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Baseline Lower Extremity Strength and Subsequent Decline in Functional Performance at six-year follow-up in Persons with Lower Extremity Peripheral Arterial Disease

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Abstract

OBJECTIVES—To evaluate associations of baseline lower extremity strength with decline in functional performance at up to six-year follow-up among men and women with lower extremity peripheral arterial disease (PAD).

DESIGN—Prospective observational study.

SETTING—Three Chicago-area hospitals.

PARTICIPANTS—374 men and women with PAD.

MEASUREMENTS—Baseline isometric hip extension, hip flexion, knee flexion, and knee extension strength were measured with a Musculoskeletal Fitness Evaluation chair. The following outcomes were assessed at baseline and annually thereafter: usual and fastest-paced four meter walking velocity, the six-minute walk, and the Short Physical Performance Battery (SPPB). Analyses adjust for age, sex, race, the ankle brachial index (ABI), co-morbidities, and other confounders.

RESULTS—In women with PAD, lower baseline hip and knee flexion strength were associated with faster average annual decline in usual-paced four meter walking velocity (p trend <0.001 and p trend = 0.02 respectively) and the SPPB (p trend =0.019 and p trend = 0.01 respectively). Among women, poorer hip extension strength was associated with faster decline in the usual-paced four meter walking velocity and SPPB (p trend =0.01 and p trend <0.01, respectively). There were no significant associations of baseline strength with decline in six minute walk among women. There were no significant associations of any baseline strength measure with functional decline among men.

CONCLUSION—Poorer baseline leg strength is associated with faster functional decline in non-endurance measures of functional performance among women with PAD but not among men with PAD.

Keywords

Intermittent claudication; physical functioning; SPPB; peripheral arterial disease

INTRODUCTION

Men and women with lower extremity peripheral arterial disease (PAD) have greater functional impairment and faster rates of functional decline than persons without PAD (1,2). Mechanisms of functional decline among men and women with PAD are not well established. Men and women with PAD have poorer lower extremity strength than those without PAD (3-5). Cross-sectional studies in patients with PAD demonstrate that poorer leg strength is associated with greater impairment in functional performance (3,4). However, associations of baseline leg strength with functional decline among men and women with PAD have not been reported previously to our knowledge. Establishing associations of lower extremity strength with subsequent functional decline will help determine whether impaired lower extremity strength may be in the causal pathway of the association of lower extremity ischemia with decline in functional performance.

We evaluated associations of baseline lower extremity strength with average annual decline in objectively-measured functional performance among persons with PAD. We hypothesized that among men and women with PAD, poorer baseline lower extremity strength would be associated with faster rates of decline in lower extremity performance measures.

METHODS

Participant Identification

The protocol was Institutional Review Board-approved by Northwestern University Feinberg School of Medicine and Catholic Health Partners Hospitals. Participants gave informed consent. Participants included persons with PAD in the Walking and Leg Circulation Study (WALCS) and were age 55 and older (1,2). The WALCS is an observational, prospective study designed to identify clinical characteristics associated with functional decline among men and women with PAD. Participants attended a baseline study visit and were followed annually to assess changes in functional performance over time. The current analyses include data collected through the sixth annual follow-up visit.

PAD was defined as an ankle brachial index (ABI) < 0.90. PAD participants were identified consecutively from among patients diagnosed with PAD in three Chicago-area non-invasive vascular laboratories. A small number of participants were identified from among consecutive patients age 55 and older in a general internal medicine practice who were found to have an ABI < 0.90.

Exclusion Criteria

Exclusion criteria for WALCS and the number of potential participants meeting each criterion have been reported previously (1). Patients with dementia, defined as a mini-mental status examination score < 18, were excluded because of their inability to answer questions accurately (6). Nursing home residents, wheelchair-bound patients, and patients with foot or leg amputations were excluded because they had severely impaired functioning at baseline or represented an extreme case of PAD. Non-English-speaking patients were excluded because investigators were not fluent in non-English languages. Potential participants with recent major surgery and those with poor life expectancy were excluded. No potential PAD participants were excluded because their ABI was too low.

