



Published in final edited form as:

*J Phys Act Health*. ; 12(0 1): S3–10. doi:10.1123/jpah.2013-0521.

## U.S. Adults' Participation in Specific Activities: Behavioral Risk Factor Surveillance System—2011

Kathleen B. Watson, Ginny M. Frederick, Carmen D. Harris, Susan A. Carlson, and Janet E. Fulton

Physical Activity and Health Branch, Division of Nutrition, Physical Activity, and Obesity, Centers for Disease Control and Prevention, Atlanta, GA.

Kathleen B. Watson: iyr4@cdc.gov

### Abstract

**Background**—There is little information on national estimates for participation in types of aerobic activities among U.S. adults. Current estimates are important to develop appropriate and effective interventions to promote physical activity and interpret bias for some activities measured with devices.

**Methods**—The percentage of adults participating in specific aerobic activities was estimated overall and by demographic subgroups. The 2011 Behavioral Risk Factor Surveillance System respondents (N = 446,216) reported up to 2 aerobic activities they spent the most time doing during the past month.

**Results**—Overall, walking (47%) was the most common activity reported and was reported more by women (54%) than men (41%). Participation in most activities declined with increasing age ( $P < .006$ ). There were a number of differences in participation between race/ethnic subgroups. Participation increased with more education ( $P$  for trend  $< 0.006$ ) for all activities. Participation in most activities was different ( $P < .002$ ) across BMI subgroups.

**Conclusions**—Walking is the most common activity, overall and among most subgroups. Other activity profiles differ by demographic subgroup. Physical activity promotion strategies that focus on identifying and addressing personal and environmental barriers and understanding demographic subgroup differences could lead to more tailored interventions and public health programs.

### Keywords

physical activity; types of activities; public health

---

Regular physical activity helps prevent early death and chronic diseases such as coronary heart disease, stroke, type 2 diabetes, and some types of cancer.<sup>1,2</sup> Currently, more than half of U.S. adults (51%) do not meet federal guidelines for aerobic physical activity<sup>3</sup> and, thus, increasing physical activity is a public health priority.

To meet current federal aerobic activity guidelines, adults can participate in a variety of different types of aerobic physical activities. Several large studies have reported U.S. adult participation in various types of aerobic physical activities.<sup>4–14</sup> These studies report variations in activities by several demographic characteristics (eg, sex and age). Most of these studies assessed differences in participation patterns by age, revealing that younger adults often participate in activities of vigorous intensity, while older adults participate in activities of moderate intensity.<sup>4–14</sup> Several researchers analyzed participation by sex and found that men typically report running, weight lifting, golf and other outdoor activities, whereas women report aerobics, gardening, and household activities most commonly.<sup>6,9,11–14</sup> However, there is little information on national estimates of participation in various types of aerobic physical activities using data collected since the release of the *2008 Physical Activity Guidelines for Americans*.<sup>15</sup> Furthermore, little is known about differences in participation in various types of aerobic physical activities across demographic subgroups.

Current estimates of participation in specific types of physical activities are important in developing appropriate and effective interventions to promote physical activity.<sup>8,16</sup> By knowing which activities to promote, interventions can be tailored to specific populations. For example, if gardening is a popular activity among older adults, an intervention targeting this subpopulation would likely be effective if it included gardening activities. Information on types of aerobic activities is also useful in interpreting bias or for adjustment of activities that are not accurately captured with waist-mounted accelerometers, (eg, swimming or cycling).<sup>17</sup> Finally, the information may also be useful for planning purposes. For example, city planners may use the information when making decisions regarding the allocation of resources for community centers and parks. Therefore, the purpose of this study was to describe current participation in specific physical activities performed by U.S. adults.

## Methods

The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based, random-digit-dialed telephone survey of the noninstitutionalized U.S. civilian population aged 18 years. Response rates (the number of respondents who completed the survey as a proportion of all eligible and likely eligible persons) were calculated using standards set by the American Association of Public Opinion Research Response Rate Formula #4 ([http://www.aapor.org/AAPORKentico/AAPOR\\_Main/media/MainSiteFiles/Standard\\_Definitions\\_07\\_08\\_Final.pdf](http://www.aapor.org/AAPORKentico/AAPOR_Main/media/MainSiteFiles/Standard_Definitions_07_08_Final.pdf)). The median survey response rate for combined landline and cellphone respondents for all states, the District of Columbia, and territories was 49.86%, and ranged from 33.77% to 64.14% ([http://www.cdc.gov/brfss/pdf/2011\\_summary\\_data\\_quality\\_report.pdf](http://www.cdc.gov/brfss/pdf/2011_summary_data_quality_report.pdf)). We did not need institutional review board approval since respondents were not identifiable.

## Demographic Characteristics

The demographic characteristics reported in this study included sex, age groups (18–29, 30–44, 45–54, 55–64, 65–74, 75 years), race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, other race), education level (less than high school graduate, high school

graduate, some college, college graduate), and body mass index (BMI) categories. BMI was calculated from self-reported height (m) and weight (kg) and was classified into 3 categories: under- or normal-weight (BMI < 25 kg/m<sup>2</sup>), overweight (BMI 25.0–29.9 kg/m<sup>2</sup>), and obese (BMI ≥ 30.0 kg/m<sup>2</sup>).<sup>18</sup>

### Physical Activity

The 2011 BRFSS physical activity core section contained 8 questions. Respondents were first asked whether they participated in any physical activities, other than for their regular job, within the past month. If yes, they were asked to report up to 2 types of physical activity they spent the most time doing during the past month, how many times per week they did each activity, and how long, on average, they participated each time. The type of activity was identified from a list of 69 activities which primarily use aerobic energy-producing processes (aerobic).<sup>2</sup> To facilitate the presentation of activities, and similar to previous research,<sup>14</sup> some activities with low participation were collapsed. For example, handball, racquetball, and squash were grouped together and other sports included badminton, boxing, flying disc games, hockey, horseback riding, inline skating, lacrosse, mountain climbing, paddleball, rock climbing, rope skipping, rugby, skateboarding, and table tennis.<sup>14</sup> The 4 activities which were more anaerobic in nature (Pilates, tai chi, weight lifting, and yoga) did not contribute toward meeting the aerobic component of current federal guidelines so participation in those activities was not included in this study.

