Published in final edited form as:

Top Stroke Rehabil. 2014 ; 21(3): 246–255. doi:10.1310/tsr2103-246.

Prevalence of Physical Activity and Sedentary Behavior Among Stroke Survivors in the United States

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Abstract

Background—The risk of stroke is greatest among adults who have experienced a previous stroke, transient ischemic attack, or myocardial infarction. Physical activity may reduce the secondary risk of stroke through mediating effects on blood pressure, vasoconstriction, and circulating lipid concentrations; however, little is known about the prevalence of physical activity and sedentary behavior among stroke survivors in the United States.

Methods—Using data from the National Health and Nutrition Examination Survey (NHANES), we describe self-reported and objectively measured physical activity and sedentary behavior among adults with a self-reported history of stroke. We also contrast physical activity among stroke survivors with that of adults without stroke (unexposed) to illustrate expected behavior in the absence of disease.

Results—Fewer participants with stroke met weekly physical activity guidelines as outlined in the 2008 Physical Activity Guidelines for Americans when compared with unexposed participants (17.9% vs 25.0%) according to self-reported data. In addition, participants with stroke reported less moderate (46.1% vs 54.7%) and vigorous (9.1% vs 19.6%) leisure activity compared with unexposed participants. As measured by accelerometer, time since diagnosis was inversely associated with physical activity engagement, and participants with stroke recorded more daily hours of sedentary behavior compared with unexposed participants (10.1 hours vs 8.9 hours).

Conclusion—Findings from this study provide a basis for future work seeking to measure the impact of physical activity on the secondary prevention of stroke by characterizing the prevalence of physical activity and sedentary behavior among stroke survivors in the United States.

Keywords

accelerometer; physical activity; physical activity guidelines; sedentary behavior; stroke

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INTRODUCTION

The prevalence of stroke is approximately 3% in the United States, affecting nearly 6 million people[1]; it is the fourth most common cause of death.[2] Of the 780,000 strokes that occur yearly, nearly one-fourth are recurrent attacks.[3] The risk of stroke is greatest among those who have experienced a previous stroke, transient ischemic attack, or myocardial infarction. Thus, secondary prevention is necessary to reduce disease burden and improve quality of life. The American Heart Association (AHA) and the American Stroke Association (ASA) recognize physical activity as a modifiable risk factor, where increased engagement among stroke survivors is expected to reduce the risk of recurrent stroke. Less is known about the effect of sedentary behavior on stroke, such as extended time sitting, although it is believed to impede recovery. It may also be a barrier to achieving recommended amounts of physical activity as outlined in the AHA/ASA guidelines for the secondary prevention of stroke.[4]

A recently published meta-analysis affirmed the benefit of physical activity for stroke risk reduction in general populations with no history of the disease,[5] and several studies have assessed the effect of physical activity on cardiovascular disease risk factors among patients with stroke. However, the literature is void of studies that measure the effect of physical activity on the risk of recurrent stroke in populations of stroke survivors. The AHA/ASA recommends that nondisabled stroke survivors who are capable of physical activity engagement perform “at least 30 minutes of moderate intensity physical exercise, typically defined as vigorous activity sufficient to break a sweat or noticeably raise heart rate, 1 to 3 times a week.” (page 3) [4]

In this study, we sought to examine the prevalence of physical activity and sedentary behavior among stroke survivors in the United States. Using data from the National Health and Nutrition Examination Survey (NHANES), we describe self-reported and objectively measured physical activity and sedentary behavior among adults in the United States with a self-reported history of stroke. We also contrast physical activity among stroke survivors with that of individuals without stroke to illustrate expected behavior in the absence of disease. Findings from this study may have implications for future work seeking to quantify secondary stroke risk reduction by means of physical activity engagement.

METHODS

Data sources

The NHANES is used to assess nutrition and health in the US population through in-person interviews and physical examinations. Study participants are identified through a multistage probability sampling design and represent the US civilian noninstitutionalized population.[6] Using data collected through the NHANES medical conditions questionnaire, physical activity questionnaire, and physical activity monitor examination (eg, accelerometer), we assessed the prevalence of physical activity and sedentary behavior among participants with a self-reported history of stroke. Questionnaires were administered during in-home interviews or at a mobile examination center. Because the most recently available accelerometry data were collected from 2003 to 2006, we limited our analysis to this period.