Ankle Brachial Index Measurement

The ABI was measured using established methods (1,2). After participants rested for five minutes, a hand-held Doppler probe (Nicolet Vascular Pocket Dop II, Golden, CO) was used to measure systolic pressures in the right brachial artery, right dorsalis pedis and posterior tibial arteries, left dorsalis pedis and posterior tibial arteries, and left brachial artery. Each pressure was measured twice. The ABI was calculated by dividing average pressures in each leg by the average of the four brachial pressures (7). Average brachial pressures in the arm with highest pressure were used when one brachial pressure was higher than the opposite brachial pressure in both measurement sets, and the two brachial pressures differed by 10 or more mm Hg in at least one measurement set, since in such cases subclavian stenosis was possible (8).

Isometric Strength Measures

Leg strength for each participant was measured using a musculoskeletal fitness evaluation (MFE) chair (Figure 1). The MFE chair measures isometric strength in Newton-meters for hip flexion, hip extension, knee flexion, and knee extension by using strain gauges connected to a computerized data-collecting unit. The leg with the lowest ABI was selected for testing. Participants sat in the MFE chair and pushed against the leg attachments for 5 seconds, building to their maximum strength. The highest recorded strength during the last 3 seconds of effort was used in analyses. Strength measurements were performed twice and averaged. Pearson correlation coefficients between the first and second trials ranged from 0.90 ($p < 0.001$) to 0.96 ($p < 0.001$) for each strength measure. There were no practice trials prior to strength testing. During strength measurement, the knee extension angle was 120 degrees and the knee flexion angle was 135 degrees. The hip flexion and extension angles were approximately 90 degrees.

Six-Minute Walk

Participants walk up and down a 100-foot hallway for six minutes after instructions to cover as much distance as possible (1,2,9,10). The interclass correlation coefficient for test re-test reliability of the six-minute walk was 0.90 ($P < .001$) in our laboratory among 155 PAD participants who completed the tests approximately 1-2 weeks apart (10).

Four-meter walking velocity

Walking velocity was measured with a four-meter walk performed at “usual” pace and at “fastest” pace (1,2,11). Each walk was performed twice. The faster of two walks was used in analyses (1,2,11). The interclass correlation coefficient for test re-test reliability were 0.83 ($p < .0001$) and 0.88 ($p < .0001$), respectively in our laboratory among 148 PAD participants who completed the tests approximately 1-2 weeks apart (10).

Repeated chair rises

Participants sit in a straight-backed chair with arms folded across their chest and stand five times consecutively as quickly as possible. Time to complete five chair rises was measured (11).

Standing balance

Participants were asked to hold three increasingly difficult standing positions for ten seconds each: standing with feet together side-by-side and parallel (side-by-side stand), standing with feet parallel with the toes of one foot adjacent to and touching the heel of the opposite foot (semi-tandem stand), and standing with one foot directly in front of the other (tandem stand). Performance was scored on a 0-4 scale, based on prior methods (11).

Short Physical Performance Battery

The Short Physical Performance Battery (SPPB) combines data from the usual paced four-meter walking velocity, time to rise from a seated position five times, and standing balance. Individuals receive a zero score for each task they are unable to complete. One to four scores are assigned for remaining tasks, based upon quartiles of performance for over 6,000 participants in the Established Populations for the Epidemiologic Study of the Elderly (11). Scores are summed to obtain the SPPB, ranging from 0 to 12, where 0 represents inability to perform any of the measures and 12 represents the highest possible score (11).

Comorbidities

Algorithms developed for the Women's Health and Aging Study were used to document comorbidities, combining data from patient report, physical examination, medical record review, medications, laboratory values, and a primary care physician questionnaire (6). Comorbidities assessed were history of angina, diabetes mellitus, myocardial infarction, heart failure, pulmonary disease, cancer, spinal stenosis, and disk disease. American College of Rheumatology criteria were used to adjudicate knee and hip osteoarthritis (12,13).

Leg Symptom Groups

Leg symptoms were classified into one of five groups using the San Diego Claudication Questionnaire, based on previous studies (1,2,14).

Other measures

Height and weight were measured at the study visit. Body mass index (BMI) was calculated as weight (kg)/(height (meters))². Cigarette smoking history was based on self-report. Physical activity was measured using patient report of the number of blocks walked last week (15). Participants were asked to bring their medications to their study visit.

Statistical Analyses

For each strength measure, participants were categorized into tertiles of strength at baseline. Baseline characteristics across these tertiles were compared using general linear models for continuous variables and chi-square tests for categorical variables. Because hip or knee arthritis may influence associations of leg strength with lower extremity functional decline, participants with hip arthritis were excluded from analyses of hip strength and participants with knee arthritis were excluded from analyses of knee strength.

