

Table 25. 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 1998–2018

Excel version (with more data years and standard errors when available): <https://www.cdc.gov/nchs/hus/contents2019.htm#Table-025>

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

Characteristic	2008 Physical Activity Guidelines for Americans ¹									
	Meet both aerobic-activity and muscle-strengthening guidelines					Meet neither aerobic-activity nor muscle-strengthening guidelines				
	1998	2000	2010	2017	2018	1998	2000	2010	2017	2018
	Percent									
18 years and over, age adjusted ^{2,3}	14.3	15.0	20.7	24.5	24.2	56.6	54.7	49.1	42.6	42.2
18 years and over, crude ³	14.5	15.1	20.4	23.5	23.3	56.3	54.6	49.5	43.4	43.0
Age group										
18–44 years	18.9	18.9	25.7	30.3	30.0	50.7	49.1	43.1	36.7	36.5
18–24 years	23.8	23.8	29.6	33.8	34.0	46.5	44.5	39.4	36.1	31.7
25–44 years	17.4	17.3	24.3	29.1	28.6	51.9	50.6	44.4	36.9	38.2
45–64 years	11.4	12.8	17.7	20.7	19.7	58.8	57.6	51.0	45.4	44.7
45–54 years	13.2	14.5	19.2	22.7	21.3	56.9	55.4	48.9	43.0	44.2
55–64 years	8.6	10.1	15.9	18.6	18.2	61.8	61.0	53.7	47.7	45.2
65 years and over	5.5	6.8	10.4	12.9	13.9	71.0	67.0	64.6	55.6	54.9
65–74 years	7.0	8.4	13.6	15.7	16.4	65.6	60.3	59.9	49.3	49.6
75 years and over	3.5	4.9	6.4	8.7	10.2	77.8	75.0	70.3	64.9	62.9
Sex ²										
Male	17.5	17.9	25.1	29.0	27.7	50.8	49.6	43.8	37.9	38.2
Female	11.4	12.3	16.5	20.2	20.9	61.9	59.4	54.0	46.9	46.0
Sex and age										
Male:										
18–44 years	23.0	23.0	31.8	36.7	34.6	44.3	43.0	37.1	31.3	32.9
45–54 years	16.1	16.0	20.9	25.3	24.2	52.9	52.7	45.2	39.5	39.9
55–64 years	9.4	11.3	19.1	20.8	19.1	58.2	58.7	50.1	44.9	41.5
65–74 years	9.5	9.4	16.6	18.2	18.3	58.9	55.3	55.6	45.3	46.2
75 years and over	4.9	7.1	9.1	11.1	13.4	69.5	66.7	62.8	59.5	55.1
Female:										
18–44 years	14.9	15.0	19.6	24.1	25.5	56.9	55.0	49.0	41.9	40.1
45–54 years	10.5	13.1	17.5	20.2	18.5	60.8	57.9	52.4	46.4	48.2
55–64 years	7.8	9.0	13.1	16.7	17.4	65.0	63.1	57.0	50.3	48.5
65–74 years	5.1	7.7	11.0	13.6	14.8	70.9	64.3	63.6	52.7	52.6
75 years and over	2.6	3.6	4.6	6.9	7.9	83.0	80.0	75.3	69.0	68.5
Race ^{2,4}										
White only	14.8	15.7	21.4	25.3	25.0	55.2	53.1	47.6	41.1	41.1
Black or African American only	11.7	12.2	17.2	20.8	20.1	65.7	64.6	58.5	51.4	50.1
American Indian or Alaska Native only	16.0	*10.6	*12.7	23.8	19.2	57.6	67.1	54.0	42.0	41.9
Asian only	13.5	14.1	17.8	22.3	22.9	59.1	55.0	51.7	45.0	41.6
Native Hawaiian or Other Pacific Islander only	---	*	*	*	23.0	---	*	*	*	49.1
2 or more races	---	19.0	25.9	24.8	26.0	---	52.8	45.0	37.8	39.4
Hispanic origin and race ^{2,4}										
Hispanic or Latino	9.4	9.2	14.4	18.9	21.6	67.7	66.5	60.2	51.5	49.5
Mexican	8.7	8.1	13.2	18.0	21.1	69.5	67.0	60.7	51.1	48.6
Not Hispanic or Latino	14.9	15.8	21.9	25.7	24.8	55.3	53.2	47.2	40.8	40.8
White only	15.5	16.5	22.9	27.0	25.9	53.6	51.4	45.0	38.4	38.8
Black or African American only	11.7	12.2	17.4	21.1	20.1	65.8	64.6	58.4	51.7	50.2
Education ^{5,6}										
No high school diploma or GED	4.6	4.3	7.7	9.0	9.9	76.3	74.0	69.8	64.4	63.7
High school diploma or GED	8.6	9.5	12.7	15.1	14.9	64.6	61.7	59.0	53.7	52.5
Some college or more	18.2	18.9	25.0	28.1	27.6	48.0	47.1	42.1	36.4	37.1

