

Vigorous Physical Activity by Youth

Headline

In 2007, only about a third of high school students met currently-recommended levels of physical activity. ([Table 1](#))

Importance

Regular physical activity has both short- and long-term health benefits. For adolescents, participation in sports, physical education classes, or any other type of regular exercise helps to build and maintain healthy bones and muscles, controls weight, and has positive psychological benefits.¹

Adolescents who exercise also improve their long-term health. Participation in physical activity decreases the risk of developing diabetes, heart disease, and hypertension.² Additionally, people who are active in their youth tend to remain active and physically fit as adults.

The U.S. Department of Health and Human Services defines the recommended level of physical activity as that which increases heart rate and causes heavy breathing some of the time for a total of 60 minutes a day, at least five days a week.³ The International Consensus Conference on Physical Activity Guidelines for Adolescents recommended that adolescents should be physically active daily and participate in vigorous physical activity three or more times a week for at least twenty minutes.⁴ This recommendation has been adopted as part of the *Healthy People 2010* goals (see below).

Trends

In 2005, the U.S. Department of Health and Human Services redefined the recommended levels of physical activity from 20 minutes of vigorous activity at least three days a week to 60 minutes of activity (that includes vigorous exercise some of the time) at least five days a week. Between 1993 and 2003, the percentage of high school students meeting the former level of recommended physical activity remained fairly steady, ranging between 63 percent and 66 percent. In 2005 and 2007, however, only about one-third of high school students met the revised recommended levels of physical activity (36 and 35 percent, respectively). ([Table 1](#))

Differences by Gender

A much higher percentage of adolescent males participate in vigorous physical activity than do their female peers. Within all racial and ethnic subgroups, levels for males are between 17 and 20 percentage points higher than for females. ([Table 1](#)) Differences between males and females are also significant for all grades. ([Figure 2](#))

Differences by Race and Ethnicity⁵

Non-Hispanic white students are more likely to meet recommended levels of physical activity than are non-Hispanic black and Hispanic youth: In 2007, 37 percent of white youth met recommended levels, as compared with 31 and 30 percent of non-Hispanic black and Hispanic youth, respectively. ([Figure 3](#))

Differences by Age

As high school students get older, the amount of vigorous exercise they get declines. In 2007, the proportion who met recommended levels of physical activity dropped from 38 percent to 30 percent between ninth and twelfth grade. ([Table 1](#)) The difference was most pronounced among females, who dropped from 32 percent in ninth grade to 21 percent by twelfth grade. ([Figure 2](#))

State and Local Estimates

2007 estimates for selected states and cities are available from the Youth Risk Behavior Survey (YRBS) at: <http://apps.nccd.cdc.gov/yrbss/>

2003 estimates for all states are available through the *National Survey for Children's Health* at <http://nschdata.org/anonymous/Dataquery/DataQuery.aspx?control=5> (Select Physical and Dental Health under Child Health Measures)

International Estimates

International estimates of physical activity for youth ages 11, 13, and 15 are available for 1997-98 for countries participating in the Health Behavior of School-Aged Children Survey. See *Health and Health Behavior Among Young People. WHO Policy Series: Health policy for children and adolescents, Issue 1.* http://www.hbsc.org/downloads/Int_Report_00.pdf (See Figures 7-1 and 7-2 in Chapter 7)

National Goals

Through its *Healthy People 2010* initiative, the federal government has set a national goal to increase the number of adolescents who engage in vigorous physical activity for at least 20 minutes, three days a week, from the 1999 level of 65 percent to 85 percent. To do this, the Centers for Disease Control and Prevention and the President's Council on Physical Fitness and Sports have urged public and private schools to require daily physical education for all students and to educate students about the benefits of exercise.

More information is available at:

http://www.health.gov/healthypeople/document/HTML/Volume2/22Physical.htm#_Toc490380803 (Goals 22-6 and 22-7)

Definition

Vigorous physical activity here refers to activities that caused increased heart rate and heavy breathing some of the time for a total of 60 minutes a day on 5 of the 7 days preceding the survey.

Data Source

Center for Disease Control and Prevention. *Surveillance Summaries*:

Data for 1993: March 24 1995. MMWR 1995; 44(No. SS-1): Table 24.