Study sample

The medical conditions questionnaire was used to capture self-reported data on history of stroke. Participants aged 20 years and older were asked whether they had been told by a physician that they had had a stroke and the age at which they were first told. Among 10,020 participants, 405 reported a history of stroke and were considered for inclusion in our study. We excluded 101 participants who were nonambulatory and therefore not selected to complete the physical activity monitor examination. We also excluded 42 participants who did not provide 3 or more days of accelerometer wear at 10 or more hours per day. Thus, a total of 262 participants with a history of stroke were included in our study.

We selected an "unexposed" group that had not experienced a stroke to compare physical activity and sedentary behavior between those "exposed" and "unexposed" to the disease. Of the 10,020 participants aged 20 years or older, 9,598 reported never having been told by a physician that they had had a stroke. We excluded 2,894 who did not provide 3 or more days of accelerometer wear at 10 or more hours per day. Of the remaining 6,704, we sampled 2 unexposed study participants for every 1 participant with a history of stroke; participants were frequency-matched by age, race/ethnicity, and sex for a total of 524 persons included in the unexposed group.

Self-reported physical activity and sedentary behavior

Four items on the physical activity questionnaire were used to indicate whether the study participant engaged in physical activity from any of 3 physical activity domains: transportation, household/yard work, and leisure activity. Respondents were prompted to respond with the following options: "yes," "no," or "unable to do." Those participants who responded in the affirmative were asked to report the frequency and duration of physical activities performed in each domain over the 30 days before the date of the interview. Moderate physical activities were defined as "tasks that cause light sweating or a slight to moderate increase in breathing or heart rate" and vigorous activities as those that "cause heavy sweating or large increases in breathing or heart rate." If the participants reported engaging in moderate and/or vigorous physical activity, they were asked to indicate whether they had performed any of 48 specific leisure activities. Metabolic equivalent (MET) values for each of the individual activities were assigned according to values included in the physical activity compendium.[7] A subset of these activities was used to create an "aerobic exercise" category.[8] Details on the variable derivation are available as supplemental tables[9] and are also provided in the appendix of an article by Evenson and Wen,[8] which describes the prevalence of physical activity among pregnant women in the United States.

Additionally, we evaluated whether participants met 2008 Physical Activity Guidelines for Americans of performing 150 minutes per week of moderate-intensity or 75 minutes per week of vigorous-intensity physical activity (or an equivalent combination of the 2) by summing the duration of weekly moderate and vigorous leisure activity minutes reported by the participant.[10] We also assessed whether participants engaged in 30 or more minutes of moderate or vigorous exercise, 1 to 3 times per week, as prescribed by the AHA/ASA. We interpret "exercise" as leisure activity and consider a weekly amount of 30 minutes or more of moderate and/or vigorous leisure activity as meeting AHA/ASA recommendations.

Sedentary behavior was assessed by a questionnaire item that asked the study participant to report daily screen-time exposure for television and/or video. Participants were also asked to evaluate their usual daily activity (eg, mostly sitting) and their overall activity level relative to that of their peers.

Physical activity measured by accelerometry

For the physical activity monitor examination, participants were asked to wear the ActiGraph accelerometer (model AM7164; ActiGraph, Pensacola, FL) on their hip for 7 consecutive days during waking hours, but not during water-based activities. The accelerometer measured 1-minute periods of analog acceleration converted to a digital signal. Nonwear was defined by an interval of at least 90 consecutive minutes of 0 counts/min, with the allowance of 1 or 2 minutes of nonzero counts if no counts were detected during both the 30 minutes upstream and downstream from that interval; any nonzero counts except the allowed short intervals were considered as wear time.[11] Counts in the nonwear period were considered as missing.

