amount of calcium and overall calories that they should consume, than do children and adults.[3] Calorie requirements depend on an adolescent's gender and activity level, and the range is wide: from 1600 calories a day for a sedentary 12-year-old female, to 3200 calories a day for an active 17-year-old male.[3]

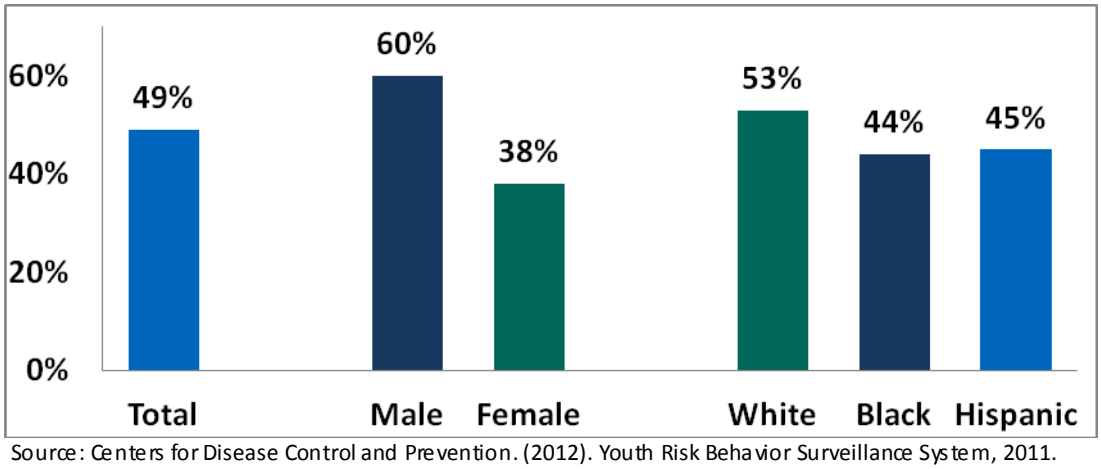
Despite elevated nutritional needs, many adolescents fail to eat enough fruit, vegetables, and dairy products.[3] This results in diets that are low in several nutrients including calcium, potassium, fiber, magnesium, and vitamin E.[3] In addition, up to one-third of adolescents are deficient in vitamin D, but this problem is only partly due to diet. Skin color (darker skin), season (sun exposure), and obesity all can affect vitamin D levels.[9] Not only are adolescents' diets insufficient in key nutrients and food groups, they are also overloaded with sugar, fat, and sodium due in part to the high percentage of calories they consume from restaurants and fast food.[4] Recent data revealed that three out of the top five sources of calories for adolescents are pizza; sodas, energy drinks, and sports drinks; and grain-based desserts (ex: cake, cookies, pie, pastries, and donuts).[3]

The proportion of high school students who met the recommendation for weekly physical activity rose from just over one-third (37 percent) to nearly one-half (49 percent) between 2009 and 2011.

Physical activity. Physical activity during adolescence is crucial for bone and muscle development.[1] The government report *Dietary Guidelines for Americans 2010* recommends 60 minutes of moderate- to vigorous-intensity activity on most days.[3]

Physical activity also helps with weight control by enabling people to increase the allowable calories in their diets without putting on excess pounds. For example, an adolescent female who meets the dietary guidelines' recommendation for physical activity may consume 600 calories more than her same-age, same-size counterpart who is sedentary.[3] Unfortunately, from childhood on, physical activity declines and sedentary activity increases with age. However, between 2009 and 2011, the proportion of high school students who met the recommendation for weekly physical activity (being physically active for at least an hour for five out of the previous seven days) rose from just over one-third (37 percent) to nearly one-half (49 percent) (see Figure 1).[6] That said, many other measures of physical activity (such as physical education class attendance) have not improved since the 1990s.[10]

FIGURE 1: High school students who were physically active for 60 minutes or more for 5 of the past 7 days, by gender and race/ethnicity, 2011