<http://www.cdc.gov/nccdphp/dash/MMWRFile/ss4401.htm#00001038.htm>

Data for 1995: September 27, 1996. MMWR 1996; 45 (No. SS-4): Table 36.

<http://www.cdc.gov/nccdphp/dash/MMWRFile/ss4504.htm#00001954.htm>

Data for 1997: August 14, 1998. MMWR; 47(No. SS-3): Table 36.

<http://www.cdc.gov/nccdphp/dash/MMWRFile/ss4703.htm#00003382.htm>

Data for 1999: June 9, 2000. MMWR 2000; 49(No. SS-5): Table 40.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss4905a1.htm#tab40>

Data for 2001: June 28, 2002. MMWR 2002; 51(No. SS-4): Table 40.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5104a1.htm#tab40>

Data for 2003: May 21, 2004. MMWR 2004; 53(No. SS-2): Table 50.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5302a1.htm#tab50>

Data for 2005: June 9, 2006. MMWR 2006; 55 (No. SS-5): Table 52.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5505a1.htm>

Data for 2007: June 6, 2008. MMWR 2007 57(No.SS-4). Table 74.

<http://www.cdc.gov/mmwr/pdf/ss/ss5704.pdf>

Raw Data Source

Youth Risk Behavior Survey (YRBS)

<http://www.cdc.gov/nccdphp/dash/yrbs/index.htm>

Approximate Date of Next Update

Summer 2010

¹ *Physical Activity and the Health of Young People*. March 2005. Available at:

<http://www.cdc.gov/HealthyYouth/physicalactivity/pdf/facts.pdf>

² Stephens, Mark. *Children, Physical Activity, and Public Health: Another Call to Action*. March 15, 2002.

American Family Physician. Available at: <http://www.aafp.org/afp/20020315/editorials.html>

<http://www.health.gov/healthypeople/Document/HTML/Volume2/22Physical.htm>

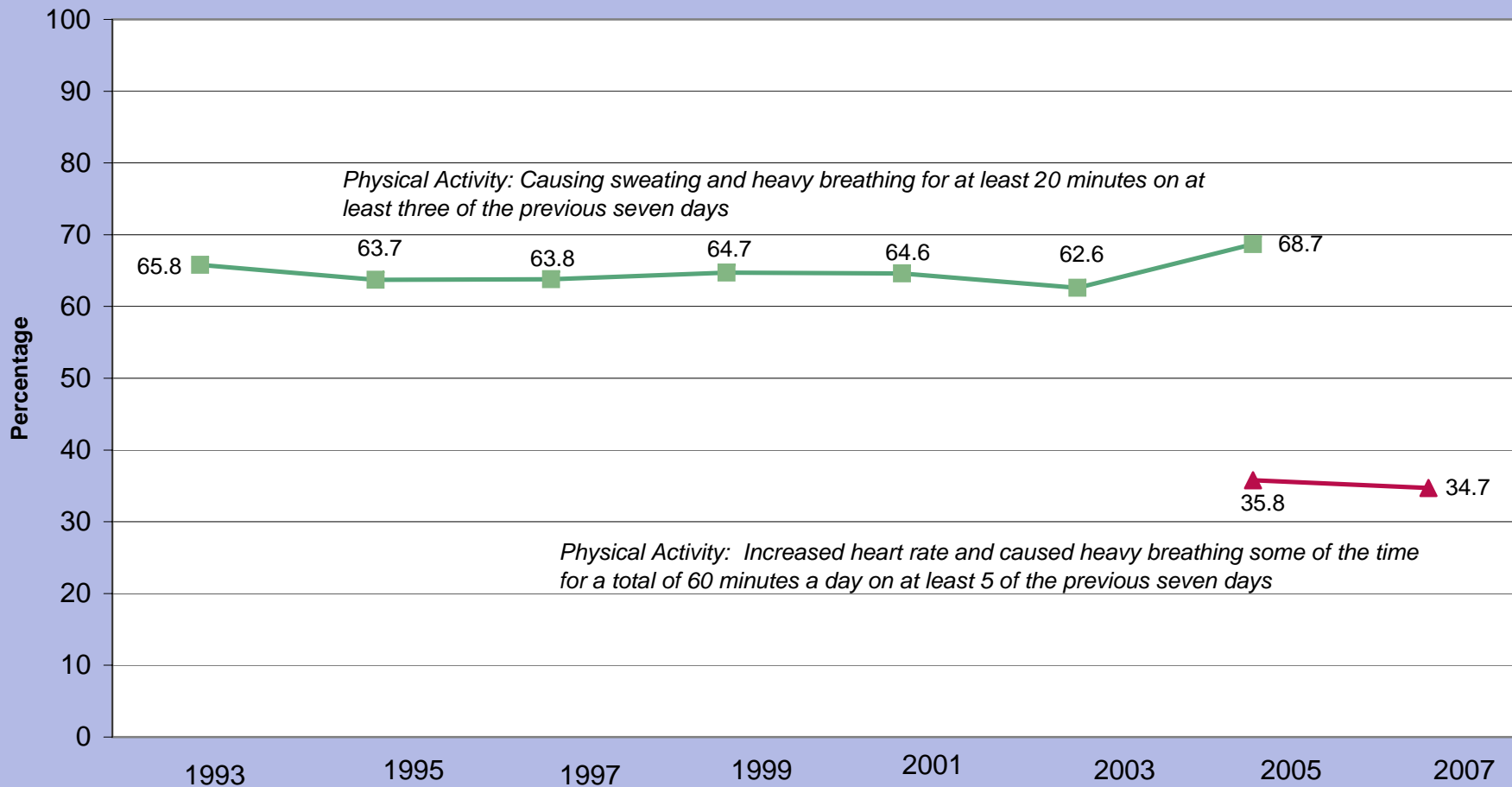
³ CDC. U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for Americans, 2005*. 6th Edition, Washington, DC: U.S. Government Printing Office, January 2005.

