

**Table 57 (page 1 of 5). Participation in leisure-time aerobic and muscle-strengthening activities that meet the federal 2008 Physical Activity Guidelines for Americans among adults aged 18 and over, by selected characteristics: United States, selected years 1998–2015**

Excel and PDF versions (with more data years and standard errors when available): <http://www.cdc.gov/nchs/hus/contents2016.htm#057>.

[Data are based on household interviews of a sample of the civilian noninstitutionalized population]

Characteristic	2008 Physical Activity Guidelines for Americans <sup>1</sup>									
	Met both aerobic activity and muscle-strengthening guidelines					Met neither aerobic activity nor muscle-strengthening guideline				
	1998	2000	2010	2014	2015	1998	2000	2010	2014	2015
	Percent									
18 years and over, age-adjusted <sup>2,3</sup>	14.3	15.0	20.7	21.5	21.6	56.6	54.7	49.1	46.8	46.8
18 years and over, crude <sup>3</sup>	14.5	15.1	20.4	20.9	20.9	56.3	54.6	49.5	47.5	47.5
Age										
18–44 years	18.9	18.9	25.7	26.7	26.4	50.7	49.1	43.1	40.8	40.7
18–24 years	23.8	23.8	29.6	31.1	29.8	46.5	44.5	39.4	38.0	37.8
25–44 years	17.4	17.3	24.3	25.1	25.2	51.9	50.6	44.4	41.8	41.7
45–64 years	11.4	12.8	17.7	17.8	18.1	58.8	57.6	51.0	50.6	50.5
45–54 years	13.2	14.5	19.2	19.3	19.3	56.9	55.4	48.9	49.2	49.0
55–64 years	8.6	10.1	15.9	16.1	16.9	61.8	61.0	53.7	52.1	52.2
65 years and over	5.5	6.8	10.4	11.7	12.7	71.0	67.0	64.6	58.7	58.8
65–74 years	7.0	8.4	13.6	14.4	15.5	65.6	60.3	59.9	53.1	52.4
75 years and over	3.5	4.9	6.4	7.9	8.7	77.8	75.0	70.3	66.7	67.8
Sex <sup>2</sup>										
Male	17.5	17.9	25.1	25.5	25.3	50.8	49.6	43.8	43.4	43.5
Female	11.4	12.3	16.5	17.7	18.0	61.9	59.4	54.0	50.0	49.9
Sex and age										
Male:										
18–44 years	23.0	23.0	31.8	32.3	32.1	44.3	43.0	37.1	36.2	36.8
45–54 years	16.1	16.0	20.9	21.5	21.6	52.9	52.7	45.2	48.0	47.5
55–64 years	9.4	11.3	19.1	17.6	18.9	58.2	58.7	50.1	52.1	50.3
65–74 years	9.5	9.4	16.6	17.5	15.7	58.9	55.3	55.6	50.5	48.4
75 years and over	4.9	7.1	9.1	10.7	9.4	69.5	66.7	62.8	60.3	63.2
Female:										
18–44 years	14.9	15.0	19.6	21.3	20.9	56.9	55.0	49.0	45.2	44.5
45–54 years	10.5	13.1	17.5	17.3	17.1	60.8	57.9	52.4	50.3	50.4
55–64 years	7.8	9.0	13.1	14.8	15.0	65.0	63.1	57.0	52.2	53.9
65–74 years	5.1	7.7	11.0	11.8	15.3	70.9	64.3	63.6	55.4	55.9
75 years and over	2.6	3.6	4.6	5.9	8.2	83.0	80.0	75.3	71.3	71.1
Race <sup>2,4</sup>										
White only	14.8	15.7	21.4	22.1	22.0	55.2	53.1	47.6	45.6	45.7
Black or African American only	11.7	12.2	17.2	19.9	19.8	65.7	64.6	58.5	53.4	54.5
American Indian or Alaska Native only	16.0	*10.6	*12.7	24.1	18.8	57.6	67.1	54.0	51.5	47.0
Asian only	13.5	14.1	17.8	17.0	19.1	59.1	55.0	51.7	49.9	45.1
Native Hawaiian or Other Pacific Islander only	---	*	*	*	*	---	*	*	*	*
2 or more races	---	19.0	25.9	21.0	22.7	---	52.8	45.0	46.1	47.8
Hispanic origin and race <sup>2,4</sup>										
Hispanic or Latino	9.4	9.2	14.4	15.3	16.8	67.7	66.5	60.2	55.2	53.5
Mexican	8.7	8.1	13.2	14.3	16.4	69.5	67.0	60.7	55.8	55.0
Not Hispanic or Latino	14.9	15.8	21.9	22.7	22.6	55.3	53.2	47.2	45.2	45.4
White only	15.5	16.5	22.9	23.7	23.5	53.6	51.4	45.0	43.3	43.6
Black or African American only	11.7	12.2	17.4	20.1	19.9	65.8	64.6	58.4	53.3	54.3
Education <sup>5,6</sup>										
No high school diploma or GED	4.6	4.3	7.7	7.1	8.1	76.3	74.0	69.8	66.7	67.0
High school diploma or GED	8.6	9.5	12.7	13.1	13.2	64.6	61.7	59.0	57.2	58.1
Some college or more	18.2	18.9	25.0	25.4	25.2	48.0	47.1	42.1	40.4	40.7