For the current study, the percentage of adults participating in specific activities was calculated from responses to the questions asking which types of physical activity were performed. The denominator included adults who reported no activity, 1 activity, or 2 activities. To facilitate comparisons across demographic subgroups and small percentages for some activities (eg, < 1% for hiking/backpacking), the specific types of activities were further categorized into major activity types according to classifications from the Compendium of Physical Activities.<sup>19</sup> For example, walking consisted of general walking, hiking, and backpacking.

### Statistical Analysis

We estimated the percentages and corresponding standard errors of adults participating in the specific types of activities for the overall sample and by the following demographic characteristics: age group, race/ethnicity, education level, and BMI category. Because there is empirical evidence that men and women participate in different activities,<sup>9,12–14</sup> all analyses were stratified by sex. Orthogonal polynomial contrasts and pairwise *t*-tests were used to identify significant linear and quadratic trends and differences by demographic subgroups. Because the percentage of adults classified as “other race” was small and included a variety of racial/ethnic groups, this category was excluded when testing for differences by race/ethnicity. The Bonferroni method was used to control for inflated error due to multiple testing. The level of significance was calculated as 0.05 divided by the number of tests performed for each demographic characteristic. The significance level for differences between sexes for the comprehensive set of activities was 0.001 (= 0.05/34 activities). The significance level for global effects (Race/Ethnicity, BMI) or trend tests (Age, Education) was 0.006 (= 0.05/8 major activity categories per sex). For significant

global effects, additional pairwise comparisons were warranted. The significance level for Race/Ethnicity and BMI pairwise differences was 0.002 (= 0.006 global effect/ 3 pairwise comparisons). Estimates for Race/Ethnicity, Education, and BMI were age-adjusted to the projected 2000 U.S. standard population using 5 age groups: 18–24, 25–34, 35–44, 45–64, and 65. SUDAAN, version 9.2 (Research Triangle Institute, Research Triangle Park, NC) was used for all analyses to account for stratification, clustering, and weighting used in the complex survey design.

## Results

### Study Sample

Data for the 2011 BRFSS survey were collected from 506,467 respondents and reported by the 50 states, the District of Columbia, Guam, and Puerto Rico. The analytic sample included 446,216 adults; 60,251 adults were excluded because of missing physical activity data ( $n = 31,960$ ) or missing demographic data ( $n = 28,291$ ). A majority of the adults were non-Hispanic white, were 30 to 44 years of age, and did not have a college degree (Table 1).

Overall, walking was the most common nonoccupational physical activity reported by U.S. adults (47%). Walking was followed by running/jogging (13%), lawn and garden activities (10%), sports (9%), conditioning exercises (9%), bicycling (5%), and dancing/aerobics (4%) (Table 2).

### Differences by Sex

The percentage of adults participating in most activities was significantly different by sex ( $P < .001$ ). Although walking and running/jogging were the 2 most frequently reported activities by sex, fewer men (41%) reported walking than women (54%), and fewer women (10%) reported running/jogging than men (17%). Even when limited to adults who reported at least 1 activity ( $n = 120,567$ ), fewer men (52%) reported walking than women (74%), and fewer women (14%) reported running/jogging than men (22%). Other differences by sex included fewer women reporting participating in sports (4%) compared with men (14%), and more women reporting participating in dancing/aerobics (7%) compared with men (2%).

### Differences by Age

Walking remained the most common activity among all sex- and age-specific subgroups, except for 18- to 29-year-old men (Table 3). Participation in most activities, except walking and lawn and garden activities, significantly declined with increasing age for men and women ( $P < 0.006$ ) (Table 3). Participation in walking initially increased with age but declined with age for men aged 75 years or older and women aged 65 years or older. The percentages of adults participating in lawn and garden activities increased sharply from those of 18- to 29-year-old adults (men: 2%, women: 3%) to those of 65- to 74-year-old adults (men: 16%, women: 17%). For adults aged 75 years or older, participation in lawn and garden activities remained stable among men but declined among women (13%).

### Differences by Race/Ethnicity

Among both sexes, there were a number of differences in participation by race/ethnicity groups (Table 4). Although walking remained the most common activity for sex- and race/ethnicity-specific subgroups, the percentage of adults who reported walking was higher for non-Hispanic white men (43%) and women (56%) than for non-Hispanic black men (39%) and women (51%) or for Hispanic men (38%) and women (49%). Although running/jogging was not different between race/ethnicity groups for men, running/jogging was higher in non-Hispanic white (12%) and Hispanic (11%) women than in non-Hispanic black women (8%). Participation in sports was not different among men, however, sports was higher among non-Hispanic white women (5%) than non-Hispanic black (3%) and Hispanic (3%) women. The percentage of adults who reported lawn and garden activities was significantly different across all race/ethnicity groups. Percentages were highest among non-Hispanic white men (11%) and women (11%), followed by Hispanic men (8%) and women (6%), and then by non-Hispanic black men (6%) and women (4%).

