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# The Effect of Question Order on Reporting Physical Activity and Walking Behavior

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**Background:** Question order might affect self-reported regular physical activity (PA) measured with items from the Behavioral Risk Factor Surveillance System (BRFSS) PA module. **Methods:** A telephone survey was conducted using 2 forms (N = 1004, N = 212) with varying PA question order. The standard form presented moderate-PA, vigorous-PA, and walking questions, in that order, whereas the alternate form presented walking questions, followed by moderate-PA, and then vigorous-PA questions. Weighted, adjusted rates of vigorous PA, walking, meeting the Centers for Disease Control and Prevention (CDC) recommendation for moderate or vigorous PA, and moderate PA from each form were compared. **Results:** Vigorous PA and walking were similar regardless of question order. Meeting the CDC recommendation for moderate or vigorous PA was reported less often with the alternate form among 18- to 34-year-olds. Less moderate PA was reported with the alternate form overall and among 18- to 34-year-olds, women, whites, and those with a high school education or less. **Conclusion:** Estimating PA and walking across sociodemographic strata with differing patterns of PA requires asking moderate-PA and vigorous-PA questions before walking questions. Asking walking questions first might lead to bias, especially for moderate PA. Walking, added to a survey with BRFSS moderate and vigorous PA items, should be placed after moderate and vigorous PA. Walking questions first may cause bias, especially for moderate PA.

**Keywords:** survey, BRFSS, moderate physical activity, vigorous physical activity

Measurement of physical activity (PA) in population surveys is complicated by varying definitions of PA and by questionnaire-design issues. The Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BRFSS) is an important large-scale survey used for setting national health priorities and monitoring progress toward the *Healthy People 2010* objectives at the state and national levels. Use of items from the BRFSS PA module might appeal to researchers and practitioners interested in assessing whether study populations meet national PA recommendations for moderate or vigorous PA. For use in large samples, the current BRFSS PA module<sup>1</sup> elicits frequency and duration of PA

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with 3 questions about moderate-intensity activity followed by 3 questions about vigorous-intensity activity. Details of the development and validation of the current BRFSS PA items have been published by Ainsworth et al.<sup>2</sup> and Macera et al.<sup>3</sup>

To measure walking as a specific behavior, a set of 3 walking questions analogous to the 6 BRFSS questions about moderate and vigorous PA were added to the survey. Adding questions to an existing instrument could affect responses to the original PA questions, yielding rates of PA that are not comparable to studies using only the original 6 items. Ham and colleagues<sup>4</sup> recently examined the effect of question order on rates of PA as estimated in 3 surveys using BRFSS and other questions, finding evidence of a form effect, although these results might have been confounded with other differences in the wording of the items. The current study was designed to isolate potential effects of question order on self-reported PA behavior when such walking questions are used. Two forms of a telephone survey instrument were administered to randomly drawn samples from a single population. The only difference between the survey forms was whether the walking questions were asked immediately before or immediately after the BRFSS moderate- and vigorous-PA items. This article presents the relationship between question order and rates of moderate and vigorous PA and walking, overall and in certain sociodemographic categories.

## Methods

### The Survey

A list-assisted, random-digit-dialed telephone survey was conducted with 1216 non-institutionalized adults 18 years and older in a central South Carolina county by ORC Macro of Burlington, VT. Interviews averaging 18.6 minutes were completed between May 15 and June 23, 2003. The response rate was 32.9% using the Council of American Survey Research Organizations's response-rate formula.<sup>5</sup> The survey's weights were based on 3 components: differential probabilities of selection; a poststratification factor adjusting weighted totals to 2000 census population figures by age, race/ethnicity, and gender; and a factor combining the standard and alternate survey forms.

The survey was conducted as part of an ongoing PA study that was reviewed and approved as compliant with the institution's human-subjects requirements. The questionnaire included either a standard form or an alternate version in which the walking questions were asked first so as to study the effect of question order on answers to the walking, moderate-PA, and vigorous-PA questions. This was the sole difference between the 2 versions. See Appendix 1 for the standard version of the questions (BRFSS items followed by walking questions) and Appendix 2 for the alternate form (walking questions followed by BRFSS items).

