

# **National Walking Survey**

**by**

**America Walks**

**[www.americawalks.org](http://www.americawalks.org)**

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## Introduction

Walking has multiple benefits. These benefits are broad in scope affecting our physical health, our emotional well-being, the communities in which we live, and the natural environment.

Given the multiple benefits that accrue from walking, it is surprising that so little systematic inquiry has been undertaken concerning the attitudes and behaviors of walkers. One has only to think of the countless studies that have been conducted on the attitudes and behaviors of individuals who are dieting or people involved in a smoking-cessation program. Yet, by contrast, the number of quantitative or qualitative studies carried out on walkers is sparse.

In a recent report entitled, *Dangerous by Design*, the authors write: “Whether or not Americans walk, and whether they are safe and comfortable when doing so, is a matter of growing urgency for our health, energy and climate, aging population and the livability of our cities.” (The Surface Transportation Policy Partnership and Transportation for America, 2009, p. 11).

If we as a society are to reap the multiple benefits of walking – physical, emotional, social, and environmental – then it is critically important to learn about the determinants of walking. Why do some people walk? Why do other people not walk?

The present study aims to understand the underlying motivations for why people walk. The study focuses on “avid” walkers – individuals who walk frequently. The study addresses a number of key issues concerning the attitudes and behaviors of these enthusiastic walkers. Who are these enthusiastic walkers? How frequently do they walk? For how long a period of time, at what pace and where do they walk? What are the main reasons they decided to walk? Who encouraged them to walk initially? What role do family members and friends play in supporting their walking habit? How does the physical layout of their neighborhood influence their walking behavior? What other physical activities do they engage in? What, if any, medical problems do they have?

By concentrating on this important subgroup in the population, the “trend setters,” and learning about their attitudes and behavior concerning walking, we can extract certain lessons which can then be applied to the broader population.

## **Methodology**

The results of this study are based on an online survey conducted by America Walks. America Walks is a national organization whose mission is to promote walkable communities throughout the United States. The survey was administered to the membership of America Walks and a number of walk/bike and/or other health-related organizations that partnered with America Walks for the purposes of this survey. The organizations included the following: AARP, Active Transportation Alliance, Alliance for Biking & Walking, American Public Health Association, Bike Walk Virginia, California Walks, Initiative for Bicycle & Pedestrian Innovation at Portland State University (IBPI), PedNet Coalition, PEDS, Rails-To-Trails Conservancy, Safe Routes to School National Partnership, Vermont Bicycle & Pedestrian Coalition, Walk San Diego, Walk San Francisco, WalkBoston, Walking.About.com, and Willamette Pedestrian Coalition (WPC).

The survey was carried out between April 27 and June 13, 2011. Potential respondents were notified of the survey either via the home pages of the participating organizations and/or thru emails that were sent directly to their members. Respondents were encouraged to disseminate information about the survey to others via a number of social networks (i.e., twitter, Facebook, personal blogs, etc.). At the beginning of the survey, participants were informed that their responses were anonymous.

After the survey had been in the field for three weeks and the vast majority of the surveys submitted (May 19, 2011), four additional items were inserted in the survey instrument. One of these items pertained to where respondents walked when the weather was cold. A second item concerned the pace at which respondents walked. The third and fourth items were additional questions taken from the Neighborhood Environment Walkability Scale (NEWS) designed by Professor Jim Sallis of San Diego State University.

One of the background questions in the survey was the respondent's residential 5 digit zip code. Based on this information, we appended to each respondent's record two variables from the 2000 Census Zip Code Tabulation Areas (TZCAs). These two variables were the population density and the median household income (in 1999 dollars) of the TZCA in which the respondent lived. In a limited number of cases (n = 381), respondents lived in areas for which no TZCA data were available.

Altogether, 7,019 individuals participated in the survey. Since the individuals in the survey were not randomly selected, the sample cannot be considered representative of all adults in the United States. However, participants from the bike/walk organizations can be considered a "purposive sample" of avid walkers.

Because some of the organizations that partnered with America Walks in administering the survey were not specifically "bike/walk" organizations (e.g., AARP, American Public Health Association) and also because the survey was widely disseminated through several venues, the survey was also able to capture a number of individuals who were not avid walkers. These less avid walkers formed a comparison group. Members of this comparison group were asked a set of questions about why they did not walk more frequently.

## **Findings**

### **1) Profile of Respondents**

The sample was skewed towards better educated, more affluent respondents. Among the sampled members, 33.8 percent had a bachelor's degree and an additional 47.2 percent had graduate or professional training or a degree. Furthermore, the median household income (in 1999 dollars) in the zip code tabulation areas (ZCTA) in which sampled members lived averaged \$46,256 – well above the national median (\$41,994). In terms of race and ethnic background, the sample was made up disproportionately of white non-Hispanics (90.1%). Only 1.6 percent of the sample members identified themselves as Asian, 2.4 percent as African-American, and 2.1 percent as Hispanic.

## 2) Frequency of Walking

Table 1 below shows how often a respondent indicated that he/she walked at least 15 minutes at a time. For the purposes of this study, we labeled individuals who reported they walked at least 3-4 days a week as “frequent walkers” and the remainder of the sample as “infrequent walkers.” The former group consisted of 77 percent of the sample. Almost one-third of the entire sample (32.5%) said they walked “everyday.”

Table 1. Frequency of Walking\*

	Frequency	Percent
Never	33	.5
Rarely	257	3.7
A few times a month	415	6.0
1-2 days a week	889	12.8
3-4 days a week	1589	22.8
5-6 days a week	1510	21.7
Everyday	2264	32.5
Total	6957	100.0

\* Omits 62 individuals who said that currently they could not walk because of physical impairments.

The profile of frequent walkers is somewhat distinctive. They tend to be found more among the youngest (18-24 year olds) and the oldest (65 and over) age categories. Eighty-two percent of the youngest group and eighty-four percent of the oldest group are frequent walkers. In the middle age categories there is a diminution in the percent of frequent walkers. Given this finding, it is not surprising that there is a higher proportion of frequent walkers among single and widowed individuals than among other marital status groups – particularly those who are separated or divorced. In terms of race and ethnicity, frequent walkers are disproportionately found among Asians (83%) and non-Hispanic whites (77.1%) than among either African-Americans or Hispanics. They also tend to be highly educated. Among those who have graduate school or professional training or a degree, 80.3 percent are frequent walkers compared to only 67.8 percent of those who have just a high school education or less. Frequent walkers are also more likely to be represented among those who are working only part-time or are not in the active labor force (homemakers, students, retirees) than among the ranks of the full time employed. Finally, the population density of the zip code tabulation area in which a respondent resides (persons per square mile) is related to the likelihood of him/her being a frequent walker. Areas that are more densely populated have higher concentrations of frequent walkers than less populated areas.

### **3) History of Walking**

Frequent walkers were asked for how long a period of time they have been walking. A substantial segment (63%) reported that they had been walking for over five years (see Table 2). Coinciding with expectations, the older a respondent is, the more likely he/she has been walking for a lengthier period of time.

Table 2. Length of Time a Person has been Walking\*

	Frequency	Valid Percent
Less than one year	301	7.3
One year up to two years	349	8.5
Two years up to three years	356	8.7
Three years up to five years	439	10.7
More than five years	2592	63.0
Do not know	75	1.8
Total	4112	100.0

\* Omits certain individuals in the sample who were asked a slightly different question in which the highest category was “More than three years” instead of “More than five years.”

