Published in final edited form as:
J Aging Phys Act. 2010 January ; 18(1): 61–74.

Interruption of Physical Activity Because of Illness in the Lifestyle Interventions and Independence for Elders Pilot Trial

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Abstract

Objectives—To examine baseline characteristics and change in gait speed and Short Physical Performance Battery (SPPB) scores in participants medically suspended (MS) from a physical activity intervention (PA).

Design—Randomized controlled trial.

Setting—University and community centers.

Participants—Sedentary older adults (N = 213) randomized to PA in the Lifestyle Interventions and Independence for Elders Pilot (LIFE-P).

Measurements—MS was defined as missing 3 consecutive PA sessions in adoption and transition phases or 2 wk in maintenance phase because of a health event.

Results—In all, 122 participants completed PA without MS (NMS subgroup), 48 participants underwent MS and resumed PA (SR subgroup), and 43 participants underwent MS and did not complete PA (SNR subgroup). At baseline, SNR walked slower (p = .03), took more prescribed medications (p = .02), and had lower SPPB scores than NMS and SR (p = .02). Changes from baseline to Month 12 SPPB scores were affected by suspension status, adjusted mean (SE) SPPB change: SNR 0.0957 (0.3184), SR 0.9413 (0.3063), NMS 1.0720 (0.1871); p = .03.

Conclusions—MS participants unable to return to complete the PA in a trial of mobility-limited sedentary older adults had slower walking speeds, lower SPPB scores, and a higher number of

prescribed medications at baseline. Change in SPPB scores at 12 months was related to suspension status.

Keywords

aging; randomized trial; medical suspension; medical comorbidities

Several randomized trials have reported regular physical activity to improve physical function or reduce symptoms of disability in healthy older individuals and those at risk for mobility disability (Ades, Ballor, Ashikaga, Utton, & Nair, 1996; Cress et al., 1999; Fiatarone et al., 1994; Nelson et al., 2004). However, there has not been a definitive clinical trial testing the role of physical activity in improving physical function in this population. To provide information to guide the design of a definitive trial, the Lifestyle Interventions for Elders Pilot (LIFE-P) was conducted as a multicenter randomized controlled trial in older individuals at risk for mobility disability who were randomized to either a multimodal physical activity intervention or a “successful aging” health-education attention-control group for a minimum of 1 year (Rejeski et al., 2005).

A critical issue in designing a trial of this type is whether mobility-limited, sedentary older adults with preexisting or acute medical conditions can reasonably participate in and adhere to a regular program of physical activity for a prolonged period of time. We recently reported that greater adherence to the physical activity intervention in LIFE-P was associated with larger improvements in the Short Physical Performance Battery (SPPB; Fielding et al., 2007). Participants who reported >150 min/week of moderate-intensity physical activity achieved a 79% greater improvement in SPPB score than those who reported <150 min/week of moderate-intensity physical activity.

Discontinuation of physical activity for medical reasons may affect sustained adherence to physical activity, particularly in this population. Interruption of physical activity for preexisting or acute medical conditions in long-term trials (>6 months) of physical activity among older adults has not been well described (Chandler, Duncan, Kochersberger, & Studenski, 1998; Ettinger et al., 1997; Schmidt, Gruman, King, & Wolfson, 2000). An analysis of the cause and out- come of medical suspension from a trial of this nature may be instructive in planning and conducting community-based physical activity interventions for older adults and other long-term clinical trials in this population. Physical activity programs and guidelines for older adults, particularly those with limitations in mobility and other preexisting medical conditions, need to account for these conditions with regard to sustained adherence, goal setting, and successful reentry into physical activity programs after illness.

In the current study, we sought to describe the characteristics of physical activity participants undergoing medical suspensions and distinguish those who never returned to the physical activity intervention from those who successfully returned to complete the intervention. We further sought to examine whether baseline differences in participant characteristics predicted the occurrence of medical suspension in the physical activity group. We hypothesized that participants in LIFE-P who were medically suspended would be older, have lower physical functioning at baseline, report a higher burden of comorbid medical conditions, and be more depressed. In addition, we examined the relationship between medical suspensions during the physical activity intervention and changes in physical functioning.

Methods

Overview

The LIFE-P was conducted to help plan a definitive Phase 3 randomized controlled trial to examine the efficacy of a program of physical activity, compared with attention control, on the incidence of major mobility disability. A complete description of the LIFE-P study design has been reported previously (Rejeski et al., 2005). Briefly, participants were followed for an average of 1.2 years, and the major findings from LIFE-P were that the structured physical activity intervention resulted in clinically meaningful improvements in physical performance compared with the health-education successful-aging control group (LIFE Study Investigators et al., 2006).