This analysis used 1004 respondents who received the standard version of the survey with the BRFSS PA questions asked first and 212 respondents who received the alternate version with walking questions asked first. Of these 1216 respondents, 120 had incomplete, out-of-range, or missing responses for PA or demographic covariates (96 standard-form questionnaire respondents and 24 alternate-form questionnaire respondents); the analysis data set, therefore, included 908 standard-form and 188 alternate-form questionnaire respondents, for a total of 1096 respondents. The 120 respondents with missing data did not differ significantly from the complete cases on sociodemographic characteristics, walking, moderate PA, or vigorous

PA. All respondents met age ( $\geq 18$  years) and residence criteria (resident  $\geq 4$  d/wk,  $\geq 6$  mo/y), and all were physically able to leave the house for a walk without assistance and either “completely or partially physically able” to engage in a sample list of moderate activities (eg, housework, exercise, gardening). Thus, only adult residents who were able to walk were included in the sample.

## Analysis

A census-weighting variable, based on county-level estimates from the US Census Bureau, was used to weight the data by age, race, and gender. The MULTILog procedure in SUDAAN was used to compute weighted proportions in each walking or PA category, adjusted for sociodemographic factors, using logistic regression. These adjusted weighted proportions are analogous to adjusted group means in linear models<sup>6</sup> and are available using the PREDMARG statement in SUDAAN. Dichotomous outcome variables corresponding to PA and walking behaviors were regressed on a dichotomous standard/alternate-form variable along with age, sex, race, education, employment status, and 2-way interactions between form and each sociodemographic factor. The survey script instructed respondents to consider total daily accumulation of activity taking place in continuous intervals of 10 minutes or more. Adjusted proportions of the population reporting the following 4 behaviors were computed for the 2 different question orders:

- Engaging in 20 or more minutes per day of accumulated vigorous PA on 3 or more days per week
- Engaging in 30 or more minutes per day of accumulated moderate PA on 5 or more days per week
- Meeting the CDC/American College of Sports Medicine (ACSM) recommendation for accumulated moderate or vigorous PA, defined herein as either 30 or more minutes per day of moderate PA on 5 or more days per week or 20 or more minutes per day of vigorous PA on 3 or more days per week
- Walking for 30 or more accumulated minutes per day on 5 or more days per week

These adjusted proportions were also estimated separately within 2 or 3 strata each of age, sex, race, education, and employment along with a Wald test of statistical significance for the question-order effect in each stratum.

## Results

There were no statistically significant differences at the  $\alpha = .05$  level between the sociodemographic characteristics of the standard- and alternate-form subsamples. Sociodemographic characteristics of the respondents that were administered each survey form are presented in Table 1 (weighted proportions in each category).

### Vigorous PA

Regular vigorous PA (3 or more days, 20 minutes or more) differed only 2.3% by question order in the overall sample, with the slightly higher-reported rate being

**Table 1 Demographic Characteristics of the Sample<sup>a</sup>**

	Standard form (BRFSS questions first)	Alternate form (walking questions first)
Age, mean (SD)	41.5 (15.9)	43.7 (16.1)
Sex		
female	51.3%	55.5%
male	48.7%	44.5%
Race <sup>b</sup>		
white	55.9%	57.0%
other	44.1%	43.0%
Education		
high school graduate or less	40.1%	39.4%
some college	33.4%	36.9%
college graduate	26.5%	23.7%
Employment		
employed	65.0%	63.0%
not employed	35.0%	37.0%

Abbreviations: BRFSS, Behavioral Risk Factor Surveillance System.

<sup>a</sup> Weighted proportions.

<sup>b</sup> Overall race proportions were 56.1% white, 38.7% African American, and 5.2% other.

with the alternate form, in which walking questions were asked first. As presented in Table 2, in specific sociodemographic categories, differences by question order were small in magnitude, ranging from 1.8% to 7.2%. These differences are within the range of random variation expected given the small alternate-form sample size of 188 respondents. None of the stratum-specific differences were statistically significant.