See footnotes at end of table.

**Table 57 (page 2 of 5). Participation in leisure-time aerobic and muscle-strengthening activities that meet the federal 2008 Physical Activity Guidelines for Americans among adults aged 18 and over, by selected characteristics: United States, selected years 1998–2015**

Excel and PDF versions (with more data years and standard errors when available): <http://www.cdc.gov/nchs/hus/contents2016.htm#057>.

[Data are based on household interviews of a sample of the civilian noninstitutionalized population]

Characteristic	2008 Physical Activity Guidelines for Americans <sup>1</sup>									
	Met both aerobic activity and muscle-strengthening guidelines					Met neither aerobic activity nor muscle-strengthening guideline				
	1998	2000	2010	2014	2015	1998	2000	2010	2014	2015
Percent of poverty level <sup>2,7</sup>						Percent				
Below 100% . . . . .	8.0	9.3	12.0	13.1	13.1	71.3	68.0	63.9	60.2	60.1
100%–199% . . . . .	9.0	9.0	12.7	14.1	12.7	67.1	65.5	60.6	56.6	58.3
200%–399% . . . . .	12.6	13.2	19.2	19.7	20.1	58.0	56.8	50.6	49.0	49.2
400% or more . . . . .	20.2	20.5	29.1	29.9	29.7	46.2	45.0	36.9	35.6	35.8
Hispanic origin and race and percent of poverty level <sup>2,4,7</sup>										
Hispanic or Latino:										
Below 100% . . . . .	4.6	4.4	8.9	9.0	10.3	78.0	75.2	68.6	65.0	64.2
100%–199% . . . . .	7.0	5.0	9.3	12.8	11.8	71.2	72.2	66.7	57.5	58.9
200%–399% . . . . .	11.1	10.2	15.7	17.2	18.9	63.8	63.1	57.6	52.2	50.6
400% or more . . . . .	17.4	19.6	28.1	26.1	28.4	55.6	52.8	42.5	41.3	38.7
Not Hispanic or Latino:										
White only:										
Below 100% . . . . .	9.9	11.7	13.7	16.1	15.0	66.9	63.5	60.5	57.4	55.1
100%–199% . . . . .	9.6	10.3	14.1	14.7	12.5	65.1	62.6	56.4	54.8	58.4
200%–399% . . . . .	13.1	13.9	20.0	19.8	20.2	56.1	54.7	48.6	47.8	48.6
400% or more . . . . .	20.2	21.0	29.9	31.0	30.6	45.2	43.7	35.2	33.6	34.1
Black or African American only:										
Below 100% . . . . .	7.1	9.5	11.3	12.9	13.0	74.6	72.1	66.9	60.5	64.8
100%–199% . . . . .	8.8	9.5	11.7	15.0	14.6	69.8	69.2	67.0	59.6	59.6
200%–399% . . . . .	10.6	11.8	20.8	23.2	20.7	64.5	64.3	53.3	50.8	50.8
400% or more . . . . .	21.2	17.6	26.1	30.4	30.1	54.2	54.9	47.7	41.7	44.9
Disability measure <sup>2,8</sup>										
Any basic actions difficulty or complex activity limitation . . . . .										
Any basic actions difficulty . . . . .	10.2	10.3	13.6	14.3	14.0	64.4	62.2	59.1	58.3	59.0
Any complex activity limitation . . . . .	9.8	10.3	13.8	14.2	13.7	64.8	62.1	59.2	58.6	59.6
No disability . . . . .	7.7	7.2	8.9	10.7	9.6	71.9	71.2	67.2	66.3	68.5
No disability . . . . .	16.0	17.0	24.2	24.5	25.3	52.5	50.6	43.3	41.2	39.9
Geographic region <sup>2</sup>										
Northeast . . . . .	14.2	17.0	20.2	22.3	22.1	57.0	51.8	49.1	48.8	46.8
Midwest . . . . .	15.0	16.4	20.7	20.8	21.0	54.9	53.4	49.7	47.7	48.2
South . . . . .	11.8	12.1	18.8	20.1	20.7	61.4	59.7	51.8	48.2	48.4
West . . . . .	18.5	16.7	24.0	24.0	23.2	49.5	50.1	44.5	42.3	42.8
Location of residence <sup>2,9</sup>										
Within MSA . . . . .	14.9	15.7	21.8	22.4	22.4	55.8	54.1	47.8	45.9	45.5
Outside MSA . . . . .	12.2	12.3	14.5	16.0	16.1	59.7	56.9	56.9	52.4	55.1