⁴ *Promoting Better Health for Young People Through Physical Activity and Sports: A Report to the President from the Secretary of Health and Human Services and the Secretary of Education.* Fall 2000. Available at http://www.cdc.gov/HealthyYouth/physicalactivity/promoting_health/

⁵ Race/ethnicity estimates from 1999 and later are not directly comparable to earlier years due to federal changes in race definitions. In surveys conducted in 1999 and later, respondents were allowed to select more than one race when selecting their racial category. Estimates presented here only include respondents who selected one category when choosing their race.

Figure 1

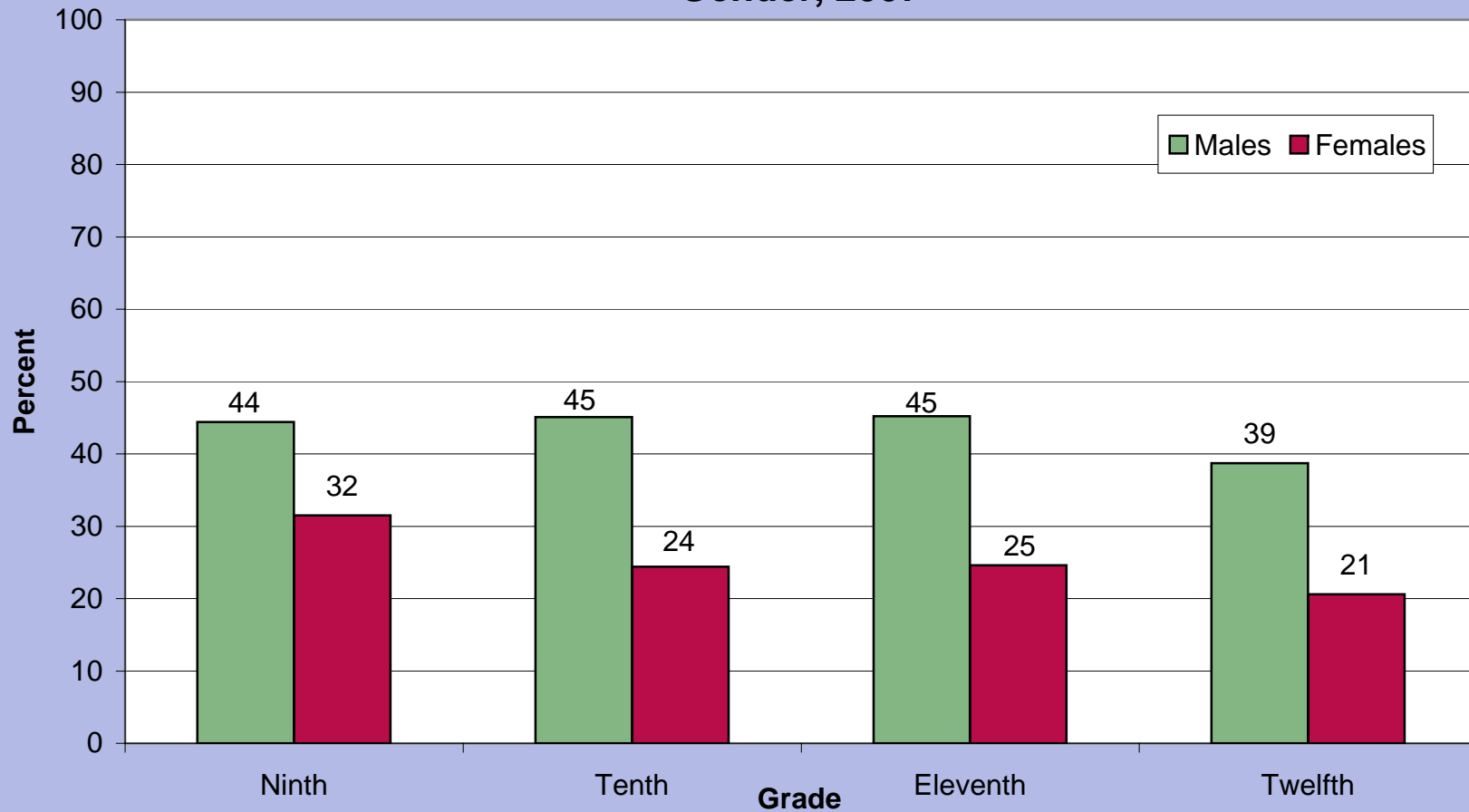
Physical Activity: The Percentage of Students in Grades 9 through 12 Who Participated in Vigorous Physical Activity,¹ 1993-2007