## Moderate PA

Table 3 presents the results from a similar analysis of regular moderate PA (5 or more days, 30 minutes or more). In contrast to results for vigorous PA, the overall reported moderate-PA proportions' differences by question order were larger and statistically significant, with the proportion of respondents reporting regular moderate PA being 9.8% lower when respondents were asked walking questions first than when respondents received the standard question order. The difference among the 18- to 34-year-old subgroup was largest, with 17.7% more reporting regular moderate PA among those receiving the standard order (PA questions before walking questions). Other large differences were observed for women (11.8%), whites (13.4%), and those with a high school education or less (16.6%). All of these differences were in the same direction as the overall results, and all were statistically significant. Asking walking questions first was associated with a smaller proportion of persons who report meeting the moderate-PA recommendation (5 or more days, 30 minutes or more).

**Table 2 Effect of Question Order on Regular Vigorous PA<sup>a</sup> by Sociodemographic Category**

Demographic	Standard form (BRFSS questions first)		Alternate form (walking questions first)		Question- order effect, <i>P</i> value
	n	Adjusted % regular vigorous PA (SE)	n	Adjusted % regular vigorous PA (SE)	
Overall	900	34.7 (1.6)	186	37.0 (3.7)	.57
Age (y)					
55+	182	22.5 (3.5)	49	28.2 (6.8)	.42
35–54	378	31.2 (2.5)	77	37.3 (5.9)	.32
18–34	340	47.7 (2.8)	60	40.8 (6.4)	.33
Sex					
female	537	30.5 (2.0)	120	31.8 (4.6)	.79
male	363	39.2 (2.6)	66	42.6 (5.9)	.59
Race <sup>b</sup>					
white	527	36.1 (2.1)	112	34.3 (4.6)	.25
other	373	33.0 (2.5)	74	40.2 (6.0)	.74
Education					
HS graduate or less	350	28.7 (2.5)	73	30.8 (5.7)	.74
some college	307	37.8 (2.9)	70	40.2 (6.2)	.72
college graduate	243	39.7 (3.3)	43	42.0 (7.8)	.78
Employment					
not employed	298	34.7 (3.1)	66	29.8 (6.3)	.49
employed	602	34.7 (2.1)	120	40.5 (4.6)	.24

Abbreviations: BRFSS, Behavioral Risk Factor Surveillance System; PA, physical activity; HS, high school.

<sup>a</sup> Regular vigorous PA is defined as 20 minutes or more on 3 or more days per week.

<sup>b</sup> Overall race proportions were 56.1% white, 38.7% African American, and 5.2% other.

**Meeting the CDC Recommendation for Moderate or Vigorous PA**

Table 4 shows the effects of question order on meeting the CDC/ACSM PA recommendation in age, sex, race, education, and employment subgroups. Asking the walking questions first was associated with a very slight decrease (2.2%) in the proportion of respondents reporting regular moderate or vigorous PA. The sociodemographic stratum for which this difference was largest was the youngest age group, 18 to 34 years old, among whom the question order is associated with a difference of 13.7% ( $P = .05$ ), with the higher rates of reported PA among those receiving the questions in standard order (PA questions before walking questions). This stratum-specific difference was borderline statistically significant.