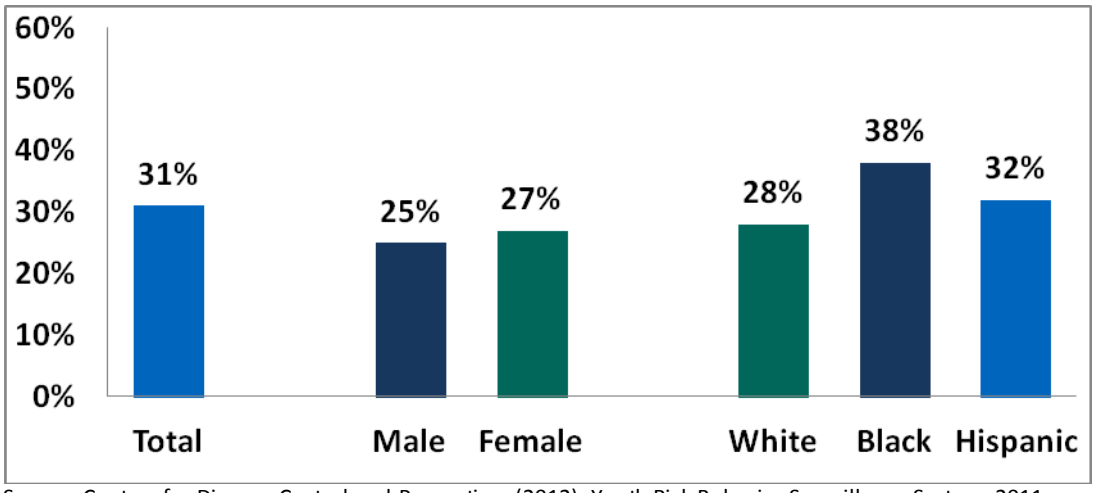


Source: Centers for Disease Control and Prevention. (2012). Youth Risk Behavior Surveillance System, 2011.

Sedentary activity among adolescents has increased, primarily because they spend so much time using communications and entertainment media.

Sedentary activity. At the same time, sedentary activity among adolescents has increased, primarily because they spend so much time using communications and entertainment media—such as television, computers, and hand-held devices.[5] In 2011, nearly one-third of high school students spent three or more hours a day on recreational computer use (see Figure 2) (up from one-quarter in 2009).[6]

FIGURE 2: High school students who used computers recreationally 3 or more hours per school day, by gender and race/ethnicity, 2011

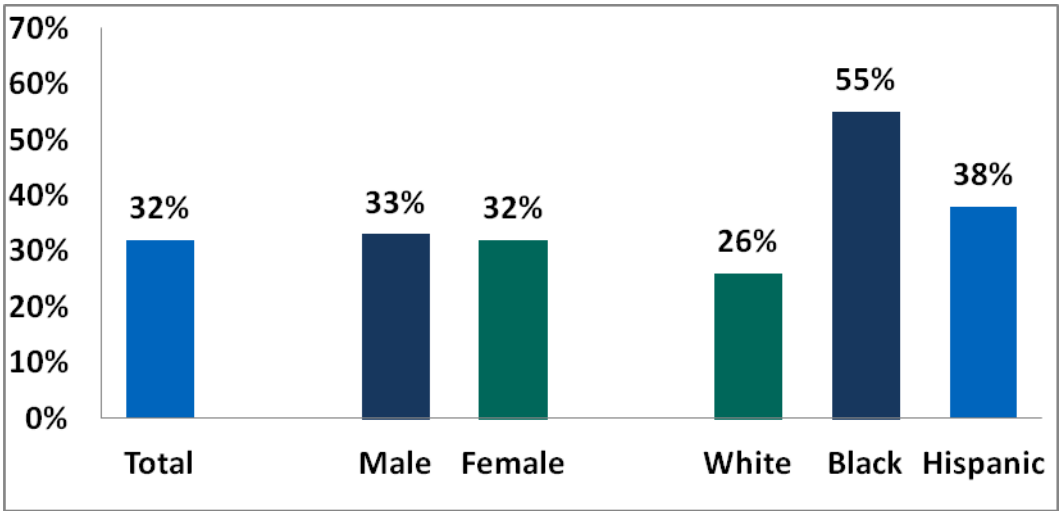


Source: Centers for Disease Control and Prevention. (2012). Youth Risk Behavior Surveillance System, 2011.