Participant Recruitment

Details about the study's specific inclusion and exclusion criteria have been reported previously (LIFE Study Investigators et al., 2006; Rejeski et al., 2005). Briefly, participants were eligible for the study if they were 70–89 years old, sedentary (defined as spending less than 20 min/week in regular structured physical activity), scored ≤9 on the SPPB (Guralnik et al., 1994), and were able to walk 400 m within 15 min without an assistive device (at the baseline assessment).

A total of 424 participants were randomized into physical activity or successful aging arms at four sites (Cooper Institute, Stanford University, University of Pittsburgh, and Wake Forest University) and followed for 12–18 months. All participants signed an informed-consent form, and the institutional review boards of all participating institutions approved the study. For purposes of the current analysis of medical suspensions, we focused exclusively on the first 12 months of the study and on the participants randomized into the physical activity intervention (N = 213).

Baseline Demographics

Information on the participants' demographics and baseline disease burden was obtained through a structured-interview method.

Disease burden required discrete yes-or-no responses to the following chronic health conditions: hypertension, stroke, dysrhythmias, fractures, falls, heart attack, heart failure, pacemaker, lung disease, cancer, and diabetes. In addition, data from standard physical measurements of height and weight were used to calculate body-mass index. To assess for symptoms of depression, all participants completed the Center for Epidemiologic Studies Depression Scale (Radloff, 1977). The Mini Mental State Exam (Folstein, Folstein, & McHugh, 1975) was used to exclude potential participants with dementia (defined as a score <24).

Physical Activity Intervention

Specific details of the physical activity intervention have been reported previously (Fielding et al., 2007; Rejeski et al., 2005). It employed a combination of walking and strength, balance, and flexibility exercises. It was divided into three phases: adoption (Months 1 and 2), transition (Months 3–6), and maintenance (Month 7 to end of trial). The intervention included 10 weekly closed-group behavioral counseling sessions that focused on physical activity adherence and preventing physical disability. Moderate-intensity walking was the primary mode of physical activity (King, 1998; U.S. Department of Health and Human Services, 1996), and the ultimate goal was 150 min of physical activity each week achieved by being active on most, if not all, days of the week. Sessions were preceded by a brief warm-up period and followed by a brief cool-down period. To complement the walking

program, participants completed lower extremity strengthening exercises, followed by lower extremity stretching exercises. Balance training was introduced during the adoption phase. In the adoption phase, participants attended center-based exercise (40–60 min) three times each week, had group behavioral counseling sessions once a week, and received a telephone call one time each month. A gradual phasing in of home-based physical activity began in Week 4.

During the transition phase, center-based exercise was conducted two times each week, with group behavioral counseling contacts occurring during the first 2 weeks and telephone contacts each month. During the maintenance phase, optional center-based exercise sessions were offered one time each week, with monthly telephone contacts to monitor and promote home-based physical activity.

Medical Suspension From Physical Activity

For the purposes of LIFE-P, physical activity participants were classified as medically suspended if they missed three or more consecutive sessions of center-based physical activity (adoption and transition) or 2 or more weeks of home-based physical activity (maintenance) because of a health event. Participants were instructed to report any changes in current medical conditions, any new health events, or any alterations in medication. Specific signs and symptoms triggering immediate notification of study staff included unusual or severe shortness of breath, severe or increasing chest pain, lightheadedness, and dizziness. In addition to continuous participant feedback to the study staff about health events and symptoms, quarterly telephone assessments were made by a separate staff of evaluators to assess hospitalization, injury, new cardiopulmonary symptoms, pain, and other adverse events. If serious events that absolutely contraindicated physical activity were reported, the participant would be medically suspended from the physical activity intervention.

Resumption of Physical Activity Intervention

Study staff contacted suspended participants by telephone at least monthly to determine whether and when the health event had resolved. Evaluation to restart the physical activity intervention included an assessment of the functional impact of the illness and activity-limitation prescriptions provided by the participant's health care team, including the primary-care physician. For all suspended participants, definitive treatment and clearance from the participant's health care provider were required before resuming the physical activity intervention. After clearance from the primary-care physician, the participant was reevaluated by study staff and a new level of physical activity was developed. The participants all completed the physical activity intervention regardless of the length of their medical suspension, and no makeup physical activity sessions were provided. All proposed plans for resumption of physical activity were reviewed and approved by the Lifestyle Resources Core of LIFE-P before a participant resumed activity.

For purposes of the current analysis, the participants in the physical activity intervention were divided into three subgroups based on whether they were never medically suspended, suspended and resumed the physical activity intervention, or suspended and never resumed physical activity. For those undergoing medical suspension the primary reasons were classified as follows:

Type 1 Musculoskeletal (including fractures, sprains, strains, osteoarthritis, back pain, joint pain, bursitis, joint replacement surgery, etc.)