#### 4) Location of Walking

Where do frequent walkers walk when the weather is “okay”? A large majority (63.9%) walk on sidewalks and streets (see Table 3 below). People walk where they live – in their neighborhoods. “Combination of places” is a bit ambiguous. Even if half of those walk on sidewalks/streets some of the time, then over 75 percent of frequent walkers choose to walk on sidewalk/streets.

Table 3. Location of walkers

Location	Frequency	Valid Percent
A gym	93	1.7
On a treadmill at home	75	1.4
In a mall	16	.3
Parks/forests	427	8.0
Sidewalks/streets	3422	63.9
Other	90	1.7
Combination of places	1233	23.0
Total	5356	100.0

A small subset of the sampled members (n = 269) were asked where they walk “during the winter when the weather is cold.” This question was not directly comparable to the one above about walking location when the weather was “okay” because the response category “combination of places” was excluded. With this in mind, it is nevertheless interesting to note that the percent who replied that they walked in a gym, in a mall, or on a treadmill at home went up somewhat (7.1%, 2.2%, and 7.1%, respectively). Again, a sizable number (65.1%) replied that they walked on sidewalks and streets.

## 5) Source of Original Encouragement to Walk

Where have frequent walkers received their encouragement to walk? A large majority (56.7%) said they decided to walk on their own (see Table 4 below). It is somewhat surprising to observe how few of the frequent



walkers received motivation from the media (6.6%) or from a health care professional (4.0%).

With advancing age, more respondents report getting encouragement to walk from either the media or from a health care professional. Those most likely to receive encouragement from the media fall in the age range of 45 to 64 (9.6%) or are 65 year of age or older (8.6%). The oldest age category also has the highest frequency of those most likely to receive encouragement from a health care professional (6.4%). Males are slightly more likely to receive encouragement from a health care professional while females are slightly more likely to receive encouragement from the media.

Table 4. Source of Original Encouragement to Walk

Source of Encouragement	Frequency	Percent
A family member encouraged me to walk.	287	5.4
A friend or acquaintance encouraged me to walk.	219	4.1
A health care professional encouraged me to walk.	212	4.0
An organization in my community encouraged me to walk.	59	1.1
I don't remember the reason.	284	5.3
I heard or read about the benefits of walking in the media.	353	6.6
I just decided to walk on my own.	3037	56.7
The organization I work for encouraged me to walk.	140	2.6
Other	763	14.3
Total	5354	100.0

## 6) Basic Orientation towards Walking

To measure an individual's basic orientation towards walking, we asked respondents who walk frequently (more than 3 times a week for at least 15 minutes at a time) whether they: 1) walk mainly to get to a specific destination such as work, school, or a store, 2) walk mainly for other reasons such as to exercise or to relax, or 3) whether they walk equally for both reasons – to get to a specific destination and also for other reasons such as to exercise or to relax.

Respondents who answered that they walked mainly to get to a specific destination we labeled “instrumental walkers.” Respondents who answered that they walked mainly for reasons such as to exercise or to relax we labeled “health/relaxation walkers.” Finally, respondents who answered that they walk equally for both of the above reasons we termed, “hybrid walkers.” We asked this question about basic orientation separately to two subgroups of walkers – those with pets and those without pets.

The overall distribution of responses to this question is presented in Table 5 below.

Table 5. Basic Orientation towards Walking

Non-Pet Owners:	
I walk equally for both reasons – to get to a specific destination and also for other reasons such as to exercise or to relax.	33.5%
I walk mainly for other reasons such as to exercise or to relax.	28.6%
I walk mainly to get to a specific destination such as work school, or a store.	19.3%
Pet Owners:	
I walk equally to take care of my pet and also for other reasons such as to exercise or to relax	12.8%
I walk equally to take care of my pet and also to get to a specific destination.	3.1%
I walk mainly to take care of my pet	2.7%
	100.0% (5348)

As the data in the table show, the ranking of reasons for walking is the same for both non-pet owners and pet owners. Both subgroups consist mainly of “hybrid walkers,” followed by “health/relaxation walkers,” and lastly by “instrumental walkers.” A significant segment of frequent walkers (18.6%) fall into the pet owning category. *These data indicate that most pet owners don’t just walk to exercise their pet. They walk also to exercise themselves.* Along these same lines, pet owners typically walk for the same duration of time as non-pet owners.

The basic orientation of frequent walkers is shaped to a large degree by their demographics. The table below shows the basic orientation of frequent walkers who are non-pet owners by age.

Table 6. Basic Orientation of Walkers by Age \*

Basic orientation	Age					Total
	18-24	25-30	31-44	45-64	65+	
Mainly for a specific destination	50.5%	43.3%	31.4%	13.0%	10.3%	23.6%
Equally for a specific destination and for health	41.8%	43.7%	41.0%	41.3%	37.2%	41.2%
Mainly for health or relaxation	7.7%	13.0%	27.6%	45.8%	52.5%	35.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

\* Excludes pet owners

The data in the above table shows that the percent of “instrumental walkers” declines steadily with age. Fully half of the respondents in the youngest age category of 18-24 are “instrumental walkers” (50.5%). The corresponding figure for respondents in the oldest age category (65 and over) is just 10.3 percent. Almost all of this decline in the proportion of “instrumental walkers” is due to the rise in the proportion of “health/relaxation walkers.” Their proportion in the population increases from 7.7 percent among the youngest age category to 52.1 percent among the oldest age category. So, we see that as people get older, health and relaxation become progressively more important factors in their decision to walk.

A person’s sex also is related to their basic orientation (see table below). Males tend to be far more “instrumental” in their orientation to walking than females. This finding persists when age is held constant except for the oldest age category. Among those who are 65 years of age or older, the pattern reverses itself and a higher proportion of males than females say they walk mainly for purposes of health.

Table 7. Basic Orientation by Sex\*

Basic orientation	Sex		Total
	Female	Male	
Mainly for a specific destination	18.8%	32.1%	23.6%
Equally for destination and for health	42.6%	38.4%	41.1%
Mainly for health or Relaxation	38.6%	29.5%	35.3%
Total	100.0%	100.0%	100.0%

\* Excludes pet owners

Population density is also related to a respondent's orientation towards walking. Table 8 reveals that as an area becomes more densely populated, the percent of respondents who walk mainly to get to a specific destination rises noticeably from 8.7 percent to 38.1 percent.

To a certain extent this finding is due to the fact that a higher-than-average number of walkers in urban areas are young and single who, as has been previously demonstrated, tend to be "instrumental walkers."

Table 8. Basic Orientation by Population Density \*

Basic orientation	Population Density			Total
	Lowest density	Middle-level density	Highest density	
Mainly for a specific destination	8.7%	19.1%	38.1%	23.6%
Equally for destination and for health	31.9%	39.6%	49.4%	41.3%
Mainly for health or relaxation	59.4%	41.3%	12.4%	35.1%
Total	100.0%	100.0%	100.0%	100.0%

\* Excludes pet owners

The effect of demographic variables such as age, sex, and population density on the basic orientation towards walking on the part of pet owners is similar to that of non-pet owners. With increasing age, there is a steep increase in the proportion of pet owners who walk equally to take care of their pet and for purposes of health and relaxation and a correspondingly sharp decline in the proportion of pet owners who walk equally to take care of their pet and to get to a specific destination.

Like the non-pet owners, there is also a gender gap in terms of the basic orientation towards walking on the part of pet owners. Male pet owners are much more likely to have an “instrumental” orientation towards walking than females. The proportion of male pet owners who walk to either take care of their pet or equally to take care of their pet and get to a specific destination is greater than their female counterparts.

As was true also with non-pet owners, as the population density of an area increases, the proportion of “instrumental” pet owners rises and at the same time the proportion of “health/relaxation” pet owners decreases.