Commercials during prime-time TV depict food and snacks being consumed or referred to an estimated three to five times for every half hour of programming.

Similarly, roughly one-third of high school students spent three or more hours per school day watching television, although this percentage differed by racial and ethnic group (see Figure 3).[6] While watching television, adolescents are exposed to junk food advertisements and studies show that they eat what they see.[11] Commercials during prime-time TV depict food and snacks being consumed or referred to an estimated three to five times for every half hour of programming.[12]

FIGURE 3: High school students who watched three or more hours of TV per school day, by gender and race/ethnicity, 2011



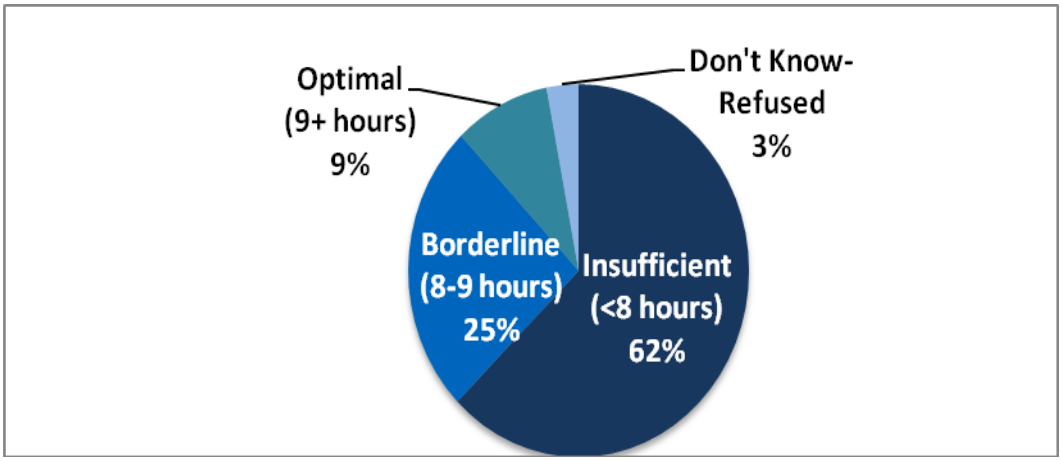
Source: Centers for Disease Control and Prevention. (2012). Youth Risk Behavior Surveillance System, 2011.

Adolescents require at least as much sleep as they did during the years leading up to this period—in general, eight hours each night at the very least.

Sleep. Adolescents require at least as much sleep as they did during the years leading up to this period—in general, eight hours each night at the very least.[7] However, unique factors at this stage of young people's lives make it difficult for them to get enough sleep.[8,13,14] Natural physiological changes, as well as psychosocial factors, make adolescents want to stay up and sleep in later. When they stay up later, as many do, they still have to wake up

early, partly due to school schedules.[13-15] This situation leads to a pattern familiar to many parents: deprived sleep during the week and catch-up on weekends.[13-15] An estimated 62 percent of adolescents in grades 9-12 get insufficient sleep on school nights (see Figure 4).[8]

FIGURE 4: Hours of sleep among high school students on school nights, 2006*



*Percentages do not add up to 100 percent due to rounding.
Source: The National Sleep Foundation. (2006). Sleep in America Poll 2006.

Adolescents' high consumption of sugar is a cause for concern from an oral health standpoint, because sugar can contribute to tooth decay.

Oral health. Although daily oral hygiene plays a critical role in maintaining oral health, little is known about adolescents' brushing and flossing habits.[15] Much is known about adolescents' high consumption of sugar, which is a cause for concern from an oral health standpoint because sugar can contribute to tooth decay.[16] Sixteen percent of children and adolescents ages 6-19 have untreated tooth decay, a proportion that has improved only slightly in the past several decades.[17]

Who is at an increased risk for unhealthy habits?