See footnotes at end of table.

**Table 57 (page 3 of 5). Participation in leisure-time aerobic and muscle-strengthening activities that meet the federal 2008 Physical Activity Guidelines for Americans among adults aged 18 and over, by selected characteristics: United States, selected years 1998–2015**

Excel and PDF versions (with more data years and standard errors when available): <http://www.cdc.gov/nchs/hus/contents2016.htm#057>.

[Data are based on household interviews of a sample of the civilian noninstitutionalized population]

Characteristic	2008 Physical Activity Guidelines for Americans <sup>1</sup>									
	Met aerobic activity guideline					Met muscle-strengthening guideline				
	1998	2000	2010	2014	2015	1998	2000	2010	2014	2015
	Percent									
18 years and over, age-adjusted <sup>2,3</sup>	40.0	42.2	47.3	50.0	49.8	17.7	18.0	24.4	24.6	25.0
18 years and over, crude <sup>3</sup>	40.3	42.4	46.9	49.3	49.0	17.9	18.1	24.0	24.0	24.4
Age										
18–44 years	45.7	47.7	53.8	56.7	56.4	22.5	22.1	28.8	29.3	29.3
18–24 years	49.3	52.2	57.2	59.5	59.0	28.0	27.2	32.8	33.8	32.9
25–44 years	44.6	46.3	52.5	55.7	55.5	20.8	20.5	27.4	27.7	27.9
45–64 years	38.2	39.7	45.2	46.2	45.9	14.4	15.5	21.5	21.0	21.8
45–54 years	40.1	42.1	47.6	47.8	47.9	16.2	17.0	22.6	22.4	22.5
55–64 years	35.3	36.1	42.1	44.4	43.8	11.5	13.1	20.1	19.4	21.0
65 years and over	26.0	30.1	30.5	36.5	36.6	8.6	9.8	15.4	16.5	17.3
65–74 years	31.7	36.8	35.9	42.4	43.3	9.7	11.3	17.9	19.0	19.8
75 years and over	18.7	22.1	23.9	28.2	27.2	7.2	8.0	12.3	13.0	13.8
Sex <sup>2</sup>										
Male	45.4	47.4	52.1	53.3	53.0	21.2	20.8	29.1	28.8	28.8
Female	35.1	37.6	42.7	47.0	46.9	14.4	15.4	19.8	20.7	21.2
Sex and age										
Male:										
18–44 years	51.5	53.6	59.0	60.8	60.0	27.2	26.3	35.6	35.4	35.2
45–54 years	44.3	45.2	50.7	48.9	49.3	18.8	18.0	24.8	24.5	25.0
55–64 years	38.3	38.9	46.0	44.7	46.5	12.9	13.8	22.9	20.7	22.1
65–74 years	38.5	41.8	40.7	45.6	47.2	12.0	12.2	20.6	21.5	20.1
75 years and over	26.1	30.7	32.3	35.2	31.1	9.5	10.1	14.5	15.3	15.0