### Differences by Education

Walking remained the most common activity for sex- and education level-specific subgroups (Figure 1). The percentage of adults participating in specific activities by education level showed positive trends ( $P < 0.006$ ). Both men and women with higher education levels reported greater participation in specific activities than men and women with lower education levels.

### Differences by BMI

Walking remained the most common activity for sex- and BMI-specific subgroups (Figure 2). There were significant ( $P < 0.002$ ) differences by BMI category for men and women; however, the patterns of participation were not consistent across the sexes. Participation in running/jogging significantly decreased from under- or normal-weight to overweight and obese adults of both sexes. Conversely, walking increased for overweight and obese men. For women, walking increased from under- or normal-weight to overweight; however, participation in walking was lowest among obese women.

## Discussion

We found that walking (47%), followed by running/jogging (13%), garden and lawn activities (10%), sports (9%), conditioning exercises (9%), bicycling (5%), and dancing/aerobics (4%) were the most commonly reported nonoccupational physical activities among U.S. adults. Furthermore, walking remained the most common activity for nearly all demographic subgroups. There were, however, differences in participation in specific types of activities by demographic subgroups. For example, walking was nearly stable across most age groups for women; however, walking was twice as prevalent among older adult men (52% for 65- to 74-year-olds) than among younger men aged 18 to 29 years (27%). Participation in lawn and garden activities was nearly twice as prevalent in non-Hispanic white compared with non-Hispanic black or Hispanic adults.

Our findings are generally consistent with findings from other studies that examined participation in specific activities by sex,<sup>13,14</sup> age group,<sup>13,14</sup> race/ethnicity,<sup>11</sup> education,<sup>12</sup> and BMI category<sup>7</sup> subgroups. Our study found that, although walking and running/jogging were the most commonly reported activities among both men and women, more women (54%) reported walking than did men (41%) and more men (17%) reported running/jogging than did women (10%). For age and BMI subgroup differences, our study showed participation in most activities declined with increasing age and BMI for both sexes; the exceptions were walking and lawn and garden activities. We found some differences in participation in most activities by race/ethnicity. Overall, higher participation rates in all activities were associated with higher levels of education.

Our findings showed slight inconsistencies with a study which examined participation in specific activities by education.<sup>12</sup> In a sample of adults trying to lose weight, more men with less than a high school education reported walking compared with men with at least a high school education.<sup>12</sup> This inconsistency may be due to differences in activity profiles among adults who are trying to lose weight compared with adults in our sample.

The findings in this report are subject to at least 3 limitations. First, BRFSS data are self-reported and might be overestimated or underestimated because of social-desirability bias, recall limitations, low response rates, the extent in which instructions are followed, how individuals perceive or understand terms (eg, physical activity or leisure time), and how they interpret the questions.<sup>20</sup> However, the only feasible way to measure specific activities in a national sample is through a self-report questionnaire. Second, the median combined landline and cellular telephone response rate was 49.9%, and such low response rates can result in response bias; however, new weighting and survey methodology help to adjust for nonresponse, undercoverage, and noncoverage issues.<sup>21</sup> Finally, the percentage of adults participating in specific activities may be underestimated because respondents were given the opportunity to report, at most, the 2 activities they performed most frequently; however, in another national survey, when given the opportunity to report all types of physical activities performed, 81% of adults report 2 or fewer activities,<sup>22</sup> so underestimation would likely be small.

## Conclusions

Understanding adult participation in specific types of activities may help guide public health physical activity interventions, programming efforts, and strategies to increase physical activity. Public health practitioners who tailor strategies to specific subpopulations may want to consider the specific types of activities in which the subpopulations engage to achieve better results. For example, programs aimed at increasing physical activity in young men aged 18 to 29 years may want to focus on running/jogging, as it was the most common activity among that specific subpopulation.

The current findings provide information on the types of activities performed by U.S. adults, overall and by demographic subgroups, which can be used for programming and planning efforts to increase physical activity. Walking remains the most commonly reported activity overall and for most demographic subgroups. Except for walking, specific activity profiles



are different among some demographic subgroups. Strategies to promote physical activity overall, as well as specific types of activities, may need to identify and address personal and environmental barriers and to understand demographic subgroup differences to better tailor interventions and public health programs. Future work may want to compare the activity patterns of those adults who do and who do not meet federal physical activity guidelines.