We compared change in functioning (e.g., change in annually measured six minute walk distance) across tertiles of each baseline strength measure using a longitudinal or repeated measures analysis of covariance (ANCOVA) with mixed-effects linear regression analysis.

Specifically, the annual change in functional performance is the response variable and dummy variables indicating tertiles of each baseline strength measure are independent variables of the primary interest. The correlation of annual changes for the same individual was accounted by using an individual specific random intercept. Analyses were adjusted for baseline covariates (gender, age, race, comorbidities, smoking pack years, leg symptoms, physical activity), a time-dependent covariate representing functional performance at the immediately preceding visit, time dependent covariates for BMI and ABI, and patterns of monotone missing data. We adjusted for functional performance during the prior year because functional performance in any given year sets an upper limit on the potential changes and thus can be an important confounder. For example, a decline in six-minute walk of 100 feet has different implications in a participant whose prior year six-minute walk performance was 200 feet, compared to one whose prior year performance was 1,500 feet. We employed multiple imputations to handle the missing data that occurred in the longitudinal analysis. The analysis of p-trend was used to determine linear trends in functional decline across tertiles of leg strength. Because associations of leg strength and functional decline may differ between men and women, analyses were performed separately among men and women. Analyses were performed using SAS statistical software (version 9.1, SAS Institute Inc, Cary, NC).

RESULTS

Of 460 WALCS participants with PAD who completed baseline testing, 422 (91.7%) completed one or more baseline strength measure. Of these, 382 (90.5%) completed one or more follow-up visits including functional performance measures. Of these, eight had both hip and knee arthritis and were excluded, leaving 374 participants for analyses (152 woman and 222 men). Of these, 370 completed hip extension and hip flexion measures, 365 completed knee flexion measures and 364 completed knee extension measures at baseline. Follow-up rates at visits 1-6 were 99.2%, 85.0%, 70.3%, 58.6%, 50.0%, and 41.7% respectively. Mean follow-up was 4.96 years.

Baseline characteristics of women participants across tertiles of leg strength measures are presented in Table 1. Poorer baseline hip flexion, knee flexion and knee extension strength were associated with older age. Poorer hip flexion and poorer knee flexion were associated with lower BMI values. Poorer performance on each strength measure was associated with poorer six-minute walk performance among women. Poorer strength was associated with poorer performance on other functional measures at baseline as well (Table 1). Similar baseline findings were observed among men. However, poorer performance on each strength measure was associated with older age, poorer six-minute walk performance, and lower SPPB scores among men (data not shown). In addition, poorer knee extension was associated with a higher prevalence of cardiovascular disease among men (data not shown).

No significant associations of baseline leg strength with average annual decline in functional performance were identified in men (data not shown). Results reported below describe associations of baseline strength with functional decline among women. All analyses adjust for age, race, prior year performance, time-dependent BMI and ABI, smoking, leg symptoms, comorbidities, physical activity, and patterns of missing data.

Among women with PAD, lower baseline strength for hip flexion (p trend =0.007), hip extension (p trend =0.011), and knee flexion (p trend =0.020) were associated with significantly greater declines in usual-paced four-meter walking velocity (Figure 2). Compared to participants in the highest baseline strength tertile, women in the lowest strength tertiles for hip flexion (-0.048 vs. -0.014 meters/second, p = 0.005), knee flexion (-0.041 vs. -0.005 meters/second, p =0.016), and hip extension (-0.035 vs. -0.008 meters/second, p =0.014) had significantly faster rates of decline per year in usual-paced four-meter walking velocity.

Among women with PAD, lower baseline hip flexion (p trend = 0.019), hip extension (p trend = 0.009), knee flexion (p trend = 0.012), and knee extension (p trend = 0.023) were each associated with faster average annual decline in the SPPB (Figure 2). Compared to participants in the highest baseline strength tertile, participants in the lowest tertile of hip flexion (−0.643 vs. −0.220 per year, p=0.017), hip extension (−0.505 vs. −0.106, p=0.013), knee flexion (−0.701 vs. −0.107, p = 0.012), and knee extension (−0.686 vs. −0.103, p=0.020) had faster annual rates of decline in the SPPB.