Female:										
18–44 years	40.0	42.0	48.5	52.7	52.9	17.9	17.9	22.1	23.4	23.5
45–54 years	36.1	39.1	44.7	46.7	46.6	13.7	16.1	20.4	20.4	20.1
55–64 years	32.5	33.5	38.6	44.2	41.2	10.3	12.4	17.5	18.3	19.9
65–74 years	26.2	32.6	31.8	39.7	39.9	7.8	10.5	15.6	16.8	19.5
75 years and over	14.0	16.8	18.3	23.2	24.4	5.7	6.7	10.8	11.4	12.9
Race <sup>2,4</sup>										
White only	41.5	44.1	48.9	51.3	51.0	18.0	18.5	24.8	25.2	25.3
Black or African American only	30.4	31.7	37.3	43.6	42.0	15.6	16.0	21.4	23.1	23.5
American Indian or Alaska Native only	39.7	29.7	42.0	44.1	46.9	18.2	13.9	16.7	27.9	24.4
Asian only	37.1	41.7	44.2	47.5	51.4	17.2	17.2	21.9	19.5	22.6
Native Hawaiian or Other Pacific Islander only	---	*	*	*	*	---	*	*	*	*
2 or more races	---	43.9	50.2	50.5	49.0	---	22.2	30.4	24.8	26.3
Hispanic origin and race <sup>2,4</sup>										
Hispanic or Latino	29.1	30.8	36.2	41.3	43.3	12.7	11.9	18.1	19.0	20.0
Mexican	27.4	30.0	35.9	40.6	42.3	11.9	11.3	16.7	18.1	19.2
Not Hispanic or Latino	41.3	43.7	49.1	51.7	51.2	18.3	18.8	25.5	25.8	26.0
White only	43.1	45.7	51.5	53.7	53.1	18.7	19.3	26.3	26.7	26.7
Black or African American only	30.4	31.7	37.3	43.6	42.1	15.6	16.0	21.6	23.3	23.7
Education <sup>5,6</sup>										
No high school diploma or GED	21.4	23.9	27.1	31.2	30.1	7.0	6.6	10.9	9.3	11.0
High school diploma or GED	32.6	35.7	37.3	39.7	39.0	11.4	12.1	16.2	16.2	16.2
Some college or more	48.1	49.4	53.9	56.1	55.5	22.1	22.4	28.9	28.9	29.0

See footnotes at end of table.

**Table 57 (page 4 of 5). Participation in leisure-time aerobic and muscle-strengthening activities that meet the federal 2008 Physical Activity Guidelines for Americans among adults aged 18 and over, by selected characteristics: United States, selected years 1998–2015**

Excel and PDF versions (with more data years and standard errors when available): <http://www.cdc.gov/nchs/hus/contents2016.htm#057>.

[Data are based on household interviews of a sample of the civilian noninstitutionalized population]