See footnotes at end of table.

Table 25. 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 1998–2018—Con.

Excel version (with more data years and standard errors when available): <https://www.cdc.gov/nchs/hus/contents2019.htm#Table-025>

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

Characteristic	2008 Physical Activity Guidelines for Americans ¹									
	Meet both aerobic-activity and muscle-strengthening guidelines					Meet neither aerobic-activity nor muscle-strengthening guidelines				
	1998	2000	2010	2017	2018	1998	2000	2010	2017	2018
Percent of poverty level ^{2,7}						Percent				
Below 100%	8.0	9.3	12.0	14.9	14.9	71.3	68.0	63.9	57.7	56.5
100%–199%	9.0	9.0	12.7	15.6	16.6	67.1	65.5	60.6	55.5	52.7
200%–399%	12.6	13.2	19.2	20.8	21.8	58.0	56.8	50.6	45.5	45.8
400% or more	20.2	20.5	29.1	33.3	31.6	46.2	45.0	36.9	31.4	32.0
Hispanic origin and race and percent of poverty level ^{2,4,7}										
Hispanic or Latino:										
Below 100%	4.6	4.4	8.9	12.6	13.4	78.0	75.2	68.6	61.9	60.5
100%–199%	7.0	5.0	9.3	12.5	16.9	71.2	72.2	66.7	59.2	53.7
200%–399%	11.1	10.2	15.7	20.0	23.7	63.8	63.1	57.6	49.2	48.9
400% or more	17.4	19.6	28.1	29.3	31.5	55.6	52.8	42.5	37.2	35.1
Not Hispanic or Latino:										
White only:										
Below 100%	9.9	11.7	13.7	16.2	15.0	66.9	63.5	60.5	53.5	53.1
100%–199%	9.6	10.3	14.1	17.8	17.1	65.1	62.6	56.4	53.1	51.6
200%–399%	13.1	13.9	20.0	20.8	21.8	56.1	54.7	48.6	43.4	43.9
400% or more	20.2	21.0	29.9	34.6	32.2	45.2	43.7	35.2	29.4	30.7
Black or African American only:										
Below 100%	7.1	9.5	11.3	13.6	13.8	74.6	72.1	66.9	62.5	59.2
100%–199%	8.8	9.5	11.7	14.0	15.9	69.8	69.2	67.0	58.5	55.8
200%–399%	10.6	11.8	20.8	22.9	20.2	64.5	64.3	53.3	47.9	51.8
400% or more	21.2	17.6	26.1	31.3	29.3	54.2	54.9	47.7	41.2	37.6
Level of difficulty ^{2,8}										
A lot of difficulty or cannot do at all	---	---	*	8.8	11.6	---	---	77.6	70.6	66.4
Some difficulty	---	---	18.4	21.1	21.7	---	---	51.5	43.8	43.1
No difficulty	---	---	23.5	26.9	27.6	---	---	43.8	38.5	36.7
Geographic region ²										
Northeast	14.2	17.0	20.2	25.7	24.9	57.0	51.8	49.1	42.9	41.0
Midwest	15.0	16.4	20.7	26.1	24.1	54.9	53.4	49.7	41.0	42.2
South	11.8	12.1	18.8	21.7	21.6	61.4	59.7	51.8	46.3	46.2
West	18.5	16.7	24.0	26.5	27.8	49.5	50.1	44.5	37.8	37.1
Location of residence ^{2,9}										
Within MSA	14.9	15.7	21.8	25.6	25.4	55.8	54.1	47.8	41.5	41.2
Outside MSA	12.2	12.3	14.5	16.3	16.0	59.7	56.9	56.9	49.9	49.5

See footnotes at end of table.