**Table 3 Effect of Question Order on Regular Moderate PA<sup>a</sup> by Sociodemographic Category**

Demographic	Standard form (BRFSS questions first)		Alternate form (walking questions first)		Question-order effect, <i>P</i> value
	<i>n</i>	Adjusted % regular moderate PA (SE)	<i>n</i>	Adjusted % regular moderate PA (SE)	
Overall	902	40.3 (1.7)	184	30.5 (3.6)	.02
Age (y)					
55+	183	33.5 (3.6)	50	25.6 (6.0)	.28
35–54	381	38.8 (2.7)	75	33.5 (6.0)	.43
18–34	338	47.4 (2.8)	59	29.7 (5.8)	.02
Sex					
female	536	40.5 (2.2)	117	28.7 (4.4)	.03
male	366	40.1 (2.6)	67	32.8 (5.8)	.27
Race <sup>b</sup>					
white	527	47.2 (2.2)	109	33.8 (4.7)	.02
other	375	31.5 (2.5)	75	26.5 (5.4)	.42
Education					
HS graduate or less	353	36.5 (2.6)	72	20.9 (5.2)	.02
some college	305	43.3 (3.0)	70	39.5 (6.2)	.57
college graduate	244	41.9 (3.3)	42	33.1 (7.7)	.31
Employment					
not employed	298	42.7 (3.1)	66	32.9 (6.1)	.16
employed	604	38.9 (2.1)	118	29.3 (4.5)	.06

Abbreviations: BRFSS, Behavioral Risk Factor Surveillance System; PA, physical activity; HS, high school.

<sup>a</sup> Regular moderate PA is defined as 30 minutes or more on 5 or more days per week.

<sup>b</sup> Overall race proportions were 56.1% white, 38.7% African American, and 5.2% other.

## Walking

There was little overall difference by question order in reported regular walking behavior, detailed in Table 5. The proportion (SE) reporting regular walking (5 or more days, 30 minutes or more) was 3.3% smaller for the standard form than for the alternate form. For individual sociodemographic strata, the differences by question order generally ranged from 0.5% to 9.6%. However, in the middle of the 3 education categories (Some College), the proportion reporting regular walking was 13.3% greater for the alternate form than for the standard form ( $P = .05$ ). None of the other stratum-specific differences were statistically significant.

**Table 4    Effect of Question Order on Meeting the CDC PA Recommendation<sup>a</sup> by Sociodemographic Category**

Demographic	Standard form (BRFSS questions first)		Alternate form (walking questions first)		Question-order effect, <i>P</i> value
	<i>n</i>	Adjusted % (SE) meeting CDC PA recommendation	<i>n</i>	Adjusted % (SE) meeting CDC PA recommendation	
Overall	908	53.9 (1.7)	188	51.7 (3.8)	.60
Age (y)					
55+	183	45.2 (4.0)	50	45.8 (7.3)	.94
35–54	382	51.4 (2.7)	78	55.1 (5.9)	.56
18–34	343	63.4 (2.7)	60	49.7 (6.5)	.05
Sex					
female	541	50.5 (2.2)	120	45.4 (4.8)	.34
male	367	57.7 (2.7)	68	59.0 (5.9)	.84
Race <sup>b</sup>					
white	531	58.5 (2.2)	113	51.2 (4.8)	.17
other	377	48.1 (2.7)	75	52.6 (6.0)	.49
Education					
HS graduate or less	355	50.3 (2.7)	74	42.4 (6.2)	.25
some college	308	56.0 (3.0)	72	57.0 (6.0)	.88
college graduate	245	56.8 (3.3)	43	59.1 (7.8)	.79
Employment					
not employed	298	54.0 (3.1)	68	49.8 (6.5)	.55
employed	610	53.9 (2.2)	120	52.9 (4.7)	.84

Abbreviations: CDC, Centers for Disease Control and Prevention; BRFSS, Behavioral Risk Factor Surveillance System; PA, physical activity; HS, high school.

<sup>a</sup> The recommended level of PA is either moderate activity for 30 minutes or more on 5 or more days per week or vigorous activity for 20 minutes or more on 3 or more days per week.

<sup>b</sup> Overall race proportions were 56.1% white, 38.7% African American, and 5.2% other.