Source: Center for Disease Control and Prevention. *Surveillance Summaries*. June 6, 2008. MMWR 2007 57(No.SS-4). Table 74..

Figure 2

Physical Activity: Percentage of Students in Grades 9 through 12 Who Participated in Regular Vigorous Physical Activity,¹ by Grade and Gender, 2007

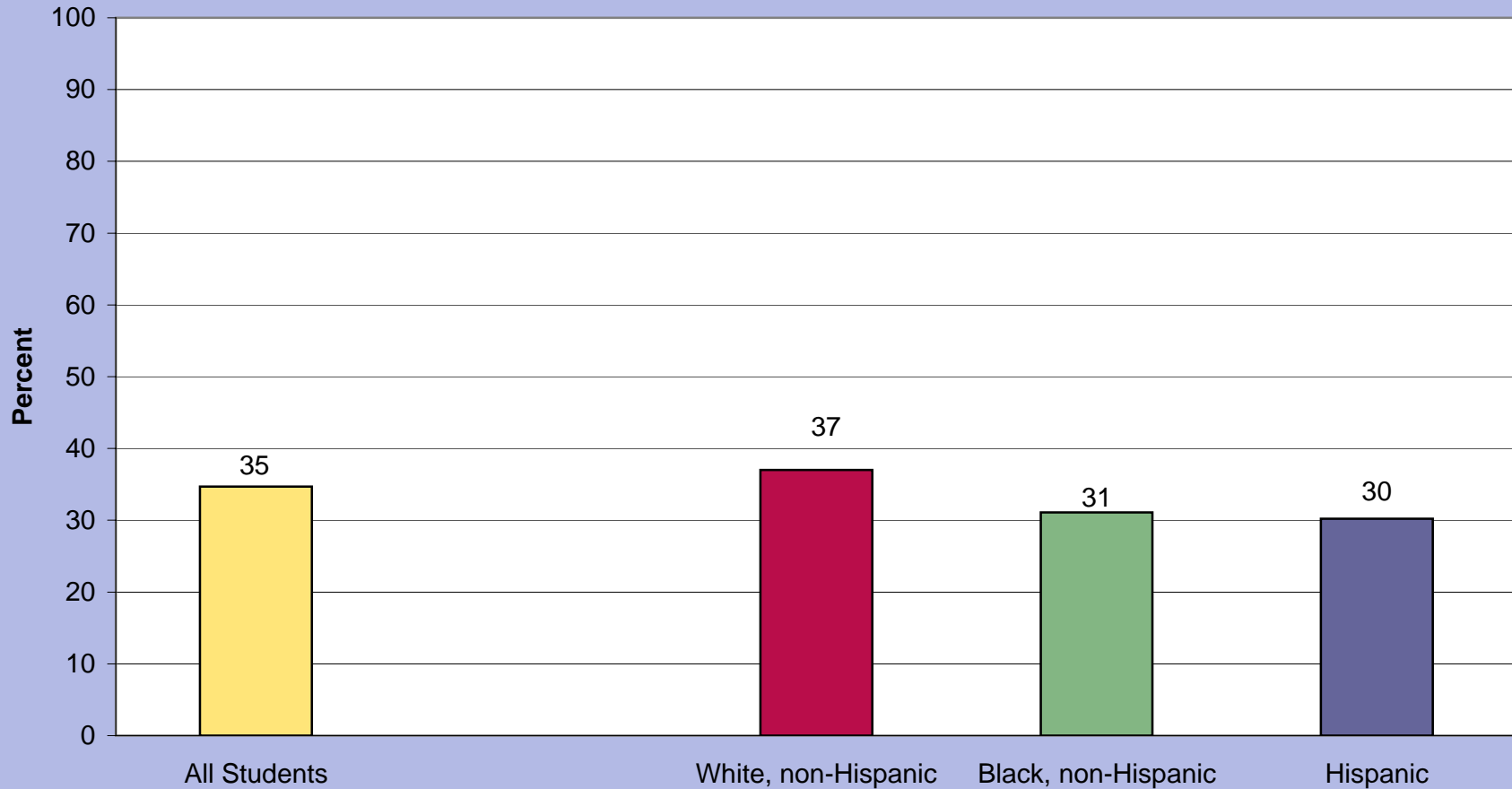


1 Activities that increased heart rate and caused heavy breathing some of the time for a total of 60 minutes a day on at least 5 of the previous seven days preceding the survey

Source: Center for Disease Control and Prevention. *Surveillance Summaries*, June 6, 2008. MMWR 2007 57(No.SS-4). Table 74..

Figure 3

Physical Activity: The Percentage of Students in Grades 9 through 12 Who Participated in Vigorous Physical Activity,¹ by Race and Hispanic Origin,² 2007



¹Activities that increased heart rate and caused heavy breathing some of the time for a total of 60 minutes a day on at least 5 of the previous seven days preceding the survey

Source: Center for Disease Control and Prevention. *Surveillance Summaries*. June 6, 2008. MMWR 2007 57(No.SS-4). Table 74..

Table 1

Adolescents who Met Currently Recommended Physical Activity Levels,¹ Selected Years 1993-2007