Table 25. 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 1998–2018—Con.

Excel version (with more data years and standard errors when available): <https://www.cdc.gov/nchs/hus/contents2019.htm#Table-025>

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

Characteristic	2008 Physical Activity Guidelines for Americans ¹									
	Meet aerobic-activity guidelines					Meet muscle-strengthening guidelines				
	1998	2000	2010	2017	2018	1998	2000	2010	2017	2018
	Percent									
18 years and over, age adjusted ^{2,3}	40.0	42.2	47.3	54.1	54.3	17.7	18.0	24.4	27.8	27.8
18 years and over, crude ³	40.3	42.4	46.9	53.2	53.4	17.9	18.1	24.0	27.0	26.9
Age group										
18–44 years	45.7	47.7	53.8	60.5	60.4	22.5	22.1	28.8	33.2	33.2
18–24 years	49.3	52.2	57.2	61.6	64.8	28.0	27.2	32.8	36.5	37.7
25–44 years	44.6	46.3	52.5	60.1	58.8	20.8	20.5	27.4	32.0	31.7
45–64 years	38.2	39.7	45.2	51.5	51.6	14.4	15.5	21.5	23.7	23.4
45–54 years	40.1	42.1	47.6	54.0	52.6	16.2	17.0	22.6	25.6	24.4
55–64 years	35.3	36.1	42.1	49.0	50.7	11.5	13.1	20.1	21.8	22.5
65 years and over	26.0	30.1	30.5	39.1	40.5	8.6	9.8	15.4	18.2	18.6
65–74 years	31.7	36.8	35.9	45.4	46.1	9.7	11.3	17.9	21.1	21.0
75 years and over	18.7	22.1	23.9	29.8	32.2	7.2	8.0	12.3	14.1	15.1
Sex ²										
Male	45.4	47.4	52.1	58.7	58.2	21.2	20.8	29.1	32.4	31.4
Female	35.1	37.6	42.7	49.8	50.6	14.4	15.4	19.8	23.5	24.3
Sex and age										
Male:										
18–44 years	51.5	53.6	59.0	65.7	63.6	27.2	26.3	35.6	39.7	38.3
45–54 years	44.3	45.2	50.7	57.2	56.9	18.8	18.0	24.8	28.6	27.3
55–64 years	38.3	38.9	46.0	52.4	54.8	12.9	13.8	22.9	23.4	22.7
65–74 years	38.5	41.8	40.7	50.1	50.3	12.0	12.2	20.6	22.7	22.2
75 years and over	26.1	30.7	32.3	34.9	39.8	9.5	10.1	14.5	16.9	18.5
Female:										
18–44 years	40.0	42.0	48.5	55.4	57.2	17.9	17.9	22.1	26.8	28.2
45–54 years	36.1	39.1	44.7	50.9	48.6	13.7	16.1	20.4	22.8	21.7
55–64 years	32.5	33.5	38.6	45.9	46.8	10.3	12.4	17.5	20.4	22.2
65–74 years	26.2	32.6	31.8	41.4	42.4	7.8	10.5	15.6	19.6	19.8
75 years and over	14.0	16.8	18.3	26.0	26.8	5.7	6.7	10.8	12.0	12.7
Race ^{2,4}										
White only	41.5	44.1	48.9	55.8	55.6	18.0	18.5	24.8	28.4	28.4
Black or African American only	30.4	31.7	37.3	44.4	45.8	15.6	16.0	21.4	24.8	24.4
American Indian or Alaska Native only	39.7	29.7	42.0	54.3	54.1	18.2	13.9	16.7	27.6	24.2
Asian only	37.1	41.7	44.2	51.5	54.7	17.2	17.2	21.9	25.8	26.7
Native Hawaiian or Other Pacific Islander only	---	*	*	*	46.8	---	*	*	*	27.1
2 or more races	---	43.9	50.2	57.0	56.6	---	22.2	30.4	30.5	30.0
Hispanic origin and race ^{2,4}										
Hispanic or Latino	29.1	30.8	36.2	45.0	47.8	12.7	11.9	18.1	22.5	24.4
Mexican	27.4	30.0	35.9	45.4	48.4	11.9	11.3	16.7	21.4	24.1
Not Hispanic or Latino	41.3	43.7	49.1	56.0	55.6	18.3	18.8	25.5	28.9	28.5
White only	43.1	45.7	51.5	58.6	57.6	18.7	19.3	26.3	30.0	29.4
Black or African American only	30.4	31.7	37.3	44.6	45.8	15.6	16.0	21.6	24.7	24.3
Education ^{5,6}										
No high school diploma or GED	21.4	23.9	27.1	32.7	34.7	7.0	6.6	10.9	12.0	11.5
High school diploma or GED	32.6	35.7	37.3	43.3	43.3	11.4	12.1	16.2	18.2	19.3
Some college or more	48.1	49.4	53.9	59.9	59.3	22.1	22.4	28.9	31.8	31.3