Black and Hispanic adolescents are less likely to meet the recommendations for vegetables and dairy intake than are other adolescents.

Adolescents face many challenges to engaging in healthy behaviors, including those related to biological factors, such as puberty and obesity; social factors, such as relationships and pressure to conform; and cognitive factors, such as the ability to critically evaluate advertising.[1] For example, opting for "status foods" (such as trendy drinks) and following food fads (such as the latest popular diet) can lower the nutritional quality of what adolescents eat.[1] Studies show that increasing fast food intake during adolescence is partly due to their increased autonomy around food choices and eating out independently of a parent.[18]

Nutrition. Certain groups of adolescents are more at risk for poor nutrition. Black and Hispanic adolescents are less likely to meet the recommendations for vegetables and dairy intake than are other adolescents.[19] Adolescents whose parents have lower levels of education and who do not eat meals with their family have poorer diets overall.[19] Adolescents in minority groups and those who live in poorer neighborhoods also have greater exposure to fast food, consume more of it, and have less access to healthy alternatives.[4] Dieters are also at risk for poor nutrition. In 2011, 61 percent of female high school students and 32 percent of male high school students reported that they were trying to lose weight.[6] Adolescents who are overweight are more likely to diet and engage in severely unhealthy behaviors, such as purging, in an attempt to lose weight.[20]

Physical activity. Several groups are less likely to engage in physical activity, including female, minority, and low-income adolescents, and those whose mothers are less educated.[21] By most measures, white male adolescents report the greatest levels of physical activity and black females report the lowest levels.[6] Environmental factors such as high neighborhood crime rates can also reduce adolescents' physical activity levels.[21] Schools can offer exercise opportunities to encourage and promote physical activity among adolescents. Yet, in 2006, only three percent of high schools offered physical education classes on three or more days per week for the entire school year and less than half (45 percent) offered intramural activities or physical activity clubs.[22]

In addition to the physical benefits derived from exercise, adolescents who are physically active have improved self-esteem and lower levels of stress.

Sleep. As noted above, the majority of adolescents get inadequate hours of sleep. Inadequate sleep is more common among adolescents who drink large quantities of caffeinated beverages (two or more cups/cans per day) and those who use electronic devices (e.g., cell phones, computers and television) close to bedtime,[8,13] and especially among those who do both.[8,23] Additionally, adolescents who spread themselves thin by working at a job 20 or more hours per week are also more likely to have inadequate amounts of sleep.[13,14] Mood disorders – such as depression and anxiety – are also linked to inadequate sleep in adolescents; this appears to be a "chicken and egg" relationship: these disorders can make it challenging to get enough sleep, which in turn exacerbates symptoms, creating a vicious cycle.[13,14]

Habits matter: Implications for health and well-being

Nutrition. Healthy behaviors during adolescence can prevent short-term health problems and chronic disease in adulthood. For example, eating adequate amounts of fruit and vegetables is linked to healthy weight in adolescence and lower rates of chronic disease in adulthood.[24] By contrast, fast food consumption in late adolescence and early adulthood is strongly linked to weight gain and increased risk for diabetes[25] through increased calories and poor diet quality. Overall, adolescents who eat fast food frequently consume more fat, sodium, and soft drinks, and fewer fruits and vegetables. Adolescents who use unhealthy dieting practices to control weight are at increased risk for developing eating disorders[26] and for being overweight.[27]

Physical activity. In addition to the physical benefits derived from exercise, adolescents who are physically active have improved self-esteem and lower levels of stress.[28] Over time, adolescent physical activity provides benefits related to breast cancer, bone health, and physical activity level in adulthood.[28] Conversely, adolescent physical inactivity is associated with obesity and related poor health outcomes in adulthood, such as diabetes, coronary heart disease, high blood pressure, and some cancers.[28]

Reduced access to vending machines in schools and increased availability of physical education make it easier to eat nutritious food and to exercise regularly.