## 10) Length of Walking

For how long a time do frequent walkers typically walk? The majority (55.1%) say they walk between  $\frac{1}{4}$  hour up to  $\frac{1}{2}$  hour (see Table 9). Slightly more than a third say they walk between  $\frac{1}{2}$  hour up to a full hour and almost 10 percent say they walk for more than one full hour.

Not surprisingly, there is a strong relationship between the duration of time a respondent walks and his/her basic orientation towards walking. Among the “instrumentalists,” the vast majority (83.5%) report walking the least amount of time ( $\frac{1}{4}$  to up to  $\frac{1}{2}$  hour). By contrast, among the “health/relaxation walkers,” only 14 percent walk the least amount of time and 50.1 percent walk between  $\frac{1}{2}$  hour up to an hour.

The relationship between duration of walking and basic orientation towards walking is attributable, in part, to the greater numerical representation of women and older individuals among the “health/relaxation walkers” and to the fact that these two groups of respondents tend to walk for longer periods of time than other respondents. However, even when controlling for both the sex of the respondent and his/her age, basic orientation towards walking has a significant bearing on the duration of walking.

Table 9. Length of Walking by Basic Orientation of Walker

Length of Walking	Basic Orientation			Total
	Mainly for a specific destination	Equally for destination and for health	Mainly for health or relaxation	
Between 15 minutes up to 1/2 hour	83.5%	57.1%	33.9%	55.1%
Between 1/2 hour up to 1 hour	14.0%	33.2%	50.1%	34.6%
Between 1 hour up to 1 and 1/2 hours	.8%	6.4%	12.2%	7.1%
More than 1 and 1/2 hours	.8%	2.3%	3.6%	2.4%
Do not know	1.0%	1.0%	.3%	.7%
Total	100.0%	100.0%	100.0%	100.0%

## 11) Pace of Walking

A subset of frequent walkers (n = 300) were asked about the pace at which they walked. One-third (33.7%) said they walked at a “brisk” pace, somewhat more than one-half (56.7%) said they walked at a “moderate” pace, and only a small fraction (1.7%) said they walked at a “slow” pace. Approximately 8 percent replied that they changed their pace of walking a lot. Brisk walkers tend to be more numerous among those who walk primarily for purposes of health and relaxation. They also have a greater numerical presence among solo walkers (unaccompanied by a dog) and males.



## 12) Walking with Others

Somewhat more than half of the respondents who walk frequently (55.4%) say they walk by themselves and without a dog (see Table 10). An additional 15.4 percent say they walk by themselves and with a dog. The remainder – approximately 30 percent – walk with at least one other person with or without a dog.

In line with expectations, those who walk solo *unaccompanied* by a dog tend to be male (61.3%), between the ages of 18-24 (73.5%), single (71.4%) or widowed (63.4%), live in the most densely populated areas (68.0%) and are the “instrumentalists” (80.8%). They also tend to be either Asian (64.5%), African-American (67.5%), or Hispanic (63.5%).

“Group walkers” (individuals who walk with at least one other person with or without a dog), by contrast, tend to be overrepresented among the “health/relaxation” walkers, live in the most sparsely populated areas, and are married. There is also a tendency among African-Americans to walk with at least two other persons. However, since their sample size was small, this last-mentioned finding needs to be viewed with caution.

Table 10. Walking with Others

Who Walks with You	Frequency	Percent
I generally walk by myself and without a dog	2956	55.4
I generally walk with one other person and without a dog	936	17.5
I generally walk with at least two other persons and without a dog	177	3.3
I generally walk by myself and with a dog	822	15.4
I generally walk with one other person and with a dog	395	7.4
I generally walk with at least two other persons and with a dog	51	1.0
Total	5337	100.0

### 13) Encouragement to Walk by Family and Friends

Both frequent and infrequent walkers were asked the extent to which they received encouragement to walk by family members and friends. Overall, 16.4 percent said they received “a great deal” of encouragement and an additional 31.4 percent said they received some encouragement (see Table 11). Not unexpectedly, a higher percentage of frequent walkers than infrequent walkers say they received “a great deal” of support for their walking habit (18.1% vs. 10.6%). As would be expected, too, a higher than average percent of frequent walkers who were accompanied by one person or by more than one person report having received “a great deal” of encouragement from family members or friends (28.3% and 34.1%, respectively). Proportionately greater social support was also received among the following categories of frequent walkers: those 65 years of age or older (24.4.%), “health/relaxation” walkers (22.2%), individuals who walk between 1 hour up to 1 and ½ hours (23.1%), and individuals who walk more than 1 and ½ hours (28.7%).

Table 11. Encouragement to Walk by Family and Friends

Extent of encouragement by family and friends	Frequency	Percent
A great deal	1148	16.4
Somewhat	2197	31.4
Not that much	1784	25.5
Not at all	1556	22.2
Do not know/Not applicable	312	4.5
Total	6997	100.0

## 14) Accessories while Walking

Both frequent and infrequent walkers were asked which, if any, accessories they used while walking. Table 12 below exhibits the percent of walkers who reported using each of these accessories. As the data show, sizable numbers report using an electronic device (56.7%) and specially-designed walking shoes (51.4%). Almost a quarter (23.2%) say they use a pedometer and 12 percent say they carry a water bottle.

Table 12. Accessories while Walking

Accessory	Percent
A cell phone, an MP3 player or other electronic device	56.7
Shoes specially designed for walking	51.4
A water bottle	23.2
A pedometer	12.7
A reflector or reflective wear (for evening use)	12.0
Walking poles	2.1
Body weights	1.4
Total	100.0

As expected, there is a strong negative relationship between age and use of an electronic device while walking. Nearly three-quarters (73.7%) of those between the ages of 18-24 use an electronic device compared to less than one-half (46.1%) of those who are 65 years of age or older. Use of an electronic device is also greater among brisk walkers (60.5%), those who walk for longer than 1 and ½ hours (64.6%), and those who walk on a treadmill at home (60.0%).

The profile of those who walk with specially-designed shoes is also distinctive. By a lopsided margin women are more likely to wear these type shoes than men (59.1% vs. 36.7%). Age is another factor related to the use of these shoes. As individuals get older, the use of these shoes increases markedly, going from just 22.3 percent of the youngest age category to 69.7 percent of the oldest age category. A third factor related to the use of these shoes is population density. Residents of the least populated areas are far more likely to use specially-designed shoes than residents of the most

populated areas (62.9% and 38.0%, respectively). Other attributes of people who are more apt to use specially-designed shoes are those who walk mainly for health or relaxation (70.3%), brisk walkers (60.8%), those who walk for either between 1 and 1 and ½ hours (72.3%) or walk longer than 1 and ½ hours (77.9%), and those who walk in a gym (74.7%), or on a treadmill at home (70.7%), or parks and forests (65.4%).

The use of water bottles and pedometers also varies considerably by orientation towards walking and by demographic attributes. Both of these accessories are much more widely used by “health/relaxation” walkers and by females. Pedometer use generally increases with age whereas use of a water bottle dips somewhat in the age categories spanning the years from 25 to 44. Use of both accessories is proportionately greatest among the oldest age category.

## **15) Other Physical Activities**

All respondents in the survey were asked about physical (or outdoor) activities they engaged in besides walking. They were presented with a list of eleven specific activities and asked to identify those which they participated in. Respondents were also given the option of identifying activities that were not on the list.

Table 13 below shows in descending order the percent of both infrequent and frequent walkers who indicated they participated in a given activity. It should be noted that infrequent walkers who replied elsewhere in the survey that the main reason they did not walk more frequently was because they were engaged in other physical activities were excluded from this analysis. This subgroup consisted of 398 individuals.