See footnotes at end of table.

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Excel version (with more data years and standard errors when available): <https://www.cdc.gov/nchs/hus/contents2019.htm#Table-025>

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

Characteristic	2008 Physical Activity Guidelines for Americans ¹									
	Meet aerobic-activity guidelines					Meet muscle-strengthening guidelines				
	1998	2000	2010	2017	2018	1998	2000	2010	2017	2018
Percent of poverty level ^{2,7}						Percent				
Below 100%	25.9	29.3	32.2	39.3	39.9	10.8	12.3	15.8	18.1	18.7
100%–199%	29.9	32.0	36.0	41.4	43.3	12.0	11.5	16.1	18.8	20.4
200%–399%	38.8	39.9	45.5	50.7	50.9	15.9	16.5	23.1	24.7	25.2
400% or more	50.0	52.0	59.3	65.4	64.5	24.0	23.4	32.8	36.3	35.1
Hispanic origin and race and percent of poverty level ^{2,4,7}										
Hispanic or Latino:										
Below 100%	19.5	22.1	27.8	35.8	37.2	7.1	7.2	12.4	15.4	15.9
100%–199%	25.6	25.8	30.1	37.5	43.7	10.2	7.1	12.6	15.7	19.5
200%–399%	33.1	33.0	38.8	46.0	48.9	14.6	14.0	19.5	25.1	26.0
400% or more	40.6	45.1	53.4	59.4	61.2	21.1	21.7	32.1	32.5	35.3
Not Hispanic or Latino:										
White only:										
Below 100%	30.2	34.0	35.5	43.5	43.4	12.8	14.7	17.5	19.4	18.7
100%–199%	32.2	34.8	40.6	44.2	44.8	12.5	12.9	17.0	20.8	20.6
200%–399%	40.8	42.3	47.8	53.2	52.5	16.2	16.9	23.6	24.3	25.2
400% or more	51.0	53.4	61.0	67.6	65.8	24.0	23.8	33.5	37.5	35.8
Black or African American only:										
Below 100%	22.7	25.4	29.3	34.0	35.7	10.0	12.1	15.3	17.0	19.0
100%–199%	26.9	28.0	28.5	37.9	38.5	12.1	12.3	16.0	17.4	21.4
200%–399%	30.6	31.4	41.9	46.8	45.8	15.5	16.2	25.7	28.1	23.3
400% or more	41.7	40.3	48.5	56.6	59.0	25.4	22.4	29.8	33.4	32.7
Level of difficulty ^{2,8}										
A lot of difficulty or cannot do at all	---	---	20.0	25.7	30.3	---	---	*8.9	12.4	15.1
Some difficulty	---	---	44.2	52.5	52.6	---	---	22.7	24.8	26.1
No difficulty	---	---	52.4	59.0	60.2	---	---	27.2	29.5	30.7
Geographic region ²										
Northeast	39.6	45.3	46.9	53.5	55.5	17.5	20.0	24.3	29.1	28.6
Midwest	42.0	43.5	46.1	55.5	53.4	18.2	19.3	24.7	29.7	28.4
South	35.3	37.3	45.0	50.8	50.5	15.0	15.1	22.0	24.7	25.0
West	46.7	46.9	52.0	58.7	59.9	22.3	19.7	27.5	30.0	30.8
Location of residence ^{2,9}										
Within MSA	40.8	42.9	48.7	55.1	55.3	18.3	18.6	25.4	29.0	29.0
Outside MSA	37.1	39.9	39.1	47.3	47.5	15.4	15.5	18.5	19.2	18.9

See footnotes at end of table.