| | 1993 | 1995 | 1997 | 1999 | 2001 | 2003 | 2005 | 2005* | 2007* |
|-----------------------------------|------|------|------|------|------|------|------|-------|-------|
| All Students | 65.8 | 63.7 | 63.8 | 64.7 | 64.6 | 62.6 | 68.7 | 35.8 | 34.7 |
| Race/Ethnicity² | | | | | | | | | |
| White, non-Hispanic | 67.7 | 67.0 | 66.8 | 67.4 | 66.5 | 65.2 | 70.2 | 38.7 | 37.0 |
| Black, non-Hispanic | 60.0 | 53.2 | 53.9 | 55.6 | 59.7 | 54.8 | 62.0 | 29.5 | 31.1 |
| Hispanic | 59.4 | 57.3 | 60.4 | 60.5 | 60.5 | 59.3 | 69.4 | 32.9 | 30.2 |
| Grade | | | | | | | | | |
| 9 | 74.5 | 71.5 | 72.7 | 72.5 | 71.9 | 68.5 | 73.5 | 36.9 | 38.1 |
| 10 | 69.5 | 69.3 | 65.9 | 64.7 | 67.0 | 64.9 | 70.5 | 38.5 | 34.8 |
| 11 | 62.5 | 60.3 | 60.0 | 58.2 | 61.3 | 60.1 | 67.4 | 34.4 | 34.8 |
| 12 | 57.8 | 54.9 | 57.5 | 61.4 | 55.5 | 55.0 | 61.8 | 32.9 | 29.5 |
| Male | 74.7 | 74.4 | 72.3 | 72.3 | 72.6 | 70.0 | 75.8 | 43.8 | 43.7 |
| Race/Ethnicity² | | | | | | | | | |
| White, non-Hispanic | 75.9 | 76.0 | 73.4 | 74.6 | 73.7 | 71.9 | 77.0 | 46.9 | 46.1 |
| Black, non-Hispanic | 71.4 | 68.1 | 67.1 | 64.6 | 72.4 | 65.0 | 71.7 | 38.2 | 41.3 |
| Hispanic | 68.8 | 69.7 | 69.2 | 71.6 | 68.8 | 66.7 | 76.0 | 39.0 | 38.6 |
| Grade | | | | | | | | | |
| 9 | 81.2 | 79.9 | 78.7 | 77.0 | 77.1 | 73.1 | 78.4 | 42.8 | 44.4 |
| 10 | 77.2 | 78.6 | 74.3 | 73.3 | 74.0 | 71.5 | 77.8 | 46.8 | 45.1 |
| 11 | 71.4 | 72.3 | 68.9 | 67.1 | 72.2 | 70.4 | 74.2 | 43.8 | 45.2 |
| 12 | 69.8 | 67.2 | 68.4 | 70.7 | 66.1 | 63.7 | 71.9 | 41.9 | 38.7 |
| Female | 56.2 | 52.1 | 53.5 | 57.1 | 57.0 | 55.0 | 61.5 | 27.8 | 25.6 |
| Race/Ethnicity² | | | | | | | | | |
| White, non-Hispanic | 58.8 | 56.7 | 58.4 | 59.7 | 59.8 | 58.1 | 63.3 | 30.2 | 27.9 |
| Black, non-Hispanic | 48.8 | 41.3 | 41.3 | 47.2 | 47.8 | 44.9 | 53.1 | 21.3 | 21.0 |
| Hispanic | 50.0 | 45.2 | 49.9 | 49.5 | 52.4 | 51.8 | 62.6 | 26.5 | 21.9 |
| Grade | | | | | | | | | |
| 9 | 67.5 | 61.6 | 66.1 | 68.0 | 67.3 | 63.6 | 68.4 | 30.8 | 31.5 |
| 10 | 61.1 | 59.3 | 55.7 | 56.2 | 60.1 | 58.2 | 63.0 | 30.0 | 24.4 |
| 11 | 52.7 | 47.2 | 49.4 | 49.2 | 50.8 | 49.4 | 60.7 | 25.1 | 24.6 |
| 12 | 45.4 | 42.4 | 43.6 | 52.3 | 45.4 | 46.4 | 51.7 | 24.0 | 20.6 |

Note: Estimates do not include youth who dropped out of school and therefore may not reflect total national values

* Revised Recommended levels of Physical Activity

¹ The Definition of Recommended Activity Levels for youth changed in 2005. 1993-2005: Recommended level defined as activities that caused sweating and hard breathing for at least 20 minutes on =>3 of the 7 days preceding the survey; 2005-2007: Recommended level defined as physical Activity that increased heart rate and caused hard breathing some of the time for a total of 60 minutes/day on =>5 of the seven days preceding the survey

² Race/ethnicity estimates from 1999 and later are not directly comparable to earlier years due to federal changes in race definitions. In surveys conducted in 1999 and later, respondents were allowed to select more than one race when selecting their racial category. Estimates presented only include respondents who selected one category when choosing their race.

Source: Center for Disease Control and Prevention. *Surveillance Summaries*, Data for 1993: March 24 1995. MMWR 1995; 44(No. SS-1): Table 24. Data for 1995: September 27, 1996. MMWR 1996; 45 (No. SS-4): Table 36. Data for 1997: August 14, 1998. MMWR; 47(No. SS-3): Table 36. Data for 1999: June 9, 2000. MMWR 2000; 49(No. SS-5): Table 40. Data for 2001: June 28, 2002. MMWR 2002; 51 (No. SS-4): Table 40. Data for 2003: May 21, 2004. MMWR 2004; 53(No. SS-2): Table 50. Data for 2005: June 9, 2006. MMWR 2006; 55 (No. SS-5): Table 52. Data for 2007: June 6, 2008. MMWR 2007 57(No.SS-4). Table 74.