The data in the table reveal that, in general, a higher percent of frequent walkers engage in more vigorous physical activities (e.g., hiking, bicycling, physical fitness, jogging, and skiing) than infrequent walkers. (These activities are in bold print in Table 13.) This finding holds even when controlling for the age of respondents.

*As might be expected, there is a drop-off in the percent of individuals (both infrequent and frequent walkers) who participate in the more vigorous physical activities with increasing age. This trend is most pronounced*

*among those who say they jog.* Among those between the ages of 18-24, 50.2 percent report jogging. Yet among those between the ages of 45-64, the corresponding number is only 16.9 percent and among those 65 years of age or older, the figure plummets to just 6.6 percent.

The same story unfolds with respect to other activities such as bicycling and hiking, yet the declines are not nearly as steep. In fact, with respect to physical fitness activities, the decline in the number who participate in these types of activities falls only about 6 percentage points between the youngest and oldest age categories.

Another correlate of participation in physical activities besides walking is level of education. Regarding the more vigorous activities, less educated respondents are much more inactive than their more educated counterparts. For example, among those with a 4 year undergraduate degree or more education, approximately 29 percent jog compared to about 16 percent of those who have either a high school degree or less or have post high school vocational training or degree. Or, to take another example, about 57 percent of those with the most education bicycle compared to just 31 percent of those with the least education.

Table 13. Physical Activity by Type of Walker<sup>1, 2</sup>

Activity	Infrequent Walker (%)	Frequent Walker (%)	Total (%)
Gardening	53.3	54.1	53.9
<b>Hiking</b>	<b>36.1</b>	<b>56.7</b>	52.8
<b>Bicycling</b>	<b>37.4</b>	<b>56.0</b>	52.5
<b>Physical fitness (e.g., aerobics, weight lifting)</b>	<b>32.2</b>	<b>48.2</b>	45.1
Swimming	27.0	31.2	30.4
<b>Jogging</b>	<b>12.0</b>	<b>30.0</b>	26.5
<b>Skiing</b>	<b>9.0</b>	<b>16.2</b>	14.8
Team sports	11.0	10.5	10.6
Bird watching	9.1	10.3	10.1
Golf	11.4	9.7	10.0
Tennis	7.4	9.1	8.8
Yoga <sup>3</sup>	1.7	2.2	2.1
None	8.6	4.1	5.0

<sup>1</sup>Omits infrequent walkers who said that the main reason they do not walk more is because they are involved in other physical activities and do not feel the need to walk more (n = 398).

<sup>2</sup>The column percents do not add up to 100 because respondents could select more than one condition.

<sup>3</sup>Yoga was not on the pre-specified list of activities but was offered as a response under the category of “other.”

## 16) Medical Conditions

In addition to basic background questions, survey respondents were asked if they had any of nine specific medical conditions. Table 14 below lists in descending order the percent of respondents who reported having any of these conditions by whether they were infrequent or frequent walkers and, if frequent walkers, by their basic orientation towards walking.

*Viewing the data in the table shows that for six of the nine medical conditions (high blood pressure, arthritis, thinning bones, diabetes, heart*

disease, and cancer), the “health/relaxation walkers” have the highest percent saying they have this condition. For the other three conditions (being at least 15 pounds overweight, depression, or asthma), infrequent walkers report having the highest percent with these maladies. The healthiest group appears to be the instrumental walkers.

Table 14. Medical Conditions by Type of Walker\*

Condition	Walkers				Total (%)
	Infrequent Walkers (%)	Mainly for a specific destination (%)	Equally for a destination and for health (%)	Mainly for health or relaxation (%)	
Being at least 15 pounds overweight	41.9	19.5	25.9	36.6	31.8
High blood Pressure (hypertension)	18.7	7.2	12.5	19.4	15.0
Depression	12.8	9.3	9.4	7.8	9.9
Arthritis	10.9	5.2	9.2	11.8	9.6
Asthma or other respiratory diseases	8.5	8.4	9.1	7.8	8.5
Thinning bones (osteoporosis)	4.1	1.4	4.1	6.9	4.4
Diabetes	4.8	1.8	3.5	6.1	4.2
Heart disease	3.1	0.6	2.0	4.4	2.7
Cancer	1.6	0.5	1.5	2.2	1.5
None of the above	38.5	60.3	49.0	36.4	44.9

\*The column percents do not add up to 100 because respondents could select more than one condition.

One of the reasons why the “health/relaxation” walkers report having the highest incidence of many of these medical conditions is due to the differing age distributions of the four types of walkers. As an example, consider those who say they have high blood pressure. Within each of the oldest three age categories, 31-44, 45-64, and 65 plus, among the “health/relaxation walkers” the percent who report having high blood pressure is *lower* than the percent who report having high blood pressure among infrequent walkers. However, the “instrumental walkers” still report having the lowest incidence of this medical problem within each of these three age categories.

With other conditions as well (arthritis, thinning bones, and diabetes), once age is held constant, the percent of “health/relaxation walkers” who report having these conditions is either on a par or only somewhat elevated over the percent who report having these conditions among infrequent walkers. Still, the “instrumentalists” continue to have the lowest incidence of these conditions even when age is controlled for.

As was true with participation in other activities besides walking, level of education is strongly associated with the reported incidence of the nine medical conditions listed in the survey. Those with a high school degree or less or with a vocational degree or training have markedly higher reported rates of each of the medical conditions than those with a 4-year undergraduate degree or higher level of education.

*Significantly, there is a strong negative relationship between the frequency of walking and the number of illnesses.* The more an individual walks, the fewer the number of the nine medical conditions he/she reports being afflicted with. This finding holds true even when controlling for the age, sex, educational background of the individual and the economic composition and “walkability” of the neighborhood.

## **17) Reasons for Walking**

Frequent walkers were presented with a list of twelve reasons about why people might walk. The respondents were asked to indicate how important each reason was to them personally to walk. The response categories ranged from “very important,” to “somewhat important,” to “not that important,” to



“not at all important.” The percent who said “very important” are presented in descending order in Table 15 below.

It is clear that physical and emotional health figure prominently in the reasons why people choose to walk (see entries in bold print). The number one reason people cited for walking was “to maintain good health.” The second most important reason was that walking “helps me to feel calm and less stressed.” The third and fourth-ranked reasons (“walking give me more physical energy,” “walking gets me out of the house and I feel better afterwards”) are also related to physical and emotional well being.

Table 15. Reasons for Walking

Reason	Percent Who Say Very Important
<b>Walking helps me to maintain good health</b>	<b>71.1</b>
<b>Walking helps me to feel calm and less stressed</b>	<b>60.6</b>
<b>Walking gives me more physical energy</b>	<b>58.2</b>
<b>Walking gets me out of the house and I feel better afterwards</b>	<b>53.6</b>
<b>Walking helps me to maintain my weight</b>	<b>52.0</b>
Walking allows me to get to a specific destination such as work, school, or a store.	51.8
Walking gives me an opportunity to go out and explore my surroundings	47.7
<b>Walking helps me to lose weight</b>	<b>34.2</b>
Walking allows me to take care of my pet	22.4
Walking is how I get to/from transit stops	22.1
Walking gives me an opportunity to spend time with family or friends	17.0
Walking is my main form of transportation	9.7

After indicating the level of importance of each of these twelve items, respondents were asked to choose from this list the single most important reason which motivated them to walk. Respondents were also given the option of including a reason that was not part of the battery of items.