## Discussion

Choosing standard survey items is not sufficient to ensure that the responses will be comparable to other surveys using those questions. The context in which the items are presented also matters, and the results of this study suggest that PA rates derived from a survey can be affected by variations in the order of moderate PA, vigorous PA, and walking questions. Although the difference by question order observed in the proportion meeting the CDC/ACSM recommendation was minimal in this case, even a small question-order effect is troubling if such surveys are used for surveillance of population PA. For instance, other sources of systematic bias in PA reporting, such as seasonal effects, could be compounded by the effect of question order. Actual changes in PA from year to year documented through cross-sectional surveys are at best very small in magnitude on a whole-population



**Table 5 Effect of Question Order on Regular Walking<sup>a</sup> by Sociodemographic Category**

Demographic	Standard form (BRFSS questions first)		Alternate form (walking questions first)		Question- order effect, <i>P</i> value
	<i>n</i>	Adjusted % regular walking (SE)	<i>n</i>	Adjusted % regular walking (SE)	
Overall	908	37.7 (1.7)	188	41.0 (3.7)	.47
Age (y)					
55+	183	36.3 (3.9)	50	36.8 (7.0)	.95
35–54	382	37.9 (2.6)	78	42.0 (5.7)	.50
18–34	343	38.5 (2.6)	60	43.5 (6.5)	.42
Sex					
female	541	36.3 (2.1)	120	40.8 (4.6)	.37
male	367	39.1 (2.6)	68	41.1 (5.8)	.75
Race <sup>b</sup>					
white	531	39.6 (2.2)	113	37.9 (4.6)	.74
other	377	35.3 (2.6)	75	44.9 (5.8)	.12
Education					
HS graduate or less	355	35.8 (2.6)	74	30.4 (5.6)	.39
some college	308	41.0 (2.9)	72	54.3 (6.1)	.05
college graduate	245	36.2 (3.2)	43	38.4 (7.6)	.79
Employment					
not employed	298	27.3 (2.7)	68	31.6 (5.8)	.49
employed	610	43.3 (2.2)	120	46.0 (4.7)	.59

Abbreviations: BRFSS, Behavioral Risk Factor Surveillance System; HS, high school.

<sup>a</sup> Regular walking is defined as 30 minutes or more on 5 or more days per week.

<sup>b</sup> Overall race proportions were 56.1% white, 38.7% African American, and 5.2% other.

basis. Even small measurement biases might be enough to obscure a true change. For moderate PA, the differences in the measured proportion meeting the recommendation with the walking questions before and after the BRFSS items were sufficiently large (11.8% to 17.7% depending on sociodemographic stratum) to be a cause for concern over the validity of studies using this instrument. In fact, the overall and several of the stratum-specific differences were statistically significant even in this small alternate-form sample.

Ham et al<sup>4</sup> compared the BRFSS with the National Physical Activity Survey (NPAS) and found differences in reported moderate and vigorous PA between the 2 surveys, which differed primarily in question order. Compared with the NPAS, which asked about moderate PA before vigorous PA, they found lower reported rates of moderate PA with the version of BRFSS in use at the time, in which questions about vigorous PA preceded those about moderate PA. The authors discussed the possibility that items perceived as repetitive might be endorsed less frequently. Another potential issue arises when combining items about a specific moderate-intensity PA behavior such as walking and general moderate-PA questions. There might be overlap in the

mind of the respondent between the constructs of walking and moderate PA. With walking questions asked first, all or some respondents might attempt to report frequency and duration of moderate PA in a way that does not count walking as moderate PA.

The current study also found differential effects of question order across sociodemographic categories. Even when not comparing multiple surveys, the presence of walking questions before the standard BRFSS PA items could lead to incorrect inferences concerning differences among age, race, or gender groups. For instance, taken in isolation, the alternate-form data from this study would be interpreted as showing a lower proportion of regular moderate and vigorous PA among 18- to 34-year-olds than among 35- to 54-year-olds (see Table 4). Conversely, the standard form with the BRFSS PA items at the very beginning of the module (before the walking items) shows that more 18- to 34-year-olds meet the PA recommendation than do 35- to 54-year-olds, which is the usual pattern expected in population surveys. A possible factor contributing to differential question-order effects could be variation in the prevalence of specific moderate- and vigorous-PA behaviors in each sociodemographic group. If, for instance, respondents were confused as to whether walking “counts” as moderate PA, then the magnitude of the effect in any stratum would depend on the proportion of moderate PA made up of walking for members of that stratum.

