

# Profile of physical activity in daily life in physically independent elderly men and women

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## Abstract

This study compared the profile of daily activities and variables of functional fitness between elderly men and women, as well as the relation of their time spent walking per day with the remaining study variables concerning each gender. Thirty healthy elderly (15 men;  $66 \pm 6$  years), sedentary and physically independent, had their daily activities evaluated objectively by a multi-axial accelerometer as well as their metabolic and functional fitness variables by means of specific protocols. Both men and women presented similar time spent in walking per day, even though men had higher intensity during walking. Women spent longer time standing, and men, sitting. A better performance was achieved by men in most physical tests in regard to absolute values but not in relative values. In conclusion, despite their different patterns of daily activities, elderly men and women do not differ in time spent walking per day.

UNITERMS: Activities of daily living; Gender; Aged; Walk.

## Introduction

The capacity to continue performing daily activities during old age is one of the main concerns of professionals working in the field of aging (HUEY-TZY, CHIEN-HSUN & LI-HUI, 2009), since good physical fitness and ability to perform activities of daily living are related to autonomy, better health and better subjective perception of well-being (WERNGREN-ELGSTRÖM, CARLSSON & IWARSSON, 2009). Based on such evidence, scientific interest in the objective quantification of daily activities performed by the elderly has increased, since the detailed knowledge of these activities allows better understanding of how elderly subjects can reach and maintain the standards of physical activity recommended by the American College of Sport Medicine necessary for health (30 minutes of moderate activity five times per week) (CHODZKO-ZAJKO, PROCTOR, FIATARONE-SINGH, MINSON, NIGG, SALEM & SKINNER, 2009). Among the variables involved in daily activities, the walking stands out

because it is involved in both self-care tasks and in activities requiring more ample movement, such as doing the housework or shopping (TUDOR-LOCKE, VAN DER PLOEG, BOWLES, BITTMAN, FISHER, MEROM, GERSHUNY, BAUMAN & EGERTON, 2007).

Studies have suggested that the amount of physical activity in daily life tends to decrease with age and may differ between genders (JOHANNSEN, DELANY, FRISARD, WELSCH, ROWLEY, FANG, JAZWINSKI, RAVUSSIN & LOUISIANA HEALTH AGING STUDY, 2008; STRYCKER, DUNCAN, CHAUMETON, UNCAN & TOOBERT, 2007). Nevertheless, many aspects of this supposition are still unsupported by conclusive evidence (e.g., the comparison between the patterns of daily activity and the characteristics of functional fitness between the genders).

Most earlier studies, in attempting to quantify the daily physical activity of the elderly, have employed either questionnaires based on memory, which merely provide a subjective evaluation (BRACH,

SIMONSICK, KRITCHEVSKY, YAFFE & NEWMAN, 2004; REIS, MACERA, AINSWORTH & HIPP, 2008) Or Pedometers (CAVANAUGH, COLEMAN, GAINES, LAING & MOREY, 2007; STEL, SMIT, PLUIJM, VISSER, DEEG & LIPS, 2004), a type of movement sensor whose results are limited to the number of steps performed daily. In both cases, the instruments lack accurate and relevant information for a more detailed knowledge of daily activities. Studies are rare in which healthy elderly adults perform daily activities under real-life conditions using a multi-axial accelerometer, that despite some limitations as not measuring the activities involving the upper limbs and be an expensive equipment, a more technologically advanced and non-invasive tool that is just as accurate as video recordings (HARTMANN, LUZI, MURER, BIE &

BRUIN, 2009; PITTA, TROOSTERS, SPRUIT, DECRAMER & GOSSELINK, 2005a). Is important to note that detailed knowledge about an individual's daily activity pattern, especially regarding the time spent in locomotion, is relevant for physiologists, public health policy makers, and clinicians (TUDOR-LOCKE & MYERS, 2001), so that efficient strategies may be created for behavior change where necessary. Therefore, the primary aim of this study was to compare the levels of daily activity and variables of functional fitness and anthropometrics, among elderly, sedentary and physically independent men and women. Secondly, the study aimed at analyzing the relationship between time spent in locomotion per day (i.e., walking) and variables of functional fitness and anthropometrics in both genders.