Type 2 General medical and neurological illness (infections, arrhythmias, eye operation, lung disease including pneumonia and shortness of breath, heat

stroke, cancer, gastrointestinal illness, dizziness, Parkinson's disease, and stroke)

Type 3 Psychosocial issues (e.g., depression, cognitive changes, "personal problems," death in the family, etc.)

We also characterized voluntary discontinuation of physical activity with or without an associated medical suspension as withdrawal from the intervention.

Measurements

Measurements of Physical Functioning

SPPB—Physical functioning was assessed using the SPPB (Guralnik et al., 1994). The SPPB score is based on timed measures of standing balance, walking speed, and ability to rise from a chair. Each of the three performance measures was assigned a score ranging from 0 to 4, with 4 indicating the highest level of performance and 0 the inability to complete the test. A summary score (range 0–12) was subsequently calculated by adding the three scores.

400-m Walk—Participants were instructed to walk at their usual pace without overexerting themselves over a 10-lap course (LIFE Study Investigators et al., 2006). The ability to complete a 400-m walk in less than 15 min without an assistive device (at baseline assessment) was used to screen participants for inclusion. This measure was repeated at 6 and 12 months. Gait speed during the 400-m walk was calculated by dividing the distance completed in meters by the time in seconds.

Grip Strength—A Jaymar handheld dynamometer was used to determine grip strength at baseline. Two trials with each hand were recorded to the nearest 2-kg increment.

Measurement of Health Outcomes

Health outcomes were assessed with measurements of blood pressure, radial pulse, height, weight, body-mass index, abdominal circumference in centimeters, and presence of ECG abnormalities. The participants subjectively described their health on a scale from *excellent* to *poor*. In addition, they answered questions regarding their self-perception of any difficulties with walking one quarter or one full mile or difficulties with any activity of daily living.

Statistical Analyses

Analysis of variance and chi-square tests were used to compare baseline demographics and health-status variables between the three suspension subgroups. Logistic-regression models, developed using backward-selection techniques with baseline covariates, were used to obtain multivariable prediction models for the SR and SNR groups. The baseline covariates selected for consideration in these models were gender, age, Center for Epidemiologic Studies Depression Scale score, self-reported difficulty walking a quarter of a mile, SPPB score, and total number of medications.

Change from baseline to 12 months was calculated for SPPB and 400-m-walk gait speed. These change variables were then used as dependent variables in linear models testing for significance of the effect of the three suspension subgroups. The change models were adjusted for clinic and gender (stratification variables used during randomization). This analysis was performed using the GLM procedure in Version 9 of SAS.

Results

Two hundred thirteen participants were randomized to the physical activity intervention. Their characteristics are listed in Table 1. There were 132 medical suspensions during the study. The reasons for these suspensions were musculoskeletal in 52 cases, general medical/neurological in 76 suspensions, and psychosocial dysfunction in 4 instances. Thirty-two participants were suspended two or more times, and 59 participants were suspended only once. Participants were classified into three subgroups: 122 who were never medically suspended (NMS), 48 who were suspended and resumed the physical activity intervention (SR), and 43 who were medically suspended and never resumed the physical activity intervention (SNR). In the SR subgroup the average length for a medical suspension was 51.29 days (range 4–193 days, *SD* 45.39 days). No makeup sessions were provided to participants on return from medical suspension. Three participants randomized to the physical activity intervention never began the intervention. Four others voluntarily discontinued the physical activity intervention; 3 after a medical suspension and 1 without a medical suspension. The total number of withdrawals was 7 of 213 (3.3%).

Table 2 presents comparisons of baseline demographics among the three subgroups. Baseline demographics among NMS, SR, and SNR were not different in regard to age, race/ethnicity, gender, smoking status, education, and marital status. Comparisons among suspension subgroups for variables representing baseline health status are presented in Table 3. The participants' self-reported health revealed no differences between the NMS and SR subgroups, but there were significant differences ($p = .003$) between NMS subgroup participants reporting very good or excellent health (59.0%; 72 of 122) and participants in the SNR group (44.2%; 19 of 43). Conversely, self-report of fair or poor health was reported in only 15 of 122 (12.3%) NMS participants compared with 17 of 43 (39.6%) SNR participants. There were no significant differences in baseline depressive symptoms, systolic or diastolic blood pressure, radial pulse, body-mass index, abdominal circumference, grip strength, ECG abnormalities, or scale of dementia or any medical history of myocardial infarction, hypertension, stroke, diabetes, congestive heart failure, A fib/flutter, presence of a pacemaker, fractures, falls, or cancer. The number of prescribed medications at baseline was different among the subgroups. The NMS group had 4.80 ± 2.69 prescribed medications compared with 5.33 ± 3.84 for the SR group and 6.09 ± 3.48 in the SNR group ($p = .02$). Based on backward-selection logistic regression with baseline predictors, only clinical site ($p = .004$) remained in the predictive model contrasting SR with NMS. A similar model comparing SNR with NMS indicated that the number of prescription medications taken at baseline ($p = .04$) and total SPPB score at baseline ($p = .02$) were predictive of SNR.