These results indicate that question order matters when incorporating the BRFSS PA module in surveys, specifically that items concerning moderate and vigorous PA should be the first ones presented to the respondent. Items about walking yielded similar overall proportions when used before or after moderate- and vigorous-PA items (the large difference specific to the Some College stratum might have been a chance occurrence because of the small size of that subgroup), whereas moderate-PA prevalence differed substantially depending on whether moderate-PA items were asked before or after questions about walking. This is an indication that if walking questions are to be used, placing them after the standard BRFSS moderate- and vigorous-PA questions is preferred. Otherwise, the resulting estimates might not be comparable in all sociodemographic subpopulations with the rates measured by national surveillance surveys.

Although this study was sufficient for its intended purpose of examining overall population prevalence estimates for a possible effect of question order, the sample size was too limited to draw definite conclusions concerning differential effects across subpopulations (ie, younger adults or the less educated). A future study that administers standard and alternate forms of the instrument each to a large sample of 1000 or more respondents would have sufficient statistical power to allow judgment as to whether an apparent difference of 10% or more in strata-specific rates of self-reported PA is simply caused by chance or represents reproducible and potentially problematic measurement issues in the use of these survey questions. Another very useful feature for a future study would be the administration of an instrument designed to estimate energy-expenditure units, such as metabolic equivalent minutes per day. Additional qualitative testing, such as cognitive interviewing, could address the possibility of construct overlap in members of certain subpopulations.

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## Appendix 1

## BRFSS Physical Activity (Standard Form)

For the next questions, we are interested in two types of physical activity: vigorous and moderate. Vigorous activities cause large increases in breathing or heart rate, and moderate activities cause small increases in breathing or heart rate.

Now, thinking about the **moderate** activities you do when you are not working at a paid job:

NOTE: EMPHASIZE “MODERATE”

1. In a usual week, do you do **moderate** physical activities for at least 10 minutes at a time, such as brisk walking, bicycling, vacuuming, gardening, or anything else that causes small increases in breathing or heart rate?

1 Yes

2      No      {SKIP TO Q4}

CODE BUT DO NOT READ

7777 Don't know/Not sure {SKIP TO Q4}

9999 Refused {SKIP TO Q4}

2. On how many days per week do you usually do **moderate** physical activities for at least 10 minutes at a time?

\_\_\_\_\_ days

CODE BUT DO NOT READ

7777 Don't know/Not sure [Probe ("Just your best guess")]  
 9999 Refused {GO TO Q4}

3. On days when you do **moderate** activities for at least 10 minutes at a time, how much total time do you spend doing these activities?

Hours \_\_\_\_  
 And minutes \_\_\_\_

CODE BUT DO NOT READ

7777 Don't know/Not sure [Probe ("Just your best guess")]  
 9999 Refused

Now, thinking about the **vigorous** activities you do when you are not working at a paid job:

NOTE: EMPHASIZE "VIGOROUS"

4. In a usual week, do you do **vigorous** activities for at least 10 minutes at a time, such as running, aerobics, heavy yard work, or anything else that causes large increases in breathing or heart rate?

1 Yes  
 2 No {GO TO Q7}

CODE BUT DO NOT READ

7777 Don't know/Not sure {GO TO Q7}  
 9999 Refused {GO TO Q7}

5. On how many days per week do you do these **vigorous** activities for at least 10 minutes at a time?

\_\_\_\_\_ days

CODE BUT DO NOT READ

7777 Don't know/Not sure [Probe ("Just your best guess")]  
 9999 Refused {GO TO Q7}

6. On days when you do **vigorous** activities for at least 10 minutes at a time, how much total time do you spend doing these activities?

Hours \_\_\_\_  
 And minutes \_\_\_\_

CODE BUT DO NOT READ

7777 Don't know/Not sure [Probe ("Just your best guess")]  
 9999 Refused

The next 3 questions ask you about your **walking** behavior **SPECIFICALLY**.

7. In a usual week, do you walk for at least 10 minutes at a time for recreation, exercise, to get to and from places, while at work, or for any other reason?