## Acknowledgments

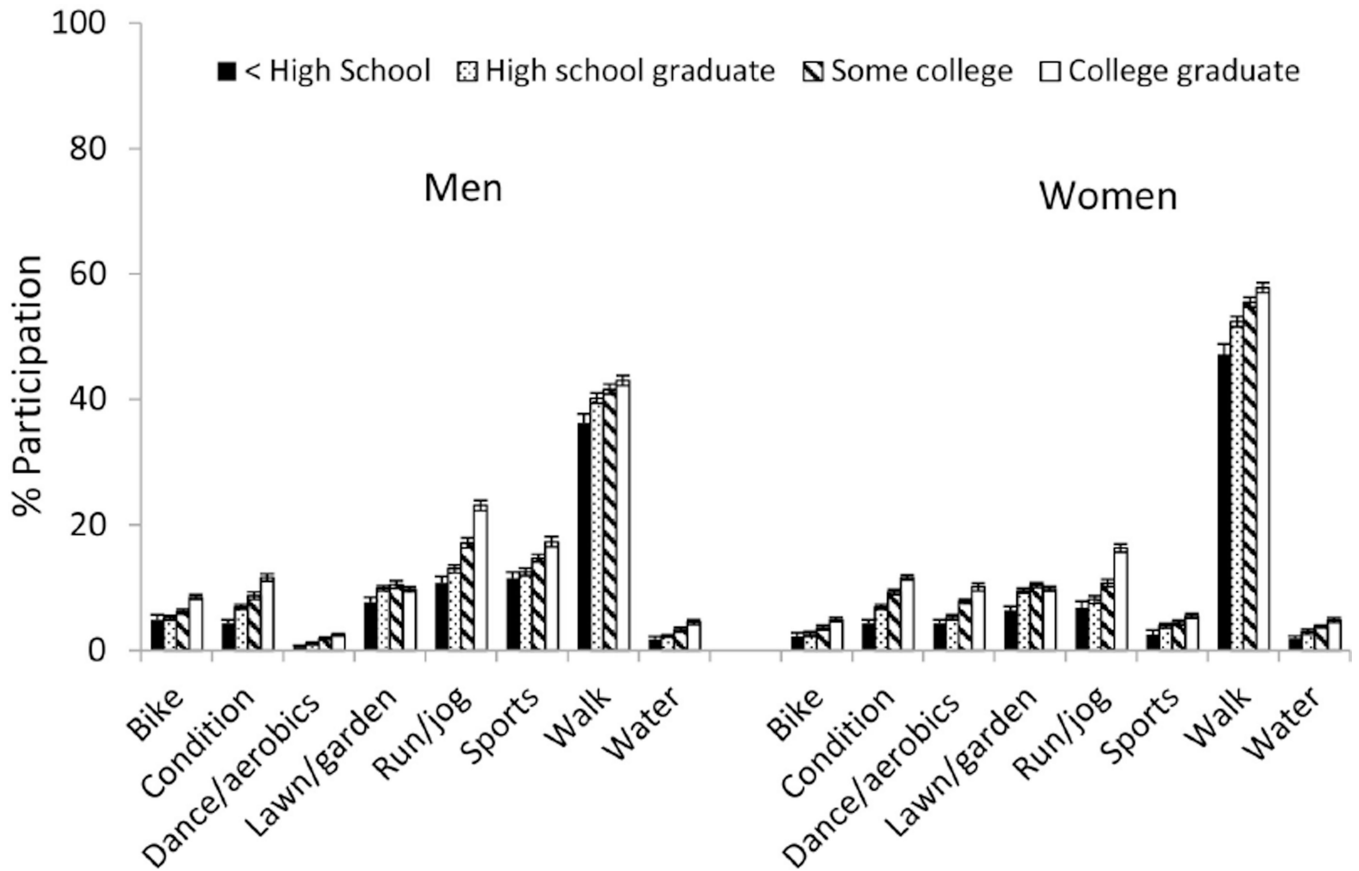
The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