Sleep. Emerging research on sleep suggests that inadequate sleep is linked to adolescent obesity[29] and can adversely affect functioning in areas such as impulse control, emotional well-being, learning, and thrill-seeking behaviors.[15,30] This connection, in turn, may increase the risk of poor outcomes, such as car crashes,[31] substance use, a range of mental health disorders, and compromised school performance.[15,30] Adolescents with certain mental health disorders and learning disabilities may be more susceptible to the consequences of sleep deprivation.[13-15,30]

Other influences. Adolescents benefit from families, schools, communities and policies that help them adopt healthy habits. For example, reduced access to vending machines in

schools and increased availability of physical education make it easier to eat nutritious food and to exercise regularly. Research has shown that delaying school start-times holds promise for helping adolescents get enough sleep.[13,14] Overall, nurturing healthy habits in adolescence would improve not only adolescent health but also health across the lifespan.

Resources

The Childs Trends LINKS database summarizes evaluations of out-of-school time programs that work (or do not) to enhance children's development.

The Child Trends DataBank includes brief summaries of well-being indicators, including several that are related to the physical development and daily health habits of adolescents:

- Vigorous Physical Activity by Youth: http://www.childtrends.org/?indicators=vigorous-physical-activity-by-youth
- Participation in School Athletics: http://www.childtrends.org/?indicators=participation-in-school-athletics
- Overweight Children and Youth: http://www.childtrends.org/?indicators=overweight-children-and-youth
- Disordered Eating: Symptoms of Bulimia: http://www.childtrends.org/?indicators=disordered-eating-symptoms-of-bulimia
- Watching Television: http://www.childtrends.org/?indicators=watching-television

The Childs Trends LINKS (Lifecourse Interventions to Nurture Kids Successfully) database summarizes evaluations of out-of-school time programs that work (or not) to enhance children's development. The LINKS database is user-friendly and directed especially to policymakers, program providers, and funders.

- Programs related to the physical development of adolescents can be found by selecting the Adolescents box under age group and Health Status/Conditions, Nutrition, Obesity or Other boxes under Physical Health.

Evaluations of programs proven to work (or not) in supporting the formation of healthy habits and the physical development of adolescents are summarized in various fact sheets. Some facts sheets specific to particular health conditions are:

The Dietary Guidelines for Americans (http://www.cnpp.usda.gov/dietaryguidelines.htm) includes age-specific recommendations about overall calorie consumption and individual nutrient intake.

- Physical health and nutrition, mental health, reproductive health and sexuality, and substance use among adolescents:
  - Adolescent males: What Works for Male Children and Adolescents: Lessons from Experimental Evaluations of Programs and Interventions
  - Adolescent females: What Works for Female Children and Adolescents: Lessons from Experimental Evaluations of Programs and Interventions
- Prevention and treatment of obesity: What Works for the Prevention and Treatment of Obesity among Children: Lessons from Experimental Evaluations of Programs and Interventions.

Adopting healthier habits can be challenging. Selected resources to help adolescents and their families to be more active and eat more nutritiously include:

- *Let's move!* (http://www.letsmove.gov/), first Lady Michelle Obama's initiative to reduce childhood obesity through healthier diets and more exercise. The website offers ideas for action for adolescents, parents, schools, clinicians, communities, faith-based institutions and more.

- The U.S. Department of Agriculture has several sites dedicated to helping Americans improve their diet. The Dietary Guidelines for Americans (http://www.cnpp.usda.gov/dietaryguidelines.htm) includes age-specific recommendations about overall calorie consumption and individual nutrient intake. MyPlate helps users put those guidelines into practice (http://www.choosemyplate.gov/).
- The nutrition website (http://www.nutrition.gov/) provides information on all foods and has a special adolescent page with interactive learning tools for adolescents and resources for parents and teachers (http://www.nutrition.gov/lifestages - then select "adolescents").

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