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Excel version (with more data years and standard errors when available): <https://www.cdc.gov/nchs/hus/contents2019.htm#Table-025>

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

* Estimates are considered unreliable. Starting with 2016 data, the reliability of survey percentage estimates is assessed using new multistep National Center for Health Statistics data presentation standards for proportions. Before 2016 data, the reliability of estimates was evaluated based on relative standard errors (RSEs). Data preceded by an asterisk have an RSE of 20%–30%. Data not shown have an RSE greater than 30%. For more information, see Appendix II, Data presentation standards for proportions; Relative standard error (RSE).

--- Data not available.

¹Starting with *Health, United States, 2010*, measures of physical activity shown in this table are changed to reflect the federal 2008 Physical Activity Guidelines for Americans (available from: <https://health.gov/paguidelines/pdf/paguide.pdf>). 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 of moderate or high intensity and involve all major muscle groups on 2 or more days a week. This table presents four measures of physical activity: the percentage of adults who meet the federal 2008 guidelines for both aerobic activity and muscle strengthening; the percentage who meet neither the aerobic-activity guidelines nor the muscle-strengthening guidelines; the percentage who meet the aerobic-activity guidelines; and the percentage who meet the muscle-strengthening guidelines. Persons who meet neither the aerobic-activity nor the muscle-strengthening guidelines are unable to be active, are completely inactive, or have some aerobic or muscle-strengthening activities that are insufficient to meet the guidelines. The percentage of persons who meet the aerobic-activity guidelines includes those who may also meet the muscle-strengthening guidelines. Similarly, the percentage of persons who meet the muscle-strengthening guidelines includes those who may also meet the aerobic-activity guidelines. See Appendix II, Physical activity, leisure-time.

²Estimates 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.

³Includes all other races not shown separately, unknown education level, and unknown disability status.

⁴The 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- and multiple-race categories shown follow 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. Before 1999, data were tabulated with four racial groups according to the 1977 standards, and the Asian only category included Native Hawaiian or Other Pacific Islander. Estimates for single-race categories before 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 are treated as missing, and then race is imputed if these were the only race responses. Almost all persons with a race response of other race are of Hispanic origin. See Appendix II, Hispanic origin; Race.

⁵Estimates 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. 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.

⁶GED is high school equivalency diploma. See Appendix II, Education.

⁷Percent of poverty level is based on family income and family size and composition using U.S. Census Bureau poverty thresholds. Missing family income data are imputed for 1997 and beyond. See Appendix II, Family income; Poverty; Table VII.

⁸Functional limitation is defined by the reported level of difficulty in six domains of functioning: seeing (even if wearing glasses), hearing (even if wearing hearing aids), mobility (walking or climbing stairs), communication (understanding or being understood by others), cognition (remembering or concentrating), and self-care (such as washing all over or dressing). Respondents with answers to one or more of the six questions are included in one of three mutually exclusive categories. Adults who respond "a lot of difficulty" or "cannot do at all/unable to do" to at least one question are classified in the "a lot of difficulty or cannot do at all" category. Of the remaining respondents, adults who respond "some difficulty" to at least one question are classified in the "some difficulty" category, and adults who respond "no difficulty" to all questions are classified in the "no difficulty" category. Adults who respond "don't know" or "refused" to all six questions are excluded. During 2010–2018, 1%–8% of respondents were missing data and excluded. See Appendix II, Functional limitation.

⁹MSA is metropolitan statistical area. Starting with 2016 data, MSA status is determined using 2010 Census data and the 2010 standards for defining MSAs. For more information, including the definition applied before 2016, see Appendix II, Metropolitan statistical area (MSA).

NOTE: Standard errors and data for additional years are available in the Excel spreadsheet version of this table on the *Health, United States* website at: <https://www.cdc.gov/nchs/hus/index.htm>.

SOURCE: NCHS, National Health Interview Survey, Family Core and Sample Adult questionnaires. Data for level of difficulty are from the 2010 Quality of Life, 2011–2017 Functioning and Disability, and 2018 Sample Adult questionnaires. See Appendix I, National Health Interview Survey (NHIS).