## References

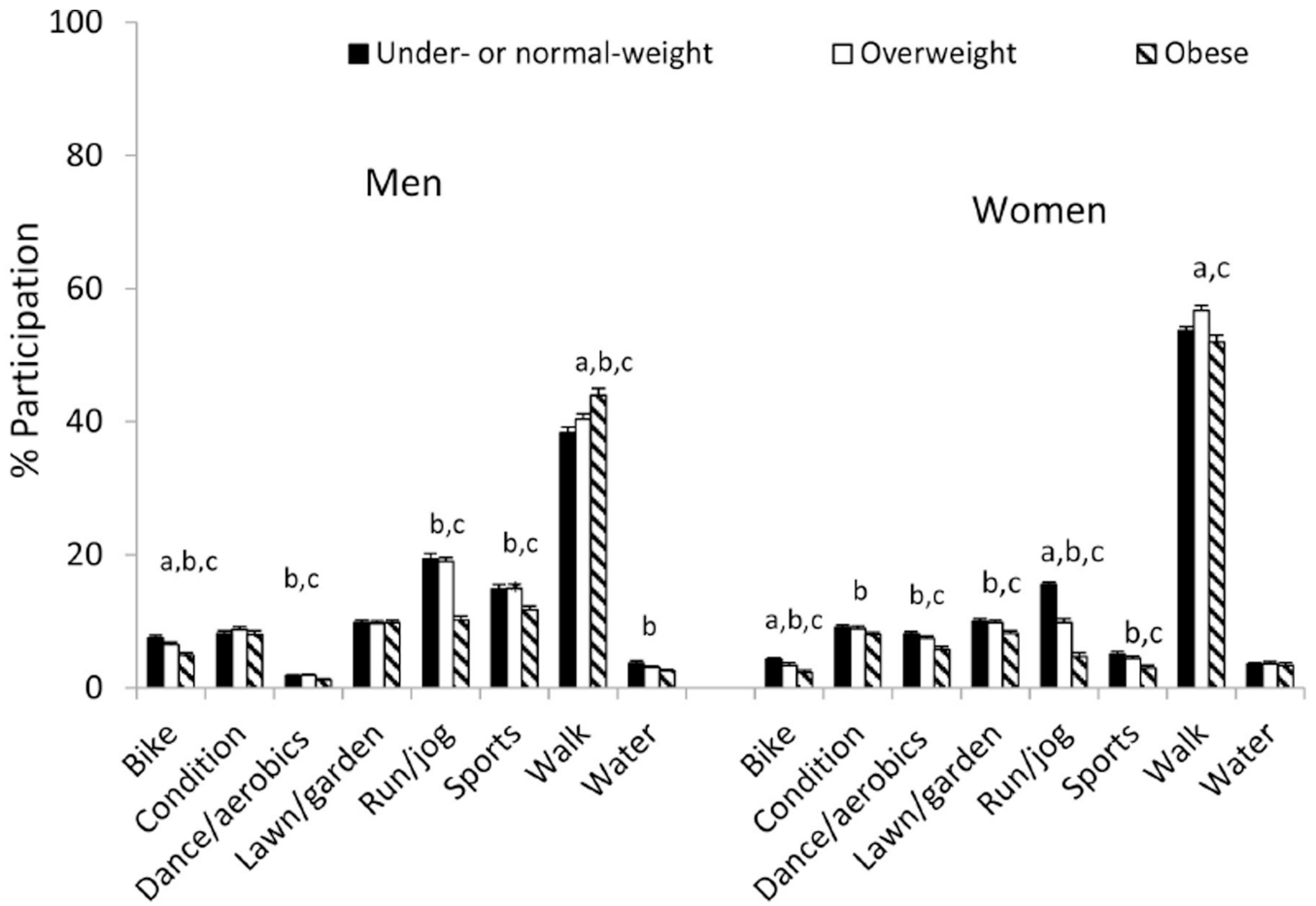
1. Ballard-Barbash R, Friedenreich CM, Courneya KS, Siddiqi SM, McTiernan A, Alfano CM. Physical activity, biomarkers, and disease outcomes in cancer survivors: a systematic review. *J Natl Cancer Inst.* 2012; 104(11):815–840. doi:10.1093/jnci/djs207. [PubMed: 22570317]
2. U.S. Department of Health and Human Services. Physical Activity Guidelines Advisory Committee Report 2008. Washington, DC: US Department of Health and Human Services; 2008.
3. Schiller, JS.; Lucas, JW.; Peregoy, JA. Summary health statistics for U.S. adults: National Health Interview Survey, 2011. National Center for Health Statistics; 2012.
4. Caspersen CJ, Bloemberg BP, Saris WH, Merritt RK, Kromhout D. The prevalence of selected physical activities and their relation with coronary heart disease risk factors in elderly men: the Zutphen Study, 1985. *Am J Epidemiol.* 1991; 133(11):1078–1092. [PubMed: 2035512]
5. Blanchard CM, Cokkinides V, Courneya KS, Nehl EJ, Stein K, Baker F. A comparison of physical activity of posttreatment breast cancer survivors and noncancer controls. *Behav Med.* 2003; 28(4): 140–149. doi:10.1080/08964280309596052. [PubMed: 14663921]
6. Humphreys BR, Ruseski JE. Participation in physical activity and government spending on parks and recreation. *Contemp Econ Policy.* 2007; 25(4):538–552. doi:10.1111/j.1465-7287.2007.00079.x.
7. Littman AJ, Kristal AR, White E. Effects of physical activity intensity, frequency, and activity type on 10-y weight change in middle-aged men and women. *Int J Obes.* 2005; 29(5):524–533.
8. Ham SA, Kruger J, Tudor-Locke C. Participation by US adults in sports, exercise, and recreational physical activities. *J Phys Act Health.* 2009; 6(1):6–14. [PubMed: 19211953]
9. Centers for Disease Control and Prevention. Prevalence of leisure-time physical activity among overweight adults—United States, 1998. *MMWR Morb Mortal Wkly Rep.* 2000; 49(15):326–330. [PubMed: 10858011]
10. Spees CK, Scott JM, Taylor CA. Differences in amounts and types of physical activity by obesity status in US adults. *Am J Health Behav.* 2012; 36(1):56–65. doi:10.5993/AJHB.36.1.6. [PubMed: 22251783]
11. Crespo CJ, Keteyian SJ, Heath GW, Sempos CT. Leisure-time physical activity among US adults. Results from the Third National Health and Nutrition Examination Survey. *Arch Intern Med.* 1996; 156(1):93–98. doi:10.1001/archinte.1996.00440010113015. [PubMed: 8526703]
12. DiPietro L, Williamson DF, Caspersen CJ, Eaker E. The descriptive epidemiology of selected physical activities and body weight among adults trying to lose weight: the Behavioral Risk Factor Surveillance System survey, 1989. *Int J Obes Relat Metab Disord.* 1993; 17(2):69–76. [PubMed: 8384167]
13. Hesser JE, Kim H. Preferred types of physical activity among Rhode Island adults. *Med Health R I.* 1997; 80(9):307–308. [PubMed: 9327665]
14. U.S. Department of Health and Human Services. Physical activity and health: a report of the Surgeon General. Atlanta, GA: U.S. Dept. of Health and Human Services, Centers for Disease Control and Prevention; 1996.
15. U.S. Department of Health and Human Services. 2008 Physical Activity Guidelines for Americans. Washington, DC: U.S. Dept. of Health and Human Services; 2008.