## Method

### Participants

Thirty-three retired elderly individuals (17 men and 16 women) were recruited by convenience upon announcement of the study in two universities and in two basic health care units in the city of Londrina, Brazil. The criteria for inclusion were: age over 60 years; normal lung function; complete independence for daily activities; not having taken part in any regular physical activity during the previous twelve months either in an autonomous or supervised way; absence of severe comorbidities that would prevent completion of the tests, including pre-diagnosed incapacitating cardiac, metabolic or orthopedic diseases.

Exclusions would comprise individuals unfit for the tests due to cognitive or physical reasons, as well as those who decided to quit for any reason. Three subjects were excluded from the sample because they were not able to complete part of the proposed evaluations. Thus, thirty individuals (15 men and 15 women) completed the study.

### Experimental design

All subjects, upon being informed of the objectives and procedures of the study, signed a free and informed term of consent. The study was approved by the Committee for Ethics in Human Research of the Universidade Norte do Paraná with resolution number 196/96 and protocol number PP 0028/08.

### Procedures

#### Evaluation of general health condition

Socio-demographic data and the presence of pre-diagnosed and non-limiting comorbidities such as cardiovascular, respiratory, metabolic and endocrinal diseases were obtained by a questionnaire/interview.

#### Objective monitoring of daily activities

The DynaPort® (McRoberts, Holland) is a small (375 grams) multi-axial accelerometer that is attached to a belt worn around the waist and features a lower-limb movement sensor that is fixed to the upper third of the left thigh. The instrument records the time spent per day in different activities and positions (e.g. time spent walking) just as accurately as video recordings (PITTA et al., 2005a) and is currently considered the state-of-the-art in activity monitoring. The equipment also records the time spent standing (i.e., standing with no locomotion), sitting and lying as well as the intensity of movement during the time spent walking. DynaPort was used for two consecutive days, twelve hours a day, beginning in the morning after getting of the bed, and the average of the values from both days was used for analysis. The participants were frequently reminded to keep their normal pattern of daily activities during the assessment days.

## Anthropometric characteristics

Body mass was measured by a Filizola digital platform scale (model ID 110), with 0.1 kg precision. Height was determined by a wooden stadiometer, with 0.1 cm precision, in accordance with procedures described by GORDON, CHUMLEA and ROCHE (1988). Body mass index (BMI) was determined with the following formula: body mass divided by height squared ( $\text{kg}/\text{m}^2$ ).

## Shuttle Walk Test (SWT)

The SWT, proposed by SINGH, MORGAN, SCOTT, WALTERS and HARDMAN (1992), evaluates the subject's maximal exercise capacity. It consists of walking 10 meters with increased speed every one minute (stage). The speed of each stage is marked by a sound signal. At every stage transition, the subjects are asked to increase their speed to keep up with the imposed timing in order to complete the 10-meter objective. The test ends when the subject can no longer maintain the speed required for a given stage, and does not reach the 10-meter mark on time. The peak of oxygen consumption ( $\text{VO}_{2\text{max}}$ ) was estimated from the total distance and according to the formula suggested by LEGER, MERCIER, GADOURY and LAMBERT (1998). The analysis was based on the percentage of the predicted values for men and women according to the formula proposed by BRUCE (1984).

## 6-Minute Walk Test (6MWT)

The 6MWT evaluates the subject's functional exercise capacity and was performed in accordance with the guidelines of the AMERICAN THORACIC SOCIETY (2002). The analysis was based on the percentage of reference values predicted for men and women according to TROOSTERS, GOSSWELINK and DECRAMER (1999).

## Sit-and-Reach Test

This test, which evaluates the flexibility of the lumbar column and isquiotibials, was performed according to the standards set by LEMMINK, KEMPER, GREEF, RISPENS and STEVENS (2003).

## Hand grip force

Hand grip was evaluated with manual dynamometry (Takei, Kiki, Kogyo, Japan) using the protocol proposed by VIANNA, OLIVEIRA and ARAÚJO (2007).

The analysis was based on the percentage of reference values predicted for men and women by MATHIOWETZ, KASHMAN, VOLLAND, WEBER, DOWE and ROGERS (1985).

## Evaluation of functional fitness

Physical characteristics in situations similar to daily tasks were measured with the following tests:

30-s chair stand test. Standardized by JONES, RIKLI and BEAM (1999), this test requires the subject to sit down in and stand up from a chair as fast as possible for 30 seconds with the hands crossed over the chest.