The main reasons they offered are listed in descending order in Table 16 below. Again, the most frequently cited reason people give for walking is to “maintain good health.” The other health-related reasons are not accorded

as much prominence as in Table 15 but this is probably because they are now subsumed under the reason to “maintain good health.” The second most frequent response is “walking allows me to get to a specific destination such as work, school, or school.” Overall, these data indicate that health (physical and emotional) is the primary motivator for walking among frequent walkers followed by more utilitarian reasons such as getting to a specific destination.

Table 16. Main Reason for Walking

Reason	Percent Who Say Main Reason
Walking helps me to maintain good health	29.4
Walking allows me to get to a specific destination such as work, school, or a store.	22.2
Walking helps me to feel calm and less stressed	9.2
Walking allows me to take care of my pet	8.0
Walking helps me to lose weight	5.2
Walking gives me more physical energy	4.6
Walking helps me to maintain my weight	4.6
Walking gets me out of the house and I feel better afterwards	4.4
Walking gives me an opportunity to go out and explore my surroundings	3.9
Walking is how I get to/from transit stops	2.8
Walking gives me an opportunity to spend time with family or friends	1.6
Walking is my main form of transportation	1.5
All other reasons	2.6
Total	100.0

Who are the frequent walkers who ascribe primary importance to “maintaining good health?” To answer this question, we divided up frequent walkers into two categories – those who responded “walking helps me to maintain good health” as the most important reason for walking and those who cited any other factor as the most important reason. One of the major characteristics which differentiates these two groups is age. As respondents get older, they increasingly mention “maintaining good health” as the single most important reason for walking. Relatedly, there is a strong relationship between whether or not respondents are beset with certain medical problems

and whether or not they cite “maintaining good health” as the number one reason for walking. These conditions include heart disease, diabetes, high blood pressure, thinning bones, arthritis, and cancer. Individuals who say they have one or more of these conditions are far more likely to cite “maintaining good health” as the primary reason for walking. *This finding suggests that for a significant segment of frequent walkers the words “maintaining good health” does not mean that these individuals are now in excellent physical shape and want to preserve their excellent health; rather it means that they are afflicted with one or more serious medical conditions and want to prevent a further deterioration in their health.*

After “maintaining good health,” “feeling calm and less stressed” was the next most frequently cited health-related factor motivating frequent walkers to walk. Homemakers and individuals between the ages of 31-44 or between the ages of 45-64 were more apt to cite this factor than others in the sample.

The third-ranked health-related motivating factor cited by frequent walkers was that walking “allows them to lose weight.” Those most inclined to offer this response consisted of the following subgroups: females, those in the age range of 31 to 44 or the age range of 45 to 64, African-Americans or Hispanics, individuals with less than a 4-year undergraduate degree, residents of more sparsely populated areas, “group walkers,” and individuals who are overweight, have high blood pressure, and/or diabetes.

## **18) Reasons for Not Walking**

To gauge why infrequent walkers were reluctant to walk more frequently, we presented them with a list of seven possible reasons why people might be disinclined to walk more and asked them about the extent to which each reason was personally applicable to them. The response categories ranged from “strongly agree,” to “somewhat agree,” to “somewhat disagree,” to “strongly disagree.”

In Table 17 below are listed the seven reasons rank-ordered by the percent who strongly agreed with each reason. Topping the list of reasons is that respondents are “involved in other physical activities and do not feel the need to walk more.” In second place are neighborhood-related factors such as “not enough sidewalks” or “speeding motor vehicles.” Following closely behind in third and fourth place are personal level factors such as lack of

time or energy. What is noteworthy here is that an expression of total disinterest in walking is near the bottom of the list. Only 6.9 percent of the infrequent walkers agreed strongly with the statement “I am just not that enthusiastic about walking more.”

Table 17. Reasons for Not Walking

Reason	Percent Who Respond Strongly Agree
I am involved in other physical activities and do not feel the need to walk more	16.9
In my neighborhood things like not enough sidewalks or speeding motor vehicles discourage me from walking more	13.3
I do not have time to walk more	12.8
With things like work or family responsibilities, I do not have the energy left to walk more	10.8
There are not many desirable places nearby in which to walk	10.6
I am just not that enthusiastic about walking more	6.9
The level of crime in my neighborhood discourages me from walking more	2.4

We next asked the infrequent walkers to choose from the seven reasons listed in the table above the single most important reason why they are not disposed towards walking more. They also had the option of providing a different reason not on the list. Table 18 below lists in descending order the main reasons they offered.

While being involved with other activities still heads the list, lack of energy and time now place slightly ahead of neighborhood-related factors. Also, lack of enthusiasm for walking moves to fourth place on the list instead of sixth place.

Table 18. Main Reasons for Not Walking

Reason	Percent Who Say Main Reason
I am involved in other physical activities and do not feel the need to walk more	22.1
I do not have time to walk more	21.7
With things like work or family responsibilities, I do not have the energy left to walk more	16.3
I am just not that enthusiastic about walking more	10.7
In my neighborhood things like not enough sidewalks or speeding motor vehicles discourage me from walking more	8.3
There are not many desirable places nearby in which to walk	5.8
The level of crime in my neighborhood discourages me from walking more	0.9
All other reasons	14.2
Total	100.0

The reason given by some infrequent walkers that they are “involved in other physical activities and do not feel the need to walk more” is not simply a convenient rationalization for not walking more. On a whole range of physical activities (particularly jogging, cycling, physical fitness), those who say they are involved in other physical activities are indeed far more active than other infrequent walkers. In fact, they surpass *frequent walkers* in their level of participation of physical activities.

The profile of those who say “they do not have time” as the main reason for being reluctant to walk more is not very distinctive. These respondents appear to share a number of demographic characteristics with other infrequent walkers who did not give this response. They are somewhat more likely to be married and to fall within the age range of 31-44 but even these differences are slight.

The third most frequently mentioned main reason for not walking more by infrequent walkers is that, after taking care of work and family responsibilities, people do not have energy left to walk more. Notably, married females, but not married males, tend to be overrepresented among those who offer this response. Other subgroups which have a higher-than-average proportion giving this response are individuals who are less educated, live in lower income areas, and reside in the least populated areas.

These respondents also are considerably more likely to have a number of health problems than others in the sample. *Particularly noteworthy is that they are far less likely to be engaged in other types of physical activities than frequent walkers and even other infrequent walkers.*

Ranking fourth among the main reasons given for a reluctance to walk is a basic lack of enthusiasm for walking more. Similar to those who say they lack energy for walking more, these individuals also tend to be less educated and have a greater number of serious health problems than other infrequent walkers. They also are noticeably less likely to participate in other physical activities than other infrequent walkers.

The fifth and sixth place reasons for not walking more revolve around the infrastructure of the communities in which the infrequent walkers live. The most noticeable characteristic of respondents who cite infrastructure problems as the main reason they do not walk more is their younger age. As the age of the infrequent walkers increases, the emphasis placed on infrastructure problems diminishes considerably.

## **19) Pedestrian Safety Problems**

Survey respondents were asked to indicate the extent to which each of nine items posed a problem in terms of pedestrian safety in their neighborhoods. The response categories ranged from “very big problem,” to “somewhat of a problem,” to “only a small problem,” to “not a problem at all.”

Listed in descending order in Table 19 below is the percent who said a given item was a “very big problem” or “somewhat of a problem.” Topping the list was distracted drivers. More than a quarter of all respondents indicated inattentive drivers were a serious problem facing pedestrians in their neighborhoods. Trailing closely behind was another automobile-related item – speeding motor vehicles. The next two items concerned the scarcity of sidewalks or unsmooth walking surfaces. Though not on the list of problems in the survey, several respondents mentioned in the open-ended “comments” section of the survey that cyclists who disobeyed traffic laws also posed a hazard to pedestrians.