16. Centers for Disease Control and Prevention. Adult participation in aerobic and muscle-strengthening physical activities—United States, 2011. *MMWR Morb Mortal Wkly Rep.* 2013; 62(17):326–330. [PubMed: 23636025]
17. Matthews CE. Calibration of accelerometer output for adults. *Med Sci Sports Exerc.* 2005; 37(11):S512–S522. doi:10.1249/01.mss.0000185659.11982.3d. [PubMed: 16294114]
18. Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report. Bethesda, MD: National Heart, Lung, and Blood Institute; 1998. NHLBI Obesity Education Initiative Expert Panel on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults.
19. Ainsworth BE, Haskell WL, Leon AS, et al. Compendium of physical activities: classification of energy costs of human physical activities. *Med Sci Sports Exerc.* 1993; 25(1):71–80. doi: 10.1249/00005768-199301000-00011. [PubMed: 8292105]
20. Sallis JF, Saelens BE. Assessment of physical activity by self-report: status, limitations, and future directions. *Res Q Exerc Sport.* 2000; 71 Suppl(2):S1–S14. doi:10.1080/02701367.2000.11082780. [PubMed: 10925819]
21. Centers for Disease Control and Prevention. Methodologic changes in the Behavioral Risk Factor Surveillance System in 2011 and potential effects on prevalence estimates. *MMWR Morb Mortal Wkly Rep.* 2012; 61(22):410–413. [PubMed: 22672976]
22. Densmore D, Fulton JE, Carlson SA. Walking: the MVP of aerobic activities among US adults, findings from NHANES 1999–2006. *Med Sci Sports Exerc.* 2010; 42 Supplement 1(5):607. doi: 10.1249/01-MSS.0000385520.97089.4f.





**Figure 1.** Age-adjusted percentage (and 95% confidence intervals) of adults participating in specific activities by education level and sex—Behavioral Risk Factor Surveillance System, 2011. All linear trends are significant ( $P < 0.006$ ); quadratic trends are significant ( $P < 0.006$ ) for men’s bicycling, women’s running, and women’s lawn and garden. *Note.* All estimates and standard estimates are weighted according to BRFSS sampling methodology and age adjusted to the projected 2000 U.S. standard population using 5 age groups: 18–24, 25–34, 35–44, 45–64, and 65.



**Figure 2.** Age-adjusted percentage of adults (and 95% confidence intervals) participating in specific activities by body mass index categories and sex—Behavioral Risk Factor Surveillance System, 2011. Significant ( $P < 0.002$ ) difference between under- or normal-weight and overweight (a), under- or normal-weight and obese (b), and overweight and obese (c). *Note:* All estimates and standard estimates are weighted according to BRFSS sampling methodology and age adjusted to the projected 2000 U.S. standard population using 5 age groups: 18–24, 25–34, 35–44, 45–64, and 65

**Table 1**  
 Distribution of Selected Participant Characteristics Overall and by Sex—BRFSS, 2011

Characteristic	Total			Men			Women		
	n <sup>a</sup>	% <sup>b</sup> (SE)	n <sup>a</sup>	% <sup>b</sup> (SE)	n <sup>a</sup>	% <sup>b</sup> (SE)	n <sup>a</sup>	% <sup>b</sup> (SE)	
Age group (yr)									
18–29	38,336	20.8 (0.2)	18,405	22.5 (0.2)	19,931	19.2 (0.2)			
30–44	81,170	26.6 (0.1)	33,978	27.2 (0.2)	47,192	26.0 (0.2)			
45–54	82,315	19.2 (0.1)	34,103	19.3 (0.2)	48,212	19.1 (0.2)			
55–64	102,143	15.7 (0.1)	42,071	15.6 (0.1)	60,072	15.7 (0.1)			
65–74	77,867	9.7 (0.1)	30,769	9.1 (0.1)	47,098	10.2 (0.1)			
75	64,385	8.1 (0.1)	21,466	6.3 (0.1)	42,919	9.8 (0.1)			
Race/ethnicity									
White, non-Hispanic	351,588	67.3 (0.2)	143,980	66.2 (0.2)	207,608	68.3 (0.2)			
Black, Non-Hispanic	35,223	11.0 (0.1)	11,660	10.6 (0.2)	23,563	11.4 (0.1)			
Hispanic	32,916	14.6 (0.1)	13,414	15.6 (0.2)	19,502	13.7 (0.2)			
Other <sup>c</sup>	26,489	7.1 (0.1)	11,738	7.7 (0.1)	14,751	6.6 (0.1)			
Education level									
< High school graduate	38,621	14.6 (0.1)	15,585	15.2 (0.2)	23,036	13.9 (0.2)			
High school graduate	130,522	29.0 (0.1)	52,075	29.9 (0.2)	78,447	28.0 (0.2)			
Some college	121,092	30.4 (0.1)	45,735	28.8 (0.2)	75,357	31.9 (0.2)			
College graduate	155,981	26.1 (0.1)	67,397	26.0 (0.2)	88,584	26.2 (0.2)			
BMI category <sup>d</sup>									
Under- or normal-weight	159,630	36.7 (0.2)	49,895	30.2 (0.2)	109,735	43.4 (0.2)			
Overweight	161,783	35.8 (0.2)	79,398	42.0 (0.2)	82,385	29.5 (0.2)			
Obese	124,803	27.5 (0.1)	51,499	27.8 (0.2)	73,304	27.2 (0.2)			

*Note.* Of the 506,467 participants who responded to the 2011 Behavioral Risk Factor Surveillance System survey, 60,251 participants were excluded because of missing physical activity data (n = 31,960) or missing demographic data (n = 28,291). The final analytic sample included data from 446,216 participants (50.1% men and 49.9% women).

Abbreviations: BMI, body mass index; BRFSS, Behavioral Risk Factor Surveillance System; SE, standard error.

<sup>a</sup> Unweighted sample size.

<sup>b</sup> All estimates and standard estimates are weighted according to BRFSS sampling methodology; some percentages do not total to 100.0% due to rounding errors.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

<sup>c</sup> Other race/ethnicity includes the following: Asian, Native Hawaiian or other Pacific Islander, American Indian, Alaska Native, multiracial, and other, specified.