Agility/dynamic balance test. The test proposed by the American Alliance for Health, Physical Education, Recreation & Dance (AAHPERD) (OSNESS, ADRIAN, CLARK, HOEGER, RAAB & WISWELL, 1990), consists of standing up from a chair and moving as fast as possible around two cones.

One Leg Balance Test. The test proposed by GREENE, WILLIAMS, MACERA and CARTER (1993), in a 30-second window, the longest time that the subject can stand on one dominant leg.

The objective monitoring of the daily activities was carried out for two complete days, whereas the other evaluations were performed on two other days (in the morning). On the first day, the body mass and height of the subjects were measured and they performed the 6MWT twice, at least 30 minutes apart. On the second day, the participants performed the physical-motor tests in a random order and, subsequently, performed two repetitions of the SWT, at least 30 minutes apart. All evaluations were carried out by the researchers DCT and NAH. The test repetitions of each participant were assessed by the same researcher.

## Statistical analyses

Data were analyzed using Graphpad, version 5.0, Statistics Pack (GraphPad Software, San Diego, CA, USA). The normality of data distribution was evaluated with the Kolmogorov-Smirnov test, and the descriptive results were presented as mean and standard deviation. In order to compare men and women, the following variables were analyzed with the non-parametric Mann-Whitney test due to the non-normal characteristics in the data distribution: balance, agility, time spent lying down per day and number of comorbidities. All other variables were compared using Student's unpaired t-test. Correlations between time spent walking per day and the abovementioned non-normally distributed variables were analyzed with the Spearman correlation

coefficient, whereas all other correlations were evaluated with the Pearson correlation coefficient. Statistical significance was set at 5%.

The power of the study was estimated by the difference in values reached in the 6MWT by men and women, as previously described in the literature

(BAUTMANS, LAMBERT & METS, 2004). Taking into account a level of significance of 5% and the use of a two-sided test, the inclusion of 30 individuals provided a probability of 84% for detecting a difference between men and women in the 6MWT, considering that the mean difference in this study was 60 meters.

## Results

The descriptive and comparative results between men and women regarding age, anthropometric variables, number of comorbidities and variables relating to time spent walking and time spent in different body positions per day are shown in TABLE 1. There was no significant age difference between the groups. Women had more self-reported comorbidities and significantly higher values of BMI than men. Concerning daily physical activities, no significant difference was found between men and women for time spent walking per day, despite the fact that men had a higher intensity of movement during walking. Women spent more time standing whereas men spent more time sitting. There was no statistically significant difference in time spent lying down for both genders. The percentages of time

spent in walking, standing, sitting and lying down per day for both groups are shown in FIGURE 1.

Also in TABLE 1 demonstrates that although men walked farther than women in the 6MWT in terms of absolute values (meters), there was no difference regarding the percentage of predicted values. Similarly, for absolute values of SWT and  $VO_{2max}$ , men performed significantly better, but not when analyzed as the percentage of  $VO_{2max}$  predicted values. Men performed still better in terms of hand grip absolute values, although not in percentage of predicted values, in which women showed a greater relative strength. As for the sit-stand capacity, balance and agility, the performance by men and women was not significantly different, whereas women performed better in sit-and-reach capacity.

TABLE 1 - Results concerning age, anthropometric variables and objective monitoring of daily activities in sedentary but healthy and functionally independent elderly.

Results are presented as mean (standard deviation).  
BMI = body mass index.  
6MWT = 6-Minute Walking Test;  
 $VO_{2max}$  = maximal oxygen consumption measured in the Shuttle Walk Test.