Characteristic	2008 Physical Activity Guidelines for Americans <sup>1</sup>									
	Met aerobic activity guideline					Met muscle-strengthening guideline				
	1998	2000	2010	2014	2015	1998	2000	2010	2014	2015
Percent of poverty level <sup>2,7</sup>						Percent				
Below 100% . . . . .	25.9	29.3	32.2	36.7	37.1	10.8	12.3	15.8	16.2	16.0
100%–199% . . . . .	29.9	32.0	36.0	40.4	38.5	12.0	11.5	16.1	17.3	15.9
200%–399% . . . . .	38.8	39.9	45.5	47.8	47.4	15.9	16.5	23.1	23.0	23.6
400% or more . . . . .	50.0	52.0	59.3	61.4	60.7	24.0	23.4	32.8	32.9	33.2
Hispanic origin and race and percent of poverty level <sup>2,4,7</sup>										
Hispanic or Latino:										
Below 100% . . . . .	19.5	22.1	27.8	31.2	33.1	7.1	7.2	12.4	13.0	13.4
100%–199% . . . . .	25.6	25.8	30.1	39.0	38.9	10.2	7.1	12.6	16.3	14.2
200%–399% . . . . .	33.1	33.0	38.8	43.5	45.3	14.6	14.0	19.5	21.8	22.8
400% or more . . . . .	40.6	45.1	53.4	56.2	57.4	21.1	21.7	32.1	28.7	32.2
Not Hispanic or Latino:										
White only:										
Below 100% . . . . .	30.2	34.0	35.5	39.7	41.8	12.8	14.7	17.5	18.9	18.1
100%–199% . . . . .	32.2	34.8	40.6	42.5	38.0	12.5	12.9	17.0	17.6	15.9
200%–399% . . . . .	40.8	42.3	47.8	49.0	48.3	16.2	16.9	23.6	22.9	23.3
400% or more . . . . .	51.0	53.4	61.0	63.3	62.5	24.0	23.8	33.5	34.0	33.9
Black or African American only:										
Below 100% . . . . .	22.7	25.4	29.3	37.0	32.9	10.0	12.1	15.3	15.7	15.3
100%–199% . . . . .	26.9	28.0	28.5	37.4	37.3	12.1	12.3	16.0	18.1	18.0
200%–399% . . . . .	30.6	31.4	41.9	45.6	45.2	15.5	16.2	25.7	26.9	25.3
400% or more . . . . .	41.7	40.3	48.5	54.8	50.7	25.4	22.4	29.8	34.0	34.5
Disability measure <sup>2,8</sup>										
Any basic actions difficulty or complex activity limitation . . . . .										
Any basic actions difficulty . . . . .	31.8	34.2	36.4	38.1	37.4	13.9	14.0	18.0	18.0	17.4
Any complex activity limitation . . . . .	31.3	34.0	36.6	37.7	36.9	13.6	14.2	18.1	17.9	17.1
No disability . . . . .	24.4	24.9	27.9	29.2	27.6	11.5	11.3	13.9	15.1	13.4
44.3	46.6	53.4	56.0	56.9	19.3	19.8	27.4	27.3	28.5	
Geographic region <sup>2</sup>										
Northeast . . . . .	39.6	45.3	46.9	48.6	49.8	17.5	20.0	24.3	24.9	25.5
Midwest . . . . .	42.0	43.5	46.1	48.9	48.3	18.2	19.3	24.7	24.3	24.5
South . . . . .	35.3	37.3	45.0	48.7	48.1	15.0	15.1	22.0	23.2	24.1
West . . . . .	46.7	46.9	52.0	54.5	54.2	22.3	19.7	27.5	27.1	26.3
Location of residence <sup>2,9</sup>										
Within MSA . . . . .	40.8	42.9	48.7	51.0	51.2	18.3	18.6	25.4	25.5	25.8
Outside MSA . . . . .	37.1	39.9	39.1	44.6	41.1	15.4	15.5	18.5	19.0	19.7

See footnotes at end of table.

**Table 57 (page 5 of 5). Participation in leisure-time aerobic and muscle-strengthening activities that meet the federal 2008 Physical Activity Guidelines for Americans among adults aged 18 and over, by selected characteristics: United States, selected years 1998–2015**

Excel and PDF versions (with more data years and standard errors when available): <http://www.cdc.gov/nchs/hus/contents2016.htm#057>.

[Data are based on household interviews of a sample of the civilian noninstitutionalized population]