1 Yes

2 No

**{Skip to Q10}**

CODE BUT DO NOT READ

7777 Don't know/Not sure

**{Skip to Q10}**

9999 Refused

**{Skip to Q10}**

8. How many days per week do you walk for at least 10 minutes at a time?

\_\_\_\_\_ days per week

CODE BUT DO NOT READ

7777 Don't know/Not sure

[Probe (“Just your best guess”)]

9999 Refused

**{GO TO Q10}**

9. On days when you walk for at least 10 minutes at a time, how much total time per day do you spend walking?

Hours \_\_\_\_\_

And minutes \_\_\_\_\_

CODE BUT DO NOT READ

7777 Don't know/Not sure

[Probe (“Just your best guess”)]

9999 Refused

## Appendix 2

## BRFSS Physical Activity (Alternate Form)

The next 3 questions ask you about your **walking** behavior **SPECIFICALLY**.

1. In a usual week, do you walk for at least 10 minutes at a time for recreation, exercise, to get to and from places, while at work, or for any other reason?

1 Yes

2 No

**{Skip to Q10}**

CODE BUT DO NOT READ

7777 Don't know/Not sure

**{Skip to Q10}**

9999 Refused

**{Skip to Q10}**

2. How many days per week do you walk for at least 10 minutes at a time?  
\_\_\_\_\_ days per week

CODE BUT DO NOT READ

7777 Don't know/Not sure [Probe ("Just your best guess")]  
9999 Refused {GO TO Q10}

3. On days when you walk for at least 10 minutes at a time, how much total time per day do you spend walking?

Hours \_\_\_\_\_  
And minutes \_\_\_\_\_

CODE BUT DO NOT READ

7777 Don't know/Not sure [Probe ("Just your best guess")]  
9999 Refused

For the next questions, we are interested in two types of physical activity: vigorous and moderate. Vigorous activities cause large increases in breathing or heart rate, and moderate activities cause small increases in breathing or heart rate.

Now, thinking about the **moderate** activities you do when you are not working at a paid job:

NOTE: EMPHASIZE "MODERATE"

4. In a usual week, do you do **moderate** physical activities for at least 10 minutes at a time, such as brisk walking, bicycling, vacuuming, gardening, or anything else that causes small increases in breathing or heart rate?

1 Yes  
2 No {SKIP TO Q4}

CODE BUT DO NOT READ

7777 Don't know/Not sure {SKIP TO Q4}  
9999 Refused {SKIP TO Q4}

5. On how many days per week do you usually do **moderate** physical activities for at least 10 minutes at a time?

\_\_\_\_\_ days

CODE BUT DO NOT READ

7777 Don't know/Not sure [Probe ("Just your best guess")]  
9999 Refused {GO TO Q4}

6. On days when you do **moderate** activities for at least 10 minutes at a time, how much total time do you spend doing these activities?

Hours \_\_\_\_

And minutes \_\_\_\_

CODE BUT DO NOT READ

7777 Don't know/Not sure [Probe ("Just your best guess")]

9999 Refused

Now, thinking about the **vigorous** activities you do when you are not working at a paid job:

NOTE: EMPHASIZE "VIGOROUS"

7. In a usual week, do you do **vigorous** activities for at least 10 minutes at a time, such as running, aerobics, heavy yard work, or anything else that causes large increases in breathing or heart rate?

1 Yes

2 No {GO TO Q7}

CODE BUT DO NOT READ:

7777 Don't know/Not sure {GO TO Q7}

9999 Refused {GO TO Q7}

8. On how many days per week do you do these **vigorous** activities for at least 10 minutes at a time?

\_\_\_\_\_ days

CODE BUT DO NOT READ

7777 Don't know/Not sure [Probe ("Just your best guess")]

9999 Refused {GO TO Q7}

9. On days when you do **vigorous** activities for at least 10 minutes at a time, how much total time do you spend doing these activities?

Hours \_\_\_\_

And minutes \_\_\_\_

CODE BUT DO NOT READ

7777 Don't know/Not sure [Probe ("Just your best guess")]

9999 Refused