The output metric used to assess acceleration was the accelerometer count. Count thresholds or cutpoints were used to characterize activity by intensity as sedentary, light, moderate, or vigorous. We used cutpoints previously applied to NHANES data where vigorous intensity activity was defined as 5,999 or more counts/min, and moderate intensity activity was defined as 2,020 to 5,998 counts/min.[12] We also used 3 cutpoints defined by Matthews et al,[13,14] including a “lower moderate” intensity threshold of 760 counts/min based on studies that incorporate lifestyle activities that may be relevant to older adults; a light activity intensity threshold is defined as 101 to 759 counts/min, and a sedentary activity intensity threshold is defined as 100 counts/min or less.

Other measures

Participants reported sociodemographic information including age, race/ethnicity, sex, and household income. The age variable was top-coded at 85 years to protect the confidentiality of participants. Smoking status was self-reported. Height and weight were objectively measured during the physical examination and were used to calculate the body mass index (BMI), where BMI = weight (kg)/(height (m))^2.

Data analysis

All analyses were conducted using SAS 9.3 (SAS Institute Inc, Cary, NC). Percentages were weighted to the 2000 census using 4-year sample weights to account for the differential probability of selection (National Center Health Statistics, 2004, 2006). Sample weights were adjusted for nonresponse, and poststratification adjustments were applied to match population controls.[10] We compared weighted percentages of self-reported physical activity between the exposed and unexposed groups using chi-square analysis. For self-report and accelerometer-measured physical activity, we used least-squares regression to calculate weighted means and compared the 2 groups using Wald’s F test. Weighted means for accelerometer data were adjusted for wear time and age, except where noted.

RESULTS

The average age at first stroke event was 61 years, and a greater proportion of women reported stroke compared with men (Table 1). One-fifth of participants with stroke reported diagnoses within the past year at the time of interview, and nearly half reported a time lapse of 5 years or greater since the first stroke event. Compared with unexposed participants, participants with stroke had less advanced education, lower household income, and higher BMI and were more likely to be current smokers.

Tables 2 and 3 present the prevalence of self-reported physical activity and sedentary behavior. Compared with the unexposed group, participants with stroke engaged in less physical activity for household work, moderate leisure activity, and vigorous leisure activity. Participants with stroke were also more likely to report inability to perform activities in each of these domains (data not shown). The prevalence of meeting 2008 physical activity guidelines was low for both groups. However, 43.6% of participants with stroke met AHA/ASA physical activity guidelines for secondary stroke prevention. Similar proportions of stroke and unexposed participants engaged in walking (35.6% vs 39.0%; $P = .41$) and water activities (7.3% vs 7.1%; $P = .92$). Participants with stroke were less likely to engage in jogging (0.4% vs 4.7%; $P = .00$) or recreational activities (14.8% vs 24.0%; $P = .02$).

Participants with stroke were more likely to watch TV/video for 4 or more hours per day compared with the unexposed group (Table 2). When asked to assess usual daily activities, a higher proportion of participants with stroke reported “mostly sitting” compared with the unexposed group. Participants with stroke were also more likely to describe themselves as less active than others of the same age compared with the unexposed group.

Weekly hours of transportation and moderate leisure activity did not differ substantially between the stroke and unexposed groups (Table 3). However, participants with stroke completed fewer weekly hours of moderate to vigorous household/yard work activity, vigorous leisure activity, and moderate to vigorous leisure activity. Weekly hours of aerobic exercise did not differ between the 2 groups, although the intensity of aerobic exercise (defined as MET-hours per week) was lower among participants with stroke.

Accelerometry-determined physical activity is presented in Table 4. The number of minutes of vigorous activity per day did not differ substantially between the 2 groups. However, participants with stroke completed fewer daily minutes of moderate to vigorous, moderate, low-moderate, and light activity. In addition, participants with stroke were sedentary a greater number of hours per day compared with the unexposed group.

Figure 1 displays average daily minutes of physical activity among participants with stroke by intensity and time since first stroke event, controlling for age and wear time. Participants diagnosed within 1 year or less before the interview had the greatest volume of moderate to vigorous, lower moderate, and light activity. Time since first stroke diagnosis was inversely associated with physical activity. Conversely, average daily hours of sedentary activity were higher as time since initial stroke event increased (data not shown).