<sup>d</sup> Under- or normal-weight, overweight, and obese categories are based on BMI [weight (kg) / height (m<sup>2</sup>): under- or normal-weight = < 25.0; overweight = 25.0–29.9; and obese = 30.0.

**Table 2**

Percentage of Adults Participating in Specific Activities by Sex—BRFSS, 2011

Activity	Total	Men	Women
	% (SE)	% (SE)	% (SE)
Bicycling	4.8 (0.1)	6.3 (0.1)	3.3 (0.1)
Conditioning exercise <sup>a</sup>	8.5 (0.1)	8.4 (0.1)	8.5 (0.1)
Active gaming	0.4 (0.0)	0.2 (0.0)	0.6 (0.0)
Other conditioning exercises <sup>b</sup>	5.0 (0.1)	5.4 (0.1)	4.5 (0.1)
Riding an exercise bicycle	2.5 (0.0)	2.4 (0.1)	2.7 (0.1)
Stair climbing/Stairmaster	0.7 (0.0)	0.5 (0.0)	0.9 (0.0)
Dancing/aerobics	4.4 (0.1)	1.6 (0.1)	7.1 (0.1)
Fishing and hunting	0.4 (0.0)	0.8 (0.0)	0.1 (0.0)
Home repair	0.2 (0.0)	0.3 (0.0)	0.1 (0.0)
Lawn and garden <sup>a</sup>	9.9 (0.1)	9.8 (0.1)	10.0 (0.1)
Gardening	8.0 (0.1)	7.2 (0.1)	8.9 (0.1)
Yard work	2.0 (0.0)	2.8 (0.1)	1.2 (0.0)
Running/jogging	13.4 (0.1)	16.6 (0.2)	10.1 (0.2)
Sports	9.2 (0.1)	14.2 (0.2)	4.2 (0.1)
Basketball	2.1 (0.1)	3.8 (0.1)	0.4 (0.0)
Bowling	0.4 (0.0)	0.4 (0.0)	0.3 (0.0)
Golf	2.5 (0.0)	4.3 (0.1)	0.8 (0.0)
Handball, racquetball, or squash	0.2 (0.0)	0.4 (0.0)	0.1 (0.0)
Other sports <sup>c</sup>	1.4 (0.0)	1.7 (0.1)	1.0 (0.0)
Soccer	1.1 (0.0)	1.8 (0.1)	0.3 (0.0)
Softball/baseball	0.6 (0.0)	1.0 (0.1)	0.3 (0.0)
Tennis	0.7 (0.0)	0.9 (0.0)	0.6 (0.0)
Touch football	0.2 (0.0)	0.4 (0.0)	0.0 (0.0)
Volleyball <sup>a</sup>	0.4 (0.0)	0.4 (0.0)	0.3 (0.0)
Walking	47.4 (0.2)	41.0 (0.2)	53.9 (0.2)
Hiking/backpacking	1.0 (0.0)	1.3 (0.1)	0.7 (0.0)
Walking (general)	46.7 (0.2)	39.9 (0.2)	53.4 (0.2)
Water activities	3.3 (0.1)	3.1 (0.1)	3.5 (0.1)
Other water activities <sup>d</sup>	0.3 (0.0)	0.5 (0.0)	0.2 (0.0)
Swimming for exercise	2.9 (0.1)	2.6 (0.1)	3.3 (0.1)
Waterskiing	0.1 (0.0)	0.1 (0.0)	0.0 (0.0)
Winter activities	0.2 (0.0)	0.3 (0.0)	0.2 (0.0)
Other winter activities <sup>a,e</sup>	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)
Snow skiing	0.2 (0.0)	0.2 (0.0)	0.1 (0.0)

*Note.* All estimates and standard estimates are weighted according to BRFSS sampling methodology. Percentage of adults participating in nonspecified other activities is not included because the activity category could not be identified.

Abbreviations: BRFSS, Behavioral Risk Factor Surveillance System; SE, standard error.

<sup>a</sup> Activities are not significantly different between sexes; all remaining activities are significantly different between sexes at  $P < .001$ , except bowling ( $P = .012$ ) and waterskiing ( $P = .009$ ).

<sup>b</sup> Other conditioning exercises include calisthenics, elliptical machine exercise, rowing machine exercise, and wrestling.

<sup>c</sup> Other sports include badminton, boxing, flying disc games, hockey, horseback riding, inline skating, lacrosse, mountain climbing, paddleball, rock climbing, rope skipping, rugby, skateboarding, and table tennis.

<sup>d</sup> Other water activities include boating, canoeing/rowing in competition, scuba diving, snorkeling, and surfing.

<sup>e</sup> Other winter activities include sledding, tobogganing, and snowshoeing.