Variables	Total (N = 30)	Men (n = 15)	Women (n = 15)	p value men x women
Age (years)	66 (6)	67 (7)	65 (4)	0.42
BMI (kg/m <sup>2</sup> )	28 (4)	27 (4)	30 (4)	0.04
Comorbidities (units)	3 (2)	2.2 (1)	3.5 (2)	0.03
Time spent walking per day (min/day)	83 (32)	85 (42)	81 (21)	0.72
Time spent standing per day (min/day)	253 (99)	209 (95)	297 (86)	0.01
Time spent sitting per day (min/day)	286 (112)	350 (106)	222 (79)	< 0.01
Time spent lying per day (min/day)	99 (79)	81 (79)	118 (77)	0.10
Movement intensity during walking (m/s <sup>2</sup> )	2.2 (0.5)	2.5 (0.6)	2.0 (0.2)	0.01
6MWT (m)	544 (62)	574 (68)	514 (37)	< 0.005
6MWT (% predicted)	94 (8)	92 (9)	97 (7)	0.14
Shuttle Walk Test (m)	657 (211)	764 (207)	541 (149)	0.002
$VO_{2max}$ (ml.kg <sup>-1</sup> .min <sup>-1</sup> )	17 (7)	20 (6)	14 (5)	< 0.007
$VO_{2max}$ (% predicted)	76 (20)	81 (16)	72 (24)	0.23
30-s chair stand test (repetitions)	13 (3)	13 (2)	13 (3)	0.45
Hand grip (kg)	30 (7)	35 (6)	24 (3)	< 0.0001
Hand grip (% predicted)	97 (15)	92 (14)	103 (14)	0.05
Sit-and-reach test (cm)	19 (9)	16 (7)	22 (11)	0.04
One leg balance test (s)	18 (11)	21 (12)	15 (9)	0.10
Agility/ dynamic balance test (s)	23 (3)	23 (4)	24 (3)	0.19

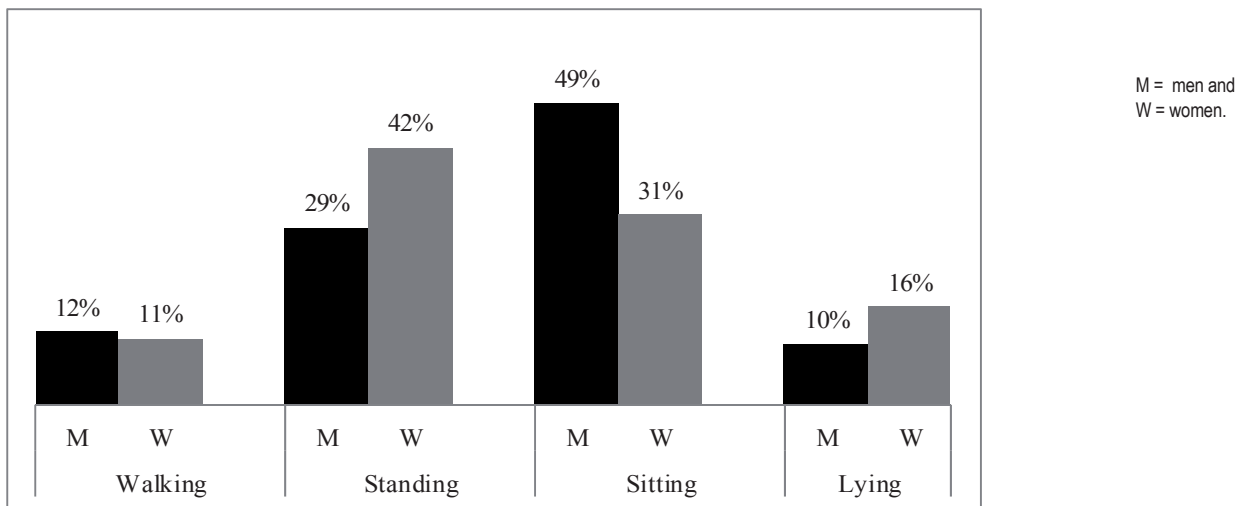


FIGURE 1 - Percentages of time spent per day in walking, standing, sitting and lying in the group of men and women in sedentary but healthy and functionally independent elderly.

In the TABLE 2 that are showing correlations, the men’s group had a statistically significant and negative correlation of time spent walking per day with age ( $r = -0.61$ ;  $p = 0.01$ ) and BMI ( $r = -0.54$ ;  $p = 0.03$ ). In the women’s group, time spent walking per day was significantly correlated only with time

spent standing per day ( $r = 0.55$ ;  $p = 0.03$ ) and negatively correlated with time spent sitting per day ( $r = -0.53$ ;  $p = 0.04$ ). There was no significant correlation between time spent walking and any of the other variables evaluated via physical and functional tests for either men or women.

TABLE 2 - Results concerning correlations between time spent walking per day and other variables of objective monitoring of daily variables, and variables of functional fitness and anthropometrics in sedentary but healthy and functionally independent elderly.