DISCUSSION

In this study we describe the prevalence of physical activity and sedentary behavior among stroke survivors in the United States. We contrasted self-reported and objective measures of physical activity and sedentary behavior between participants with stroke and participants without stroke. Participants with stroke were more likely to report inability to engage in specific domains of physical activity and were generally less likely to meet either set of physical activity recommendations.[4,10] In addition, participants with stroke engaged in more sedentary behavior compared with unexposed participants, and time since first stroke event was inversely associated with physical activity engagement. By characterizing the prevalence of physical activity and sedentary behavior among US stroke survivors, the findings from this study provide a basis for future work seeking to measure the impact of physical activity on the secondary prevention of the disease.

Nearly half of the participants with stroke in this study engaged in 30 minutes or more of weekly moderate to vigorous leisure activity as prescribed by the AHA/ASA,[4] and approximately 18% met physical activity guidelines outlined for the general US population.[10] Yet there is a lack in the literature of evidence-based studies that assess the extent to which physical activity prevents a secondary stroke event, leaving current guideline recommendations to be based largely on expert opinion. In a randomized physical activity intervention among survivors of moderate to moderately severe stroke, those who performed 30 minutes of moderate-intensity activity 3 times per week had greater improvements in blood pressure and reduction of total cholesterol compared with those who performed the same frequency of low-intensity physical activity or standard therapeutic exercise.[15] Such trials may lead to improved physical activity guidelines by demonstrating a link between sufficient physical activity intensity and volume and improved cardiovascular health among those with stroke. It will be important to combine data on physical activity engagement among a population of stroke survivors with prospective data on clinical outcomes for stroke (including mediators of stroke) to establish the effect of physical activity on secondary stroke prevention.[16,17]

Physical activity engagement reduces the primary risk of both classes of stroke (ie, ischemic and hemorrhagic), with the greatest benefits observed for the prevention of ischemic stroke.[18,19] Although stroke classification data were not available through NHANES, it is reasonable to expect that most strokes were ischemic, because approximately 87% of all strokes are of ischemic origin.[20] However, inferring the class and etiology of a possible recurrent stroke is less straightforward, because the classifications for an index and recurrent stroke are often discordant.[21–23] Thus, the benefits gained from purposeful physical activity engagement may vary according to etiologic factors present before and/or after the initial stroke diagnosis. The identification of populations of stroke survivors who would most benefit from targeted physical activity regimens will be key to developing individualized recommendations for secondary prevention of stroke.

The weighted proportions of participants with stroke who reported inability to perform moderate or vigorous leisure activity were 13.9% and 20.1%, respectively; in contrast, only 4.0% and 7.0% of unexposed participants reported inability to perform moderate or vigorous

leisure activity. Prior research has shown that moderate and vigorous physical activity levels decline after stroke, even among patients with a mild form of the disease in which motor disabilities are less frequent and less severe.[24] Although underutilized, stroke rehabilitation care programs have been shown to improve physical functioning.[25–27] Optimal use of these programs followed by organized physical activity plans may allow a greater proportion of survivors to achieve gains beyond physical functioning for improved cardiovascular health and decreased risk of a secondary stroke event.[28,29]

It is important to note that reductions in the risk of a secondary stroke event can be achieved by pharmacologic interventions that reduce blood pressure and circulating lipid concentrations. However, increased physical activity engagement is expected to yield both near- and long-term protective benefits to reduce the risk as well. Thus, lifelong physical activity engagement may be important for survivors in preventing a secondary stroke event.[4] Yet, this study shows a decreasing trend for all intensities of accelerometer-assessed physical activity by time since diagnosis and an increasing trend for sedentary behavior. Though less studied than physical activity, sedentary behavior has been linked to an increased risk of stroke, independent of physical activity engagement.[30] These observations are of particular concern, and avoidance of prolonged periods of sedentary behavior could be beneficial during long-term recovery from stroke because sedentary behavior may act as an independent risk factor for cardiovascular disease, even when controlling for levels of physical activity.[31] As researchers continue to study the impact of physical activity and sedentary behavior on secondary stroke prevention, it will be important to characterize the beneficial effects of activities during the years following initial diagnosis.