Among women with PAD, lower baseline hip flexion was associated with faster decline in fast-paced four meter walking velocity (p trend = 0.025). Compared to participants in the highest baseline strength tertile of hip flexion, those in the lowest baseline tertile had significantly faster rates of decline in the fast-paced four meter walking speed per year (−0.061 vs. −0.029 meters/second, p=0.021). Lower baseline hip extension (p trend = 0.058) and lower baseline knee flexion (p trend = 0.0700) were nearly significantly associated with faster decline in the fast-paced four-meter walking speed.

Among women, there were no significant associations of baseline strength measures with average annual decline in six-minute walk performance (data not shown). However, associations of lower knee flexion (p trend = 0.080) with poorer six-minute walk performance approached statistical significance.

Results for associations of lower extremity strength with functional decline among men and women were not substantially changed after additional adjustment for cilostazol and pentoxifylline.

DISCUSSION

Among 152 women with PAD, poorer baseline hip extension, hip flexion, knee extension, and knee flexion strength were each associated significantly and independently with faster average annual decline in usual four-meter walking speed, fastest four-meter walking speed, and/or the SPPB, adjusting for confounders. There were no significant associations of baseline strength with functional decline among men with PAD. To our knowledge, no prior studies have evaluated associations of baseline lower extremity strength with decline in functional performance in men and women with PAD. Prior cross-sectional study demonstrates that men and women with PAD have poorer lower extremity strength compared to those without PAD (3). Our findings reported here indicate that even within the lower range of strength observed in patients with PAD, poorer lower extremity strength among women is associated with faster decline in functional performance. Among women, differences in rates of average annual decline between the highest and lowest tertiles for hip flexion were −0.034 meters/second/year for usual paced walking velocity, −0.032 meters/second/year for fast-paced walking velocity, and −0.042 units/year for the SPPB. These differences in rates of average annual decline translate to −0.17 meters/second, −0.16 meters/second, and −0.21 units over five year follow-up and are consistent with clinically meaningful mobility loss based on prior work (16). Reasons for differences between men and women with PAD in associations of lower extremity strength with rates of functional decline are unclear. Previous cross-sectional study demonstrates that women with PAD have poorer functional performance than men with PAD and that poorer functional performance among women as compared to men may be explained by sex differences in strength (17). It is conceivable that the higher baseline strength previously observed among men compared to women with PAD prevents a differential rate of functional decline across baseline leg strength among men. Alternatively, other factors, such as sex differences in progression of PAD or inflammation, may supersede strength as determinants of functional decline among men.

Although our findings demonstrate significant associations of baseline lower extremity strength with faster functional decline among women with PAD, a recently published randomized controlled clinical trial (the Study to Improve Leg Circulation (SILC)) demonstrated that lower extremity resistance training three times weekly for six months did not significantly improve the SPPB or six-minute walk performance among men and women with PAD (10). The lack of improvement in the SPPB in response to lower extremity strength training in the SILC trial appears inconsistent with some of our findings reported here (17). As compared to the SILC trial, data reported here describe associations of baseline strength with decline in functional performance over a mean follow-up of 4.96 years. In contrast, the SILC trial assessed the ability of six-month resistance training intervention to improve functional performance at six-month follow-up. In addition, the three-times weekly SILC resistance training may have been insufficient to reverse leg strength-associated functional impairment in participants with PAD. Finally, the SILC study included both men and women. However, findings reported here demonstrate that poorer lower extremity strength is associated with faster rates of functional decline among women with PAD, but not among men with PAD.

This study had limitations. First, the study was observational. Associations between strength and decline in physical performance measures can not be interpreted as causal. Second, the study participants were recruited from academic medical centers. The findings may not be generalizable to individuals outside of academic medical centers. Third, our study evaluated hip and knee strength but more distal strength measurements, such as dorsiflexor and plantarflexor muscles, may be important for preservation of functional performance over time in persons with PAD. Fourth, our study included isometric measures of lower extremity strength. Findings may be different for measures of muscle power. Fifth, strength was measured in the sitting position, while most of the physical performance outcomes were completed in the standing position. Strength measures obtained in an upright position may be even more closely correlated with rate of functional decline than strength measures with participants seated. Sixth, we did not collect data on duration of PAD, which could modify the association of leg function with functional decline. Seventh, the large number of comparisons evaluated in the present study may have resulted in some statistically significant findings by chance. However, the consistency of findings with regard to associations of baseline strength with average annual functional decline in women vs. men supports the validity of our findings.