Table 19. Safety Problems for Pedestrians

Problem	Percent Who Say Very Big Problem	Percent Who Say Somewhat of a Problem	Total Percent
Drivers talking on cell phones or using other electronic devices	26.5	27.7	54.2
Speeding motor vehicles	22.9	30.3	53.2
Unsmooth sidewalks or other walking surfaces	13.4	24.7	43.4
Not enough sidewalks	18.7	20.7	39.4
Poorly-lit streets	10.7	22.6	33.3
The sidewalks are too narrow	6.8	16.5	23.3
The Walk Signs or street signals do not give me Enough time to walk across the street safely	5.5	12.6	18.1
Crime	3.4	10.1	13.5
Dogs or other animals	3.4	9.7	13.1

Coinciding with expectations, the percent who report a given problem as being serious varies by the type of neighborhood in which the respondent lives. Residents of the most densely-populated areas are significantly more likely to indicate that distracted drivers, speeding motor vehicles, and crime are “very big problems.” Oppositely, residents of the least-populated areas are much more likely to indicate that too few sidewalks, unsmooth walking surfaces, poorly-lit streets, and dogs constitute “very big problems.” Also residents of lower income areas, with the exception of the two automobile-related items, are more likely to view the other seven pedestrian safety items as being more serious than residents of more affluent areas.

Interestingly, the “instrumental walkers” and the “hybrid walkers” were far more concerned about both distracted drivers and speeding motor vehicles than either the “health/relaxation walkers” or the infrequent walkers. This finding persists even when controlling for the population density of the neighborhood in which they reside.

In conjunction with the nine items relating to pedestrian safety, we asked respondents whether they had “ever been hit by a car or truck” or whether they had “ever been hit by a cyclist.” All together, 6.1 percent of the

respondents reported that they had been hit by a car and 4.8 percent report having been struck by a cyclist.

The proportion of those saying they have been hit by a car *decreases* with age. Alternatively, the proportion *increases* as the population density of the area in which the respondent resides goes up. Males and those whose basic orientation towards walking is mainly to get to a specific destination (the “instrumentalists”) or equally to get to a specific destination and for purposes of health and relaxation (the “hybrids”) are more likely to report having been hit by a car than those whose primary purpose in walking is for health and relaxation.

Similar to those who say they have been hit by a car, there is a positive relationship between population density and the percent of those who say they have been struck by a cyclist. As the population of an area becomes increasingly concentrated, more people say they have been struck by a cyclist. However, age is now curvilinearly related to saying one has been hit by a cyclist. Among the youngest age category (18-24) and the oldest age category (65 years or older), there is a greater percent reporting being hit by a cyclist than among the age categories falling in the middle. Finally, those who describe their walking pace as “brisk” are more likely to say they have been hit by a cyclist.

## **20) Walkability of Neighborhoods**

To measure the effect of the walkability of the neighborhood on respondents’ walking attitudes and habits, we asked a set of three questions about perceptions concerning the walkability of their neighborhood. These three questions were taken from the Neighborhood Environment Walkability Scale (NEWS) designed by Professor Jim Sallis of San Diego State University. The three items consisted of the level of agreement (ranging from “strongly disagree” to “strongly agree”) with the following statements:

- 1) There are many places to go within easy walking distance of my home.
- 2) It is easy to walk to a transit stop (bus, train, subway) from my home.



- 3) There are many interesting things to look at while walking in my neighborhood.

After the third week of the survey, we inserted two additional items from the NEWS. These items were:

- 4) Stores are within easy distance of my home.
- 5) There are many alternative routes for getting from place to place in my neighborhood. (I don't have to go the same way every time.)

Importantly, each of these five items was strongly related to each other. This means that they are essentially measuring the same underlying dimension.

Since we had responses for the first three items of the NEWS Scale for the entire sample, we used these three items to create a composite measure of the walkability of the neighborhoods in which the respondents lived. This composite measure was created by first assigning scores ranging between 1 to 4 to each of the three items. A score of "1" indicated that the respondent "strongly disagreed" with a given statement and a score of "4" meant that a respondent "strongly agreed" with a given statement. We then conducted a principal components factor analysis which extracted one factor and generated factor scores for each respondent. We next recoded the factor scores into three categories based on the frequency distribution of the scores (i.e., each category had approximately one-third of the cases falling within it). The three categories were labeled "low walkability," "medium walkability," and "high walkability" corresponding to the degree to which respondents perceived their neighborhoods to be walkable.

*People who live in more walkable neighborhoods tend to walk more.* In Table 20 below is a crosstabulation between the extent to which a neighborhood is perceived as walkable or not (based on our composite measure of the three items from the NEWS scale) and whether a respondent walks frequently or infrequently. The table shows that 88.1 percent of individuals who live in the most walkable neighborhoods are frequent walkers compared to just 64.9 percent of individuals who live in the least walkable neighborhoods.

Table 20. Frequency of Walking by Walkability of Neighborhood\*

Frequency of walking		Walkability of Neighborhood			Total
		Low walkability	Medium walkability	High walkability	
	infrequent walker	35.1%	22.0%	11.9%	22.7%
	frequent walker	64.9%	78.0%	88.1%	77.3%
Total		100.0%	100.0%	100.0%	100.0%

\* Omits 62 individuals who said that currently they could not walk because of physical impairments.

One could argue that these findings are an artifact of the degree of urbanization of a neighborhood. That is to say, it may simply be the case that in more urban areas there are “many places to go within easy walking distance,” easy access to transit stops, and many interesting things to see. If so, perhaps the relationship noted above between the perceived walkability of a neighborhood and the frequency of walking is due to how urbanized an area is.

To test to see if the relationship between the walkability of a neighborhood and the frequency of walking is a spurious one or not (owing to the degree of urbanization), we replicated the above analysis for three different levels of population density – low, medium, and high.

The results are displayed in Table 21 below. The data show clearly that the bi-variate relationship noted above in Table 20 is not due to the degree of urbanization. *Within each level of population density (low, medium, and high), the proportion of frequent walkers increases as the perceived walkability of the neighborhood goes from low to high. This means that the walkability of a neighborhood is not determined by the degree of urbanization of a neighborhood. Within different rural, suburban, and urban areas there are neighborhoods that are more or less walkable.*

Table 21. Frequency of Walking by Walkability of Neighborhood and Population Density\*

Population Density			Walkability of Neighborhood			Total
			Low walkability	Medium walkability	High walkability	
Lowest third	Frequency of walking	infrequent walker	35.8%	24.4%	18.1%	30.4%
		frequent walker	<b>64.2%</b>	<b>75.6%</b>	<b>81.9%</b>	69.6%
	Total		100.0%	100.0%	100.0%	100.0%
Middle third	Frequency of walking	infrequent walker	34.8%	23.7%	12.3%	24.7%
		frequent walker	<b>65.2%</b>	<b>76.3%</b>	<b>87.7%</b>	75.3%
	Total		100.0%	100.0%	100.0%	100.0%
Highest third	Frequency of walking	infrequent walker	33.0%	17.5%	10.6%	14.9%
		frequent walker	<b>67.0%</b>	<b>82.5%</b>	<b>89.4%</b>	85.1%
	Total		100.0%	100.0%	100.0%	100.0%

\* Omits 62 individuals who said that currently they could not walk because of physical impairments.