The participants with stroke included in our study represent adult stroke survivors in the United States. Because we excluded those who were unable to ambulate and, thus, did not participate in the NHANES physical activity monitor (accelerometer) examination, we overestimated the prevalence of physical activity among a general population of stroke survivors. Those with a history of stroke who wore the accelerometer and were in compliance (n = 262) were more likely to be male and non-Hispanic White compared with those participants who wore the accelerometer but were not in compliance or who did not participate in the physical activity monitor examination (n = 143).

We also relied on self-reported history of stroke, which has been shown to have lower sensitivity and specificity with increasing age.[32] Some subjects may incorrectly report transient ischemic attack or unrelated head trauma as stroke events, and others who have experienced a clinical stroke as detected by MRI may self-report as never having experienced a stroke. Nevertheless, several validation studies affirm the use of self-reported history of stroke in population studies while encouraging researchers to interpret results with caution.[33,34]

In addition, when assessing whether participants met AHA/ASA physical activity recommendations for stroke survivors, we interpret meeting recommendations as performing 30 minutes or more of moderate and/or vigorous leisure activity each week. However, the current guidelines are stated ambiguously in that the authors suggest “at least 30 minutes of moderate-intensity physical exercise, typically defined as vigorous activity sufficient to

break a sweat or noticeably raise heart rate, 1 to 3 times a week (page 3)."[4] Describing physical activity as being simultaneously "moderate" and "vigorous" creates uncertainty as to the specific intensity of activity the authors wish to imply. It is also unclear whether "physical exercise" refers to planned physical activity or whether physical activity of the same intensity and duration from other domains (eg, transportation) is sufficient to yield protective benefits. Despite these limitations, our conservative interpretation of the guidelines serves as the basis for a reasonable assessment of physical activity among ambulatory stroke survivors.

CONCLUSION

In conclusion, this study characterizes the prevalence of physical activity among ambulatory stroke survivors in the United States using self-reported and accelerometer-determined physical activity. Future research should seek to link physical activity measures among stroke survivors to clinical outcomes for stroke, including secondary events and mediators of the disease. In this manner, the impact of physical activity on the secondary prevention of stroke may be fully established so that physicians and physical activity researchers can identify appropriate subpopulations that may be targeted for intervention. Establishing the effect of physical activity on secondary stroke prevention will allow researchers to provide evidence-based physical activity guidelines for stroke survivors that lead to reduced disease burden and extended longevity.

Acknowledgments

This work was supported by the National Institutes of Health (NIH), National Heart, Lung, and Blood Institute grant 1 R21 HL115385.

The authors thank Fang Wen for her help with data management.

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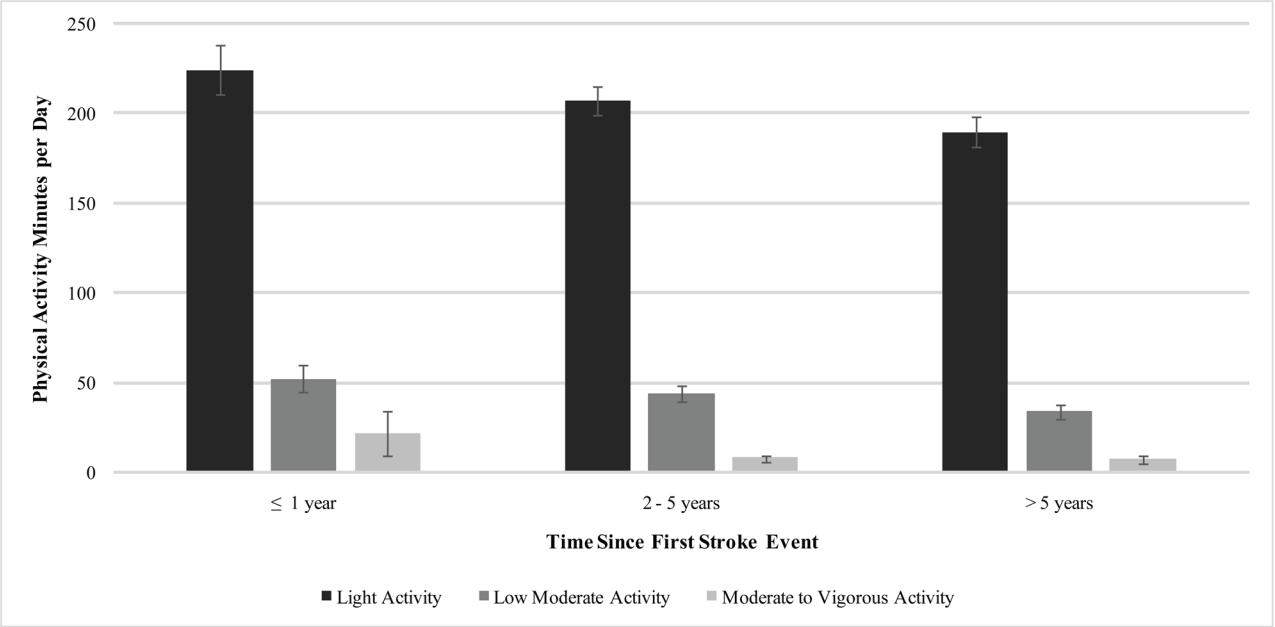