Variables	Men		Women	
	r	p	r	p
Age (years)	- 0.61	0.01	- 0.03	0.89
BMI (kg/m <sup>2</sup> )	- 0.54	0.03	0.10	0.10
Comorbidities (units)	0.37	0.19	- 0.05	0.84
Time spent standing per day (min/day)	0.49	0.06	0.52	0.04
Time spent sitting per day (min/day)	- 0.46	0.07	- 0.68	< 0.01
Time spent lying per day (min/day)	- 0.46	0.08	- 0.09	0.72
Movement intensity during walking (m/s <sup>2</sup> )	0.47	0.07	0.03	0.89
6MWT (m)	0.28	0.30	- 0.44	0.10
Shuttle Walk Test (m)	0.04	0.86	- 0.10	0.73
30-s chair stand test (repetitions)	- 0.37	0.16	- 0.05	0.85
Hand grip (kg)	0.28	0.31	- 0.14	0.62
Sit-and-reach test (cm)	0.45	0.09	0.17	0.52
One leg balance test (s)	- 0.09	0.73	0.02	0.92
Agility/ dynamic balance test (s)	- 0.02	0.91	0.38	0.17

## Discussion

The initial proposal of this study was to compare the levels of daily activity and variables of functional fitness and anthropometrics, among elderly, sedentary and physically independent men and women, and secondarily to analyze the relationship between time spent in locomotion per day (i.e., walking) and variables of functional fitness and anthropometrics in both genders. As noted in the results, the pattern of daily activities performed by elderly men and women is similar in some aspects and different in others. As for the time spent walking per day, for example, men and women were similar; however, men walked at a higher intensity (i.e., men walk faster), and therefore it is possible that they have had higher energy expenditure for performing the same activity time than women. This inference is based on equipment specifications (DynaPort, 1998), which mention that the intensity of the movement is measured by considering the vector of acceleration and deceleration of the trunk in the forward direction and longitudinal as well as considerations of MELANSON and FREEDSON (1995) who claim that acceleration is directly proportional to muscle strength and that is directly related to energy expenditure. The highest intensity of movement in locomotion recorded in men can be explained by anthropometric differences and structural differences between the genders, as men generally have larger legs and more muscles, which naturally put them in a position to move around with greater intensity than women.

On the other hand, the differences were significant regarding sedentary activities. The fact that women remained standing longer and men remained sitting longer might be explained by socio-cultural and biological factors. Studies have shown that the activities of older women relate predominantly to housework (BENNET, 1998; MATTIASON-NILO, SONN, JOHANNESSON, GOSMAN-HEDSTRÖM, PERSON & GRIMBY, 1990). These activities, such as washing, ironing and cooking, do not require constant locomotion, but they do demand considerable time standing up with frequent upper-limb movement, a factor that was not measured by the instruments used in the present study. Older men, however, are more likely to engage in activities outside the house, and when they are at home, they apparently do not do housework. Also, we should not overlook the possibility that men experience a greater decrease in muscle strength in the lower limbs (i.e., body weight support) than women, due to the fact that they spend less time standing and more time passively

(sitting + lying). Although there was no significant difference between genders in the percentage of predicted values for lower-limb strength, there was a 12% mean difference favoring women. It is worth pointing out that contradictory results exist in the literature regarding gender and sarcopenia. Nevertheless, some studies (IANNUZZI-SUCICH, PRESTWOOD & KENNY, 2002; JANSSEN, HEYMSFIELD, WANG & ROSS, 2000) support the present study's hypothesis of a higher prevalence of reduced muscle strength in the lower limbs of men. These differences may be caused by hormonal alterations as well as by atrophy due to decreased body weight support (JANSSEN et al., 2000). Furthermore, regarding sedentary activities, it should be noted that even though women remained lying down somewhat longer than men (no significant difference), when added sedentary activities, sitting and lying, men had an important mean of 1.5 hours more per day than women. These results support the hypothesis that men may suffer sharper declines in strength and resistance of the lower limbs than women.