CONCLUSION

Among women with PAD, poorer lower extremity strength is associated with greater average annual decline in functional performance. These findings suggest that women with PAD and poorer leg strength are at particularly high risk of functional decline and may benefit from leg strengthening interventions to slow the rate of decline. Our findings also suggest that mechanisms of functional decline may differ between men and women with PAD.

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Figure 1.
The Musculoskeletal Fitness Evaluation chair.

Associations of Baseline Leg Strength with Average Annual Decline in Usual-Paced Four Meter Walking Velocity Among Women with Peripheral Arterial Disease

Associations of Baseline Leg Strength with Average Annual Decline in the Short Physical Performance Battery (SPPB) among Women with Peripheral Arterial Disease .

Figure 2.

Associations of baseline strength with average annual functional decline among women with peripheral arterial disease (n=152).

Analyses adjust for age, race, smoking, leg symptoms, physical activity level, comorbidities, time-dependent variables for body mass index and the ankle brachial index, and patterns of missing data.

Table 1

Baseline Characteristics of Woman with Peripheral Arterial Disease across Tertiles of Baseline Strength Measures *

Baseline Tertiles of Hip Flexion Strength				
Characteristic	1st Tertile	2nd Tertile	3rd Tertile	
	< 32.65 Newton-Meters (N=47)	33.05-45.95 Newton-Meters (N=51)	> 46.45 Newton-Meters (N=52)	P trend
Age (years)	75.34 (8.77)	72.29 (7.71)	71.67 (7.97)	0.0238
Ankle Brachial Index	0.62 (0.17)	0.61 (0.13)	0.67 (0.16)	0.1001
Body Mass Index (kg/M ²)	24.25 (6.66)	26.11 (6.07)	27.80 (5.02)	0.0034
African American (%)	14.89	21.57	26.92	0.1481
Diabetes (%)	40.43	19.61	25.00	0.0997
Angina (%)	25.53	31.37	23.08	0.7617
Current Smoker (%)	17.02	19.61	23.08	0.4515
Six minute walk (feet)	926.81 (358.72)	1082.06(296.66)	1101.34(330.85)	0.0107
Four-meter walking velocity (usual speed) (meters/second)	0.78(0.21)	0.81(0.18)	0.83(0.22)	0.2462
Four-meter walking velocity (fastest speed) (meters/second)	1.04(0.30)	1.10(0.25)	1.13(0.28)	0.1116
SPPB (0-12 scale)	8.50(2.81)	9.48(2.15)	9.53(2.39)	0.0483
-Walking Velocity Score (0-4 scale)	3.06(0.96) 2.45(1.47)	3.37(0.80) 2.92(1.16)	3.21(0.89) 3.00(1.22)	0.4368 0.0451
-Repeated Chair Stand Score (0-4 scale)	2.74(1.19)	3.12(1.05)	3.19(1.05)	0.0461
-Standing Balance Score (0-4 scale)				
Baseline Tertiles of Hip Extension Strength				
Characteristic	1st Tertile	2nd Tertile	3rd Tertile	
	< 34.70 Newton-Meters (N=48)	34.85-51.35 Newton-Meters (N=50)	> 51.40 Newton-Meters (N=52)	P trend
Age (years)	73.79(8.81)	73.92(8.24)	71.23(7.58)	0.1157
Ankle Brachial Index	0.62 (0.17)	0.61 (0.16)	0.68 (0.13)	0.0657
Body Mass Index (kg/meter ²)	24.81(7.34)	26.29(5.61)	27.19(4.98)	0.0502
African American (%)	16.67	16.00	30.77	0.0841
Diabetes (%)	37.50	20.00	25.00	0.1734
Angina (%)	25.00	30.00	26.92	0.8387
Current Smoker (%)	29.17	12.00	19.23	0.2323
Six Minute Walk (feet)	952.51(377.15)	1011.00(289.26)	1150.88(311.41)	0.0028
Four Meter Usual Walk (meters/second),	0.76(0.24)	0.81(0.18)	0.85(0.19)	0.0297
Four Meter Fast Walk (meters/second)	1.03(0.34)	1.10(0.25)	1.16(0.23)	0.0239