Figure 1.

Daily minutes of accelerometer-determined physical activity stratified by time since first stroke event, NHANES 2003–2006. Data were obtained from the NHANES 2003–2006 physical activity monitor examination. Study participants were ambulatory, wore accelerometers at least 3 days for 10 hours per day over the 7-day study period; were ≥ 20 years old; and reported age at first stroke event (n = 256). Moderate to vigorous, low-moderate, and light intensity thresholds were used according to methods by Troiano et al[12] and Matthews et al.[13,14] We report mean physical activity minutes per day and standard errors, controlling for age and wear time.

Table 1

Weighted percent and standard error of descriptive characteristics among NHANES study participants with a history of stroke compared with a group unexposed to stroke, NHANES 2003–2006[a]

	Stroke group (*n* = 262)			Unexposed group (*n* = 524)		
	n	**WT%**	**SE**	***n***	**WT%**	**SE**
Age, years						
20–59	50	30.9	4.1	100	30.4	2.9
60–69	74	27.7	3.7	148	28.2	3.0
70–79	67	22.0	3.2	134	23.3	2.4
≥ 80	71	19.5	2.5	142	18.2	2.1
Race/ethnicity[b]						
Non-Hispanic White	160	86.6	2.1	320	79.8	2.2
Non-Hispanic Black	56	13.4	2.1	112	11.6	1.5
Other	46			92	8.6	1.4
Gender						
Male	139	42.3	3.7	278	44.2	2.3
Female	123	57.7	3.7	246	55.8	2.3
Education						
Less than high school	105	28.1	3.0	181	22.5	1.9
High school or equivalent	64	29.1	3.4	132	26.7	2.6
More than high school	92	42.8	4.3	211	50.8	2.6
Missing	1					
Household income						
≥ 35K	77	37.9	4.3	220	56.3	2.8
< 35K	173	62.1	4.3	282	43.7	2.8
Missing	12			22		
Smoking						
Never	105	42.6	3.5	228	43.3	2.2
Former	107	33.4	2.8	223	41.9	2.7
Current	50	23.9	3.3	73	14.8	1.9
BMI (kg/m^2)						

	Stroke group (*n* = 262)			Unexposed group (*n* = 524)		
	n	**WT%**	**SE**	***n***	**WT%**	**SE**
< 25	69	24.1	2.7	165	32.9	2.5
25–29.99	93	35.6	4.3	192	34.0	2.5
≥ 30	100	40.3	3.7	167	33.1	2.5
Time since disease occurrence						
≤ 1 year	51	20.9	3.2			
2–5 years	89	32.9	2.9			
> 5 years	116	46.2	3.6			
Missing	6					

Note: BMI = body mass index; NHANES = National Health and Nutrition Examination Survey; SE = standard error; WT% = weighted prevalence.

[a]Missing data and cell counts less than 50 are not included in weighted proportions.