**Table 3**  
 Percentage of Adults Participating in Specific Activities by Sex and Age (in Years)—BRFSS, 2011

Activity <sup>a</sup>	18–29	30–44	45–54	55–64	65–74	75+
	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)
<b>Men</b>						
Bicycling	6.1 (0.3)	7.3 (0.3)	7.4 (0.3)	6.2 (0.2)	4.6 (0.3)	2.6 (0.2)
Conditioning exercise	7.7 (0.3)	8.3 (0.3)	8.6 (0.3)	8.4 (0.3)	8.4 (0.3)	9.8 (0.4)
Dancing/aerobics	1.6 (0.2)	1.6 (0.1)	1.6 (0.1)	1.7 (0.1)	1.7 (0.1)	2.0 (0.2)
Lawn and garden	2.9 (0.2)	7.7 (0.3)	11.7 (0.3)	14.0 (0.3)	16.8 (0.4)	16.7 (0.5)
Running/jogging	36.8 (0.6)	19.7 (0.4)	10.1 (0.3)	4.7 (0.2)	2.4 (0.2)	1.1 (0.2)
Sports	23.8 (0.6)	14.7 (0.3)	10.2 (0.3)	9.2 (0.3)	9.8 (0.3)	8.6 (0.3)
Walking	27.4 (0.6)	38.1 (0.5)	45.9 (0.5)	50.3 (0.5)	51.6 (0.6)	47.7 (0.6)
Water activities	3.7 (0.2)	3.3 (0.2)	3.1 (0.2)	2.9 (0.2)	2.4 (0.1)	1.9 (0.2)
<b>Women</b>						
Bicycling	4.6 (0.3)	4.1 (0.2)	3.9 (0.2)	2.7 (0.1)	1.7 (0.1)	0.8 (0.1)
Conditioning exercise	8.8 (0.3)	9.4 (0.2)	9.0 (0.2)	7.7 (0.2)	7.7 (0.2)	7.3 (0.2)
Dancing/aerobics	8.7 (0.4)	8.5 (0.2)	6.6 (0.2)	5.8 (0.2)	5.9 (0.2)	4.7 (0.2)
Lawn and garden	2.4 (0.2)	7.3 (0.2)	12.2 (0.3)	15.1 (0.3)	16.2 (0.3)	12.7 (0.3)
Running/jogging	27.6 (0.6)	13.3 (0.3)	5.2 (0.2)	1.9 (0.1)	0.6 (0.1)	0.3 (0.0)
Sports	7.1 (0.4)	4.1 (0.2)	3.4 (0.1)	3.4 (0.2)	3.3 (0.1)	2.9 (0.2)
Walking	50.3 (0.6)	55.0 (0.4)	58.0 (0.4)	57.6 (0.4)	53.2 (0.4)	44.4 (0.4)
Water activities	4.4 (0.3)	3.6 (0.1)	3.6 (0.2)	3.4 (0.2)	2.8 (0.1)	2.2 (0.1)

Note. All estimates and standard estimates are weighted according to BRFSS sampling methodology. The total percentage of adults participating was less than 1% for fishing and hunting, winter activities, and home repair so these activity categories were excluded.

Abbreviations: BRFSS, Behavioral Risk Factor Surveillance System; SE, standard error.

<sup>a</sup> All activities except bicycling have significant linear and quadratic trends at  $P < 0.006$ .



**Table 4**

Age-Adjusted Percentage of Adults Participating in Specific Activities by Sex and Race/Ethnicity—BRFSS, 2011

Activity	White, non-Hispanic	Black, non-Hispanic	Hispanic
	% (SE)	% (SE)	% (SE)
<b>Men</b>			
Bicycling <sup>a</sup>	6.9 (0.1)	4.6 (0.4)	6.1 (0.4)
Conditioning exercise <sup>a,b,c</sup>	8.6 (0.2)	10.9 (0.5)	6.1 (0.4)
Dancing/aerobics <sup>b,c</sup>	1.6 (0.1)	2.0 (0.2)	1.2 (0.1)
Lawn and garden <sup>a,b,c</sup>	11.0 (0.2)	5.7 (0.4)	7.5 (0.4)
Running/jogging	16.3 (0.2)	16.5 (0.7)	17.1 (0.5)
Sports	13.6 (0.2)	15.3 (0.6)	13.6 (0.5)
Walking <sup>a,b</sup>	42.5 (0.3)	39.0 (0.8)	37.5 (0.7)
Water activities <sup>a,b,c</sup>	3.5 (0.1)	1.0 (0.1)	2.5 (0.2)
<b>Women</b>			
Bicycling <sup>a,b,c</sup>	4.1 (0.1)	1.7 (0.2)	2.6 (0.2)
Conditioning exercise <sup>b,c</sup>	9.2 (0.1)	9.1 (0.4)	6.0 (0.3)
Dancing/aerobics <sup>a</sup>	7.1 (0.1)	8.4 (0.4)	7.1 (0.3)
Lawn and garden <sup>a,b,c</sup>	11.0 (0.1)	3.9 (0.2)	6.2 (0.3)
Running/jogging <sup>a,c</sup>	11.9 (0.2)	8.1 (0.4)	10.8 (0.4)
Sports <sup>a,b</sup>	4.8 (0.1)	2.8 (0.2)	3.1 (0.2)
Walking <sup>a,b</sup>	55.6 (0.3)	50.6 (0.6)	49.1 (0.7)
Water activities <sup>a,b,c</sup>	4.2 (0.1)	1.3 (0.1)	2.3 (0.2)

Abbreviations: BRFSS, Behavioral Risk Factor Surveillance System; SE, standard error.

Note. Significant pairwise differences ( $P < 0.001$ ):

<sup>a</sup>White, non-Hispanic and black, non-Hispanic;

<sup>b</sup>White, non-Hispanic and Hispanic;

<sup>c</sup>Black, non-Hispanic and Hispanic. All estimates and standard estimates are weighted according to BRFSS sampling methodology. The total percentage of adults participating was less than 1% for fishing and hunting, winter activities, and home repair so these activity categories were excluded. Comparisons and percentages of adults participating in activities by other race/ethnicity were excluded from table due to heterogeneity of the other race category. Estimates are age adjusted to the projected 2000 U.S. standard population using 5 age groups: 18–24, 25–34, 35–44, 45–64, and 65.