Other research findings have indicated that when there are changes in the “built environment” conducive for walking, more people walk. These findings from other research studies are based on increases in “pedestrian counts.” The findings from this survey indicate that *the same people walk more frequently in more walkable communities.*

The relationship between the walkability of a neighborhood and the frequency of walking could be bi-directional. In other words, people who are disposed towards walking might move to a neighborhood because it is more walkable. On the other hand, people who are not necessarily more disposed towards walking might walk more simply because they are situated in a more walkable neighborhood. We believe that both factors are operative here. Future research could be conducted to disentangle these two factors and try to determine which causal path is stronger.

Not only do respondents in more walkable neighborhoods walk more, they also say they engage in a greater number of physical activities in general. Table 22 below displays the number of physical activities respondents report engaging in (besides walking) by the walkability of their neighborhoods.

Table 22. Number of Physical Activities Besides Walking by Walkability of Neighborhood

Number of Activities		Walkability of Neighborhood			Total
		Low walkability	Medium walkability	High walkability	
0-2 activities	Count	865	749	640	2254
	Percent	44.2%	36.4%	30.7%	36.9%
3 or more activities	Count	1091	1311	1446	3848
	Percent	55.8%	63.6%	69.3%	63.1%
Total	Count	1956	2060	2086	6102
	Percent	100.0%	100.0%	100.0%	100.0%

These results suggest that walkable neighborhoods not only encourage walking but also encourage physical exercise in general. This finding holds true even when controlling for a number of demographic variables such as age, sex, education, frequency of walking, and population density.

Walkable neighborhoods furthermore are characterized by respondents who say they have fewer negative medical conditions. The relationship between the incidence of a number of negative medical conditions reported by respondents and the walkability of their neighborhoods is shown in Table 23 below.

Table 23. Number of Negative Medical Conditions by Walkability of Neighborhood

Number of Negative Medical Conditions		Walkability of Neighborhood			Total
		Low walkability	Medium walkability	High walkability	
0	Count	772	972	1171	4
	Percent	39.4%	47.1%	56.1%	
1	Count	639	639	579	3
	Percent	32.6%	31.0%	27.7%	
2 or more	Count	547	451	337	2
	Percent	27.9%	21.9%	16.1%	
Total	Count	1958	2062	2087	10
	Percent	100.0%	100.0%	100.0%	

As was the case with number of physical activities, the relationship between the incidence of negative medical conditions of respondents and the walkability of their neighborhoods persists even when partialling out the effects of other variables such as age, sex, and level of education.

## 21) Walking to School

In the survey we asked respondents if they had any children living at home who were attending an elementary school (grades K thru 8) which was within a two mile distance of their home. For respondents who said yes to this question, we then asked them what type of transportation their child (children) used to get to the elementary school. There were 775 respondents in the survey who said they had school age children living with them who attended an elementary school within a two mile radius.

Table 24 below shows the frequency distribution of types of transportation the children of these respondents use to get to school.

As the data in the table indicate, almost a third of the children are driven to school in an automobile, about one-quarter walk to school, and one-fifth ride

to school in a school bus or van. Only a small fraction (3.6%) ride to school on their bicycles.

Table 24. Type of Transportation Used by School-Age Children of Respondents in the Survey

Type of Transportation	Percent
Automobile	31.4
Walking	23.5
School bus/van	20.4
Child (children) uses a combination of means	14.8
Bicycle	3.6
More than one child in elementary school and they use different means of transportation	2.8
Public transportation	1.7
Other	1.7
Total (percent)	100.0%
Total (number)	(775)

We next crosstabulated the mode of transportation to school by the walkability of the neighborhood. To measure walkability of the neighborhood, we again employed our composite score based on items from the NEWS scale. The results are exhibited in Table 25 below.

*The data provide striking evidence of the impact of the walkability of the neighborhood on the means by which children arrive at school. The use of both the automobile or school bus/van declines considerably as the neighborhood becomes more walkable. Oppositely, both walking and bicycling increase substantially as the neighborhood becomes more walkable.*

Table 25. Type of Transportation to School by Walkability of Neighborhood

Type of Transportation to School	Walkability of Neighborhood			Total
	Low walkability	Medium walkability	High walkability	
Automobile	38.3%	32.3%	17.2%	29.4%
School bus/van	25.7%	20.4%	9.9%	18.7%
Bicycle	1.5%	4.4%	5.9%	3.9%
Walking	17.0%	21.7%	40.4%	26.1%
All else	17.5%	21.2%	26.6%	21.7%
Total	100.0%	100.0%	100.0%	100.0%

We also looked at the relationship between the frequency of walking on the part of parents and the type of transportation used by children to get to school. The results are displayed in Table 26 below. *The data show that children are much more apt to walk to school if their parents are frequent walkers than if their parents are infrequent walkers.*

Table 26. Type of Transportation to School by Frequency of Walking of Parents\*

Type of Transportation to School	Frequency of Walking of Parents		Total
	Infrequent walker	Frequent walker	
Automobile	45.5%	26.4%	31.3%
School bus/van	22.5%	19.6%	20.3%
Bicycle	3.0%	4.0%	3.8%
Walking	16.0%	26.2%	23.6%
All else	13.0%	23.8%	21.0%
Total	100.0%	100.0%	100.0%

\* Omits parents who said that currently they could not walk because of physical impairments.

Above we have found that both the walkability of the neighborhood and the frequency of walking of parents influence the walking habits of school-age children. We would expect this to be the case since both the walkability of the neighborhood and the frequency of walking of the parents are related. In Table 27 below we examine the combined effect of the frequency of the walking of the parents and the walkability of the neighborhood the mode of transportation of kids to school.



Table 27. Type of Transportation to School by Frequency of Walking of Parents and the Walkability of the Neighborhood

Walkability of the Neighborhood			Frequency of Walking of Parents		
			Infrequent walker	Frequent walker	Total
Low walkability	Type of transportation	Automobile	46.3%	33.3%	38.5%
		School bus/van	20.7%	28.5%	25.4%
		Bicycle	1.2%	1.6%	1.5%
		Walking	15.9%	17.9%	17.1%
		All else	15.9%	18.7%	17.6%
	Total		100.0%	100.0%	100.0%
Medium walkability	Type of transportation	Automobile	52.0%	26.9%	32.4%
		School bus/van	20.0%	20.6%	20.4%
		Bicycle	4.0%	4.6%	4.4%
		Walking	14.0%	24.0%	21.8%
		All else	10.0%	24.0%	20.9%
	Total		100.0%	100.0%	100.0%
High walkability	Type of transportation	Automobile	24.1%	16.1%	17.2%
		School bus/van	17.2%	8.6%	9.9%
		Bicycle	6.9%	5.7%	5.9%
		Walking	37.9%	40.8%	40.4%
		All else	13.8%	28.7%	26.6%
	Total		100.0%	100.0%	100.0%

The data in the above table have to be treated with a degree of caution because of the relatively small number of cases of infrequent walkers among parents in each of the three types of neighborhoods. With this caveat in mind, the data reveal that in “low,” “medium,” and “high” walkability neighborhoods, the more the parents walk, the more the children walk to school. However, the effect of parents’ frequency of walking on children who walk is small in “low” and “high” walkability neighborhoods. Only in the “medium walkability” neighborhoods is the effect a sizable one. The more important influence on the percent of kids who walk appears to be the extent to which the neighborhood is walkable.

The data in the above table also sustain the finding observed beforehand that the more the parents walk, the less the automobile is used to transport kids to school. This finding appears to hold in all three types of walkable communities.

## **Summary and Conclusions**

While there are a number of reasons why people walk, the overriding reason cited by frequent walkers in this large-scale survey was related to health. More than any other factor, “maintaining good health” was mentioned as the single most important motivator. Other health-related factors such as “walking gives me more physical energy,” or “walking makes me feel calm and less stressed,” or “walking helps me to maintain my weight” also figure prominently in the decision on the part of respondents to walk.