Table 2

Weighted percent and standard error of self-reported physical activities and sedentary behaviors in the past month among participants with a history of stroke compared with a group unexposed to stroke, NHANES 2003–2006

	Stroke group (*n* = 262)		Unexposed group (*n* = 524)		
	WT%	**SE**	**WT%**	**SE**	***P* value[a]**
Physical activity engagement					
Transportation activity	23.4	3.1	22.1	3.0	.75
Household activity	52.7	3.0	66.5	3.3	.00
Moderate leisure activity	46.1	3.9	53.3	2.8	.11
Vigorous leisure activity[b]	9.1	2.3	18.9	2.0	.00
Aerobic exercise	45.5	3.8	53.4	2.4	.05
Meets AHA/ASA 2011 recommendations	43.6	3.7	50.4	3.2	.17
Meets 2008 PAG recommendations	17.9	3.4	27.7	2.7	.05
Sedentary indicators and self-assessment					
TV/video (hours/day)					
< 4	62.2	3.6	70.4	1.5	.03
≥ 4	37.8	3.6	29.6	1.5	
Usual daily activities					.04
Mostly sitting	34.6	3.7	26.1	1.8	
Mostly standing/walking/lifting	65.4	3.7	73.9	1.8	
Activity compared with others of the same age					.00
More active	33.3	3.2	49.1	3.7	
Less active	30.4	3.8	17.1	1.5	
About the same	36.3	3.5	33.8	3.8	

Note: AHA = American Heart Association; ASA = American Stroke Association; NHANES = National Health and Nutrition Examination Survey; PAG = physical activity guidelines: SE = standard error; WT% = weighted prevalence.

[a] Chi-square analysis comparing adults with stroke with those unexposed to stroke or other cardiovascular disease. *P* value is rounded to the hundredth decimal place.

[b] One or more cell counts include fewer than 50 study participants.

Table 3

Weighted means and standard errors of self-reported physical activity frequency and duration among participants with stroke compared with participants unexposed to stroke, NHANES 2003–2006

	Stroke group (*n* = 262)		Unexposed group (*n* = 524)		
	Weighted mean	**SE**	**Weighted mean**	**SE**	***P* value[a]**
Transportation activity					
Hours/week	0.7	0.2	0.7	0.2	.96
Moderate to vigorous household activity					
Hours/week	1.1	0.3	3.0	0.4	.00
Moderate leisure activity					
Hours/week	1.5	0.2	1.9	0.2	.23
MET-hours/week	5.8	0.9	7.0	0.8	.37
Vigorous leisure activity					
Hours/week	0.2	0.1	0.7	0.2	.00
MET-hours/week	1.4	0.4	4.9	1.1	.00
Moderate to vigorous leisure activity					
Hours/week	1.2	0.3	2.6	0.3	.02
MET-hours/week	7.2	1.1	11.9	1.5	.01
Aerobic exercise					
Hours/week	1.2	0.2	1.8	0.2	.03
MET-hours/week	5.5	0.9	8.9	1.2	.02
Strengthening activity					
Times/week	2.5	0.5	3.9	0.5	.04

Note: MET = metabolic equivalent; NHANES = National Health and Nutrition Examination Survey; SE = standard error.

[a]Wald's F test comparing stroke and unexposed groups. *P* value is rounded to the hundredth decimal place.

Table 4

Weighted means and standard errors of summarized accelerometer measures comparing participants with stroke and participants unexposed to stroke, NHANES 2003–2006

	Stroke group (*n* = 262)		Unexposed group (*n* = 524)		
	Weighted mean	**SE**	**Weighted mean**	**SE**	***P* value[a]**
Wear time total (hours/day)	12.0	0.3	12.7	0.2	.02
Counts per minute[b]	190.4	21.6	227.1	21.6	.07
Vigorous (min/day)[b]	0.9	0.9	0.2	0.1	.43
Moderate (min/day)[b]	10.0	2.4	12.8	1.0	.26
Moderate to vigorous (min/day)[b]	10.9	3.2	13.0	1.0	.51
Low moderate (min/day)[b]	46.0	3.7	61.4	2.4	.00
Light (min/day)[b]	212.0	6.0	237.2	3.6	.00
Sedentary behavior (hours/day)[b]	10.0	0.2	9.2	0.1	.00

Note: NHANES = National Health and Nutrition Examination Survey; SE = standard error.

[a] Wald's F test comparing stroke and unexposed groups. *P* value is rounded to the hundredth decimal place.

[b] Adjusted for accelerometer wear time.