Baseline Tertiles of Hip Extension Strength

Characteristic	1 st Tertile	2 nd Tertile	3 rd Tertile	
	< 34.70 Newton-Meters (N=48)	34.85-51.35 Newton-Meters (N=50)	> 51.40 Newton-Meters (N=52)	P trend
SPPB (0-12 scale)	8.27(2.81)	9.69(2.41)	9.58(2.01)	0.0111
-Walking Velocity Score (0-4 scale)	2.98(1.02) 2.22(1.38)	3.32(0.87) 3.08(1.22)	3.35(0.74) 3.06(1.13)	0.041 0.0018
-Repeated Chair Stand Score (0-4 scale)	2.79(1.17)	3.14(1.13)	3.15(1.02)	0.1068
-Standing Balance Score (0-4 scale)				

Baseline Tertiles of Knee Flexion Strength

Characteristic	1 st Tertile	2 nd Tertile	3 rd Tertile	
	< 14.95 Newton-Meters (N=42)	15.00-23.80 Newton-Meters (N=45)	> 23.95 Newton-Meters (N=45)	P trend
Age (years)	74.88(8.22)	73.44(7.54)	69.09(7.40)	0.0006
Ankle Brachial Index	0.63 (0.16)	0.62 (0.14)	0.68 (0.15)	0.165
Body Mass Index kg/meter ²	23.99(6.43)	25.47(6.37)	28.54(5.04)	0.0005
African American (%)	14.29	22.22	20.00	0.5065
Diabetes (%)	33.33	31.11	17.78	0.1034
Angina (%)	26.19	26.67	28.89	0.776
Six Minute Walk (feet)	974.07(256.44)	1051.00(361.68)	1176.93(268.33)	0.0022
Four-meter walking velocity (usual speed) (meters/second)	0.79(0.19)	0.84(0.19)	0.85(0.20)	0.2055
Four-meter walking velocity (fastest speed) (meters/second)	1.08(0.29)	1.12(0.24)	1.16(0.27)	0.1495
SPPB (0-12 scale)	8.68(2.56)	9.60(2.38)	9.70(2.53)	0.0634
-Walking Velocity Score (0-4 scale)	3.17(0.79) 2.56(1.42)	3.38(0.86) 3.00(1.13)	3.33(0.77) 3.14(1.19)	0.3469 0.0366
-Repeated Chair Stand Score (0-4 scale)	2.93(1.05)	3.07(1.12)	3.24(1.03)	0.1663
-Standing Balance Score (0-4 scale)				

Baseline Tertiles of Knee Extension Strength

Characteristic	1 st Tertile	2 nd Tertile	3 rd Tertile	
	< 34.70 Newton-Meters (N=43)	34.85-51.35 Newton-Meters (N=41)	> 51.40 Newton-Meters (N=47)	P trend
Age (years)	74.09(8.27)	73.76(7.31)	69.66(7.95)	0.0079
Ankle Brachial Index	0.64 (0.16)	0.63 (0.16)	0.66 (0.14)	0.5001
Body Mass Index (kg/meter ²)	25.61(7.76)	25.67(5.32)	26.67(5.43)	0.4131
African American (%)	16.28	12.20	27.66	0.1635
Diabetes (%)	39.53	19.51	23.40	0.0962
Angina (%)	20.93	39.02	23.40	0.8315

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Six Minute Walk (feet)	931.07(270.88)	1113.28(311.68)	1144.74(306.89)	0.0011
Four-meter walking velocity (usual speed) (meters/second)	0.77(0.20)	0.85(0.20)	0.85(0.18)	0.606
Four-meter walking velocity (fastest speed) (meters/second)	1.00(0.27)	1.17(0.27)	1.18(0.23)	0.0017
SPPB (0-12 scale)	8.35(2.68)	9.68(2.53)	9.87(2.15)	0.0056
-Walking Velocity Score (0-4 scale)	3.05(0.90) 2.38(1.35)	3.41(0.77) 3.15(1.26)	3.40(0.17) 3.15(1.07)	0.0383 0.0051
-Repeated Chair Stand Score (0-4 scale)	2.77(1.11)	3.12(0.98)	3.32(1.04)	0.0138
-Standing Balance Score (0-4 scale)				

* Values shown are means (standard deviations). SPPB = Short Physical Performance Battery.