This finding is significant. At a time when all sorts of products on the market (e.g., snack foods, personal care products, supplements, etc.) are extolling their health virtues and promoting their life-enhancing qualities, walking has been demonstrated unequivocally to be a natural way to promote and maintain one’s physical and emotional health. And the respondents in this survey know this to be the case.

*Significantly, this study has found that the more frequently an individual walks, the fewer the number of diseases a respondent reports being afflicted with. Even when controlling for the age, sex, educational background of the respondent and the economic composition and “walkability” of the*

neighborhood, this findings persists. While it might be the case that healthier people walk more, it is also undoubtedly the case that walking more produces healthier people.

Yet despite the beneficial effects of walking (and the ever increasing body of scientific evidence showing how critically important walking is to prevent illness and restore health), many people in the larger population are not aware of its salutary effects or, if they are aware, are not motivated to walk. This study has found that, at least among avid walkers, about three-fifths decided to walk on their own initiative. Only 6.6 percent mentioned they heard or read about the benefits of walking through the media. An even smaller percent (4.0%) said that a health care professional encouraged them to walk. *Moreover, even among those with serious medical conditions, only a small proportion said that a health care professional originally advised them to walk.* For example, among those with high blood pressure, only 10.2 percent reported that they received initial encouragement to walk from a health care professional. The corresponding figures for those with heart disease was 16 percent and for those with arthritis, 6.7 percent. Only with respect to those respondents with diabetes did a sizable proportion receive initial encouragement to walk from a health care professional (21.6%). But even in this case, 44.2 percent of all those with this medical condition decided to walk on their own initiative.

Within this context it is important to note that significant numbers of respondents (particularly the “health/relaxation” walkers) report having a serious medical condition. Among those whose basic orientation towards walking is for purposes of health and relaxation, fully 36.6 percent say they are at least 15 pounds overweight, 19.4 percent say they suffer from hypertension, and 11.8 percent have an arthritic condition. When respondents in this survey report that the main reason they walk is to “maintain good health,” for a sizable bloc of these respondents “maintaining good health” does not mean preserving excellent or good health; it means preventing a further deterioration in one’s health.

The findings above suggest that greater efforts need to be expended to publicize the multiple benefits of walking – especially as they pertain to not just avoiding further physical decline but also to prevent illness from occurring in the first place. Health care professionals, journalists, and manufacturers of walking-related consumer products (e.g., specially-

designed walking shoes, pedometers, etc.) all need to trumpet much louder the benefits of walking.

Publicizing the benefits of walking by itself will not necessarily induce people to walk more. Two barriers need to be overcome: 1) a psychological resistance towards walking and 2) a re-structuring or development of neighborhoods that are more conducive to walking. In this study, we found that only a small minority of *infrequent walkers* said that they were “just not that enthusiastic about walking more” (10.7%). Other infrequent walkers cited factors such as the lack of time or lack of energy after trying to fulfill family and work responsibilities as reasons for not walking more. While these reasons may be just excuses for not walking more, it may be the case that these infrequent walkers need to learn how to integrate walking into their everyday routines so it is not viewed as a “disruptive” activity which takes away from their time or depletes their store of energy.

Importantly, a considerable bloc of infrequent walkers (15.0%) say that neighborhood-related factors (as opposed to personal-level factors) are the *main reasons* why they don't walk more. They cite factors such as not enough sidewalks, speeding motor vehicles, not many desirable points of destination to walk to, and crime as being primary deterrents for not walking more. A large proportion of infrequent walkers (22.1%) assert the reason they don't walk more is because they are involved in other physical activities. If this subset of infrequent walkers were omitted from the analysis, then the proportion of infrequent walkers who say they don't walk more because of neighborhood-related factors would increase to almost a fifth of the total (19.3%).

In this same context, a number of neighborhood-related factors are viewed as significant problems which compromise pedestrian safety for *both frequent and infrequent walkers*. As this study has revealed, well over half of the respondents (54.2%) cited “drivers talking on cell phones or using other electronic devices” as being either a “very big problem” or “somewhat of a problem.” All too often distracted drivers have been depicted as posing a menace to other drivers. Campaigns against distracted driving should also focus attention on the plight of pedestrians. This is particularly important in light of recent statistics showing that during the years from 2000 to 2009, the mortality rate of motorists and their passengers has fallen nearly twice as much as the mortality rate of pedestrians involved in automobile-related accidents.

More than half of the respondents (53.2%) also said that “speeding motor vehicles” was either a “very big problem” or “somewhat of a problem.” (Recall too that over 6 percent of respondents reported having been hit by a car.) More resources have got to be expended to protect pedestrians from motorists who flout the traffic laws through stiffer fines imposed on these motorists.

In terms of improving the physical infrastructure of communities to promote pedestrian safety, respondents, by large numbers, decried the unsmooth sidewalks or other walking surfaces (43.4%), lack of sidewalks (39.4%), poorly lit streets (33.3%), and too narrow sidewalks (23.3%). Among various subgroups of respondents, these percentages swelled even more.

What is important to bear in mind is that if greater numbers of people become more cognizant of the benefits of walking and are imbued with the motivation to walk, they need to have a safe and secure environment in which to walk. Otherwise, their motivation will be diluted by safety concerns.

The above results are buttressed by a key finding in this study. Neighborhoods that are more “walkable,” (e.g., have many places to go to in easy walking distance, are accessible to transit stops, have interesting things to look at while walking) have a greater number of people who walk more frequently. Furthermore, not only do people in more walkable neighborhoods walk more, they engage in a greater number of physical activities besides walking. And respondents in these neighborhoods also report having fewer negative medical conditions. Even when statistically controlling for a battery of demographic variables such as age, sex, and educational background, respondents in more walkable neighborhoods are still more physically active and less likely to suffer from a number of medical maladies. In short, neighborhood walkability matters. Greater efforts need to be expended to create or reconfigure existing neighborhoods that are more conducive for walking in order to reap the multiple health benefits associated with walkable neighborhoods.

Importantly, those who say they walk *every day* tend to be those whose basic orientation towards walking is either to get to a specific destination (the “instrumental walkers”) or equally to get to a specific destination and for purposes of health and relaxation (the “hybrid walkers”). These two groups – more so than those who walk mainly for purposes of health and relaxation – tend to live in more walkable communities. They not only have specific destinations to walk to (e.g., work, school, or a store); they can get to those destinations by walking.

Relatedly, this study has shown that walkability is not equatable with population density. Respondents in this survey come from rural areas, small towns, suburbs, and medium and large-size cities. What determines how often these respondents walk is not the population density of their neighborhoods, but rather the walkability of their neighborhoods. Rural areas, towns, cities, and suburbs can each have neighborhoods that are walkable or not that walkable, and that is what shapes respondents’ walking behavior.

Finally, this analysis has demonstrated that school children tend to walk more if two factors are operative. First, if their parents walk more, the children walk more and the parents drive less. Second, if the children live in a more walkable community, they also walk more. Taken together, though, these two factors are even more potent. Children whose parents are frequent walkers AND who also live in a more walkable community are considerably more likely to walk to school than if only one of these influences is present. Of course, having children walk to school has multiple benefits. It removes the burden of parents having to drive them to school and thereby reduces traffic congestion. It helps the environment. It saves taxpayers money that would otherwise have to be spent on school buses or vans. It helps combat childhood obesity and related diseases such as diabetes. And, perhaps most importantly, it instills in individuals at an early age the joy of walking which, hopefully, is impressed upon them and retained by them as they grow older.