- \* Estimates are considered unreliable. Data preceded by an asterisk have a relative standard error (RSE) of 20%–30%. Data not shown have an RSE greater than 30%.  
- - - Data not available.
- <sup>1</sup> Starting with *Health, United States, 2010*, measures of physical activity shown in this table changed to reflect the federal 2008 *Physical Activity Guidelines for Americans* (available from: <http://www.health.gov/PAGuidelines/>). This table presents four measures of physical activity that are of interest to the public health community: the percentage of adults who met the federal 2008 guidelines for both aerobic activity and muscle strengthening; the percentage who met neither the aerobic activity guideline nor the muscle-strengthening guideline; the percentage who met the aerobic activity guideline; and the percentage who met the muscle-strengthening guideline. Persons who met neither the aerobic activity nor the muscle-strengthening guideline were unable to be active, were completely inactive, or had some aerobic or muscle-strengthening activities but amounts were insufficient to meet the guidelines. The percentage of persons who met the aerobic activity guideline includes those who may or may not have also met the muscle-strengthening guideline. Similarly, the percentage of persons who met the muscle-strengthening guideline includes those who may or may not have also met the aerobic activity guideline. The federal 2008 guidelines recommend that for substantial health benefits adults perform at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Aerobic activity should be performed in episodes of at least 10 minutes, and preferably should be spread throughout the week. The 2008 guidelines also recommend that adults perform muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week, because these activities provide additional health benefits. See Appendix II, Physical activity, leisure-time.
- <sup>2</sup> Estimates are age-adjusted to the year 2000 standard population using five age groups: 18–44 years, 45–54 years, 55–64 years, 65–74 years, and 75 years and over. Age-adjusted estimates in this table may differ from other age-adjusted estimates based on the same data and presented elsewhere if different age groups are used in the adjustment procedure. See Appendix II, Age adjustment.
- <sup>3</sup> Includes all other races not shown separately, unknown education level, and unknown disability status.
- <sup>4</sup> The race groups, white, black, American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, and 2 or more races, include persons of Hispanic and non-Hispanic origin. Persons of Hispanic origin may be of any race. Starting with 1999 data, race-specific estimates are tabulated according to the 1997 *Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity* and are not strictly comparable with estimates for earlier years. The five single-race categories plus multiple-race categories shown in the table conform to the 1997 Standards. Starting with 1999 data, race-specific estimates are for persons who reported only one racial group; the category 2 or more races includes persons who reported more than one racial group. Prior to 1999, data were tabulated according to the 1977 Standards with four racial groups, and the Asian only category included Native Hawaiian or Other Pacific Islander. Estimates for single-race categories prior to 1999 included persons who reported one race or, if they reported more than one race, identified one race as best representing their race. Starting with 2003 data (shown in spreadsheet version), race responses of other race and unspecified multiple race were treated as missing, and then race was imputed if these were the only race responses. Almost all persons with a race response of other race were of Hispanic origin. See Appendix II, Hispanic origin; Race.
- <sup>5</sup> Estimates are for persons aged 25 and over and are age-adjusted to the year 2000 standard population using five age groups: 25–44 years, 45–54 years, 55–64 years, 65–74 years, and 75 years and over. See Appendix II, Age adjustment.
- <sup>6</sup> GED is General Educational Development high school equivalency diploma. See Appendix II, Education.
- <sup>7</sup> Percent of poverty level is based on family income and family size and composition using U.S. Census Bureau poverty thresholds. Missing family income data were imputed for 1997 and beyond. See Appendix II, Family income; Poverty; Table VI.
- <sup>8</sup> Any basic actions difficulty or complex activity limitation is defined as having one or more of the following limitations or difficulties: movement difficulty, emotional difficulty, sensory (seeing or hearing) difficulty, cognitive difficulty, self-care (activities of daily living or instrumental activities of daily living) limitation, social limitation, or work limitation. For more information, see Appendix II, Basic actions difficulty; Complex activity limitation. Starting with 2007 data, the hearing question, a component of the basic actions difficulty measure, was revised. Consequently, data prior to 2007 are not comparable with data for 2007 and beyond. For more information on the impact of the revised hearing question, see Appendix II, Hearing trouble.
- <sup>9</sup> MSA is metropolitan statistical area. Starting with 2006 data, MSA status is determined using 2000 census data and the 2000 standards for defining MSAs. For data prior to 2006, see Appendix II, Metropolitan statistical area (MSA) for the applicable standards.

NOTES: Standard errors are available in the spreadsheet version of this table. Available from: <http://www.cdc.gov/nchs/hus.htm>. Data for additional years are available. See the Excel spreadsheet on the *Health, United States* website at: <http://www.cdc.gov/nchs/hus.htm>.

SOURCE: NCHS, National Health Interview Survey, family core and sample adult questionnaires. See Appendix I, National Health Interview Survey (NHIS).