Time spent walking per day in both groups represented only 12% and 11% of the total time for men and women, respectively. This clearly shows that the elderly spend the greater part of their day in sedentary activities (passive time). There are no reference values for daily time spent walking by elderly adults that can provide a prediction of whether the present sample is within the expected standards for individuals in this age range. However, we feel that these results seem to indicate a low level of physical activity, seeing that the percentage of time spent walking per day was disproportionately low compared to other, especially for passive (sedentary) activities. In this sample, there was not much physical activity other than that required for housework, leisure and social activities. The data provided by the accelerometer concerning movement intensity in this study do not account for the intensity degree classifications (low, moderate and intense) or the time spent at each of these intensities during walking. Due to the fact that these elderly subjects do not perform any regular physical activity, it is believed that most of their walking time was spent at low-intensity, and thus they do not reach the recommended 30 minutes of moderate intensity activities on most days. Few studies to date have been performed on healthy, sedentary and physically independent elderly subjects that can serve for comparison with the data obtained

in the present study (PITTA, TROOSTERS, SPRUIT, PROBST, DECRAMER & GOSSELINK, 2005b); used the DynaPort to study 25 healthy elderly Belgian subjects (both genders) as a control group for comparison with elderly patients with Chronic Obstructive Pulmonary Disease (COPD). The results were relatively similar to those in the present study in terms of time spent walking and standing per day. However, the subjects of the present study spent a considerably longer time lying down (an average of 99 minutes vs. 29 minutes), which was certainly closer to Austrian and Brazilian patients with COPD (98 and 119 minutes, respectively) (PITTA, BREYER, HERNANDES, TEIXEIRA, SANT'ANNA, FONTANA, PROBST, BRUNETTO, SPRUIT, WOUTERS, BURGHUBER & HARTL, 2009), who are much more physically and functionally limited. Although the elderly in our study demonstrated normal lung function, the possibility exists that other important as-of-yet undiagnosed limitations were present and, thus, unreported on the comorbidities questionnaire. Nevertheless, we should not discard the possibility that a portion of Brazilian elderly habitually spend more time at rest (lying) than other previously-studied European populations.

The results indicating better performance in absolute values for men in most variables of functional fitness and exercise capacity are supported by the literature (BAUTMANS, LAMBERT & METS, 2004; BUDZIARECK, DUARTE & BARBOSA-SILVA, 2008; SANADA, KUCHIKI, MIYACHI, MCGRATH, HIGUCHI & EBASHI, 2007; SINGH, PAW, BOSSCHER & MECHELEN, 2006; WEISS, SPINA, HOLLOSZY & EHSANI, 2005). These results suggest that, as in other age ranges such as youth and adulthood, men usually have a better absolute physical condition than women, as their physical constitution and types of daily tasks undertaken lifelong, are usually more intense than women. When the same variables of exercise capacity and functional fitness were compared in terms of percentage of reference values predicted for gender and age, the differences between men and women were no longer present, or the latter performed significantly better, as can be seen in the hand grip results. This also suggests that the longer time spent standing by women is related to a more extensive use of their upper limbs during housework, and thus better preserves the strength of those muscle groups. It is important to mention that even for the variables in which performance versus predicted values were not compared (e.g., balance, agility, and standing up and sitting down), the performance of both men and women was similar, indicating that if

a comparison of their relative capacities were made, women were more likely to perform better. At a first glance, these results could be considered surprising, since the men presented a better absolute profile for body fat, upper-limb strength,  $VO_{2max}$  and exercise capacity (6MWT and SWT), which are determinants of physical condition and directly relate to balance, agility and lower-limb strength. However, the tests used for these variables evaluate the functionality of elderly subjects as a whole, and not in an isolated way. The functionality of an elderly individual is related not only to exercise capacity and anthropometric profile, but also to individual experience (ability) in performing daily activities. Thus, since they more frequently perform household tasks, women may have acquired more experience in the evaluated situations, and so even with a lesser absolute capacity for exercise, they performed similarly in comparison to men.

The correlations of time spent walking per day with the other variables in this study were also different for men and women. The moderate and negative correlations with age and BMI for men indicate that their locomotion is dependent on both physical structure and less advanced age. As for women, their moderate and positive correlation with time spent standing and the negative correlation with time spent sitting suggest that their locomotion is closely related to household chores, which are mostly performed in the standing position. Another aspect to consider in this context is the absence of a positive correlation between variables of functional fitness and time spent walking both for men and women, which can be explained by the sedentary condition of the subjects. In other words, the locomotion pattern of the individuals in this study seems not to require specific physical condition and, at the same time, it allows them to perform daily activities regardless of their high or low exercise capacity. The results of some of the variables that were analyzed in relation to predicted values show that both groups either came close to or exceeded 100%. This means that the elderly who took part in this study, although sedentary, have enough functional reserves to be more active. A low level of physical activity seems to be a common feature of the elderly, regardless of their physical condition (ASHE, ENG, MILLER & SOON, 2007). This agrees with studies that have demonstrated that the high level of physical activity in some elderly individuals does not relate exclusively to their capacity but also to socio-economical, cultural and environmental factors such as educational level, motivation, living and housing arrangements, beliefs

toward the adequacy of activity and hindrances to the practice of physical activity (BERGER, DER, MUTRIE & HANNAH, 2005; CHIPPERFIELD, NEWALL, CHUCHMACH, SWIFT & HAYNES, 2008).

Monitoring the daily physical activities of the participants in this study for only two days may be considered a limitation. A previous study demonstrated that the use of the DynaPort for two days provided a valid estimate for patients with COPD (PITTA et al., 2005b), but no other study has recommended a required number of days for an evaluation of healthy elderly people with such an instrument. Nevertheless, since the individuals in the present study were sedentary and retired, it was believed that there would be no relevant day-to-day variability in their level of activities. Moreover, weekend days were not included in the monitoring, which may also have contributed to decreased day-

to-day variability and to a realistic estimate of the habitual level of daily activities in this group. Finally, as another limiting factor, some characteristics that were not addressed in the present study, such as psychological, cognitive and socio-demographic variables, may relate to the level of daily physical activity in any population.

In summary, elderly men and women have patterns of daily activity that are similar in some aspects and different in others. Although the time spent daily walking and lying down are similar, men move with greater intensity and remain sitting longer whereas the time spent standing by women is longer. In general, men have a better exercise capacity than women in absolute values, but not a better relative capacity in terms of predicted values. This may place both genders in a similar condition regarding the performance of daily activities.

## Resumo

Perfil da atividade física na vida diária de homens e mulheres idosos fisicamente independentes

Este estudo comparou o perfil da atividade da vida diária e variáveis de aptidão funcional entre homens e mulheres idosos, bem como a relação de seu tempo de caminhada por dia com as demais variáveis estudadas em cada gênero. Trinta idosos saudáveis (15 homens,  $66 \pm 6$  anos), sedentários e fisicamente independentes, tiveram suas atividades diárias avaliadas objetivamente por um acelerômetro multi-axial, bem como variáveis de aptidão física e funcional avaliadas por protocolos específicos. Homens e mulheres apresentaram tempo gasto andando por dia semelhantes, apesar dos homens se movimentarem com maior intensidade. As mulheres permaneceram mais tempo em pé e os homens mais tempo sentados. Os homens apresentaram melhor desempenho em valores absolutos na maioria dos testes físicos, mas não em valores relativos. Em conclusão, apesar de seus diferentes padrões de atividades diárias, os homens idosos e mulheres não diferem em tempo de caminhada por dia.

UNITERMOS: Atividade cotidiana; Gênero; Idosos; Caminhada.

## Resumen

Perfil de la actividad física en la vida diaria de hombres y mujeres mayores físicamente independientes

Este estudio comparó el perfil de la actividad de la vida diaria y variables de aptitud funcional entre hombres y mujeres mayores, así como la relación de su tiempo de caminata por día con las demás variables estudiadas en cada género. Treinta mayores saludables (15 hombres,  $66 \pm 6$  años), sedentarios y físicamente independientes, tuvieron sus actividades diarias evaluadas objetivamente por un acelerómetro multi-axial, así como variables de aptitud física y funcional evaluados por protocolos específicos. Todos presentaron tiempo gasto andando por día semejantes, a pesar de que los hombres se muevan con mayor intensidad. Las mujeres permanecieron más tiempo en pie y los hombres más tiempo sentados. Los hombres presentaron mejor desempeño en valores absolutos en la mayoría de los testes físicos, pero



no en valores relativos. Se concluyó que los hombres y las mujeres mayores no se difieren en tiempo de caminata por día.

PALABRAS CLAVE: Actividad de la vida diaria; Genero; Anciano; Caminata.

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