Data in Table 4 on baseline physical function reveal that difficulty with activities of daily living was self-reported in 79.5% in the NMS group compared with 72.9% in SR and 93.0% in SNR ($p = .05$). Although there were no significant differences in self-reported difficulty walking either one quarter or one mile, the 400-m-walk speed was significantly slower ($p = .03$) in the SNR subgroup ($M = 0.79 \pm 0.18$ m/s) than in the other two subgroups ($M = 0.88 \pm 0.16$ m/s in SR and 0.87 ± 0.18 m/s in NMS).

An examination of the change from baseline to 12 months for both 400-m-walk gait speed and total SPPB score revealed significant differences between the three subgroups after adjusting for clinical site and gender. The adjusted mean (*SE*) change in 400-m-walk gait speed for NMS participants was 0.0131 (0.0120), for SR it was −0.0220 (0.0198), and for SNR it was −0.0534 (0.0218; $p = .02$). The adjusted mean (*SE*) change in SPPB for NMS was 1.0720 (0.1871), for SR it was 0.9413 (0.3063), and for SNR it was 0.0957 (0.3184; $p = .03$). The numbers of participants tested at 12 months were 118 of 122 in NMS (96.7%), 48 of 48 in SR (100%), and 38 of 43 (88.4%) in SNR.

Discussion

This study determined the characteristics of a group of older, sedentary adults with baseline mobility deficits that entered the physical activity arm of the LIFE-P trial and had their physical activity intervention interrupted by a medical suspension. We found that participants who walked more slowly during testing and scored lower on the SPPB at baseline were more likely to experience a medical suspension during the physical activity intervention and not return to the intervention. In addition, the change in walking speed and SPPB score at 12 months was related to suspended status.

Previously, lower SPPB scores were associated with comorbidity defined as three or more clinical conditions (Cesari et al., 2006), institutionalization, and mortality (Guralnik et al., 1994). It is not surprising that participants who were medically suspended during the physical activity intervention had lower SPPB baseline scores. In the current study, the SNR subgroup had baseline SPPB scores that were on average more than 0.53 points (Perera, Mody, Woodman, & Studenski, 2006) lower than NMS and SR. Gait speeds were also slower in the SNR subgroup than in SR and NMS. Both the SPPB and the 400-m gait-speed differences reported here are strong predictors of future disability and functional decline (Guralnik, Ferrucci, Simonsick, Salive, & Wallace, 1995; Newman et al., 2006). This de cit of approximately 0.1 m/s was consistent with deficits in gait speed at baseline (0.1–0.15 m/s) found in early dropouts from an exercise intervention trial in older adults (Schmidt et al., 2000).

We further analyzed the change from baseline to 12 months in gait speed and SPPB scores. Both the NMS and SR subgroups had SPPB improvements of approximately 1.0 unit, whereas the SNR group improved less than 0.1 unit. In the primary analysis of the LIFE-P trial, the physical activity intervention improved SPPB scores overall (LIFE Study Investigators et al., 2006). The current findings indicate that the improvement in SPPB score occurred even when the physical activity intervention was interrupted by an intercurrent medical illness or event from which the participant returned to the physical activity intervention. However, an intercurrent illness that prevented return to the physical activity intervention may have completely negated any improvements made before the illness. In a randomized trial of exercise in older adults, Jette, Assmann, Rooks, Harris, and Crawford (1998) reported that the development of new medical conditions was one of the strongest predictors of participation nonadherence. Our previous article on adherence to the LIFE-P physical activity intervention indicated that adherence was associated with change in SPPB scores and that participants walking more than 150 min/week had the largest improvements in SPPB score (Fielding et al., 2007). In our previous analysis of adherence to physical activity in LIFE-P, the results did not allow us to distinguish whether differences in the change in the SPPB between participants with high and low adherence was a result of illness or of lack of participation in the physical activity intervention. The results of the current investigation extend these findings by demonstrating that physical activity participants who were medically suspended and never returned to the physical activity intervention demonstrated smaller improvements in SPPB scores than participants who were suspended and returned to the intervention and those who were never suspended. One limitation of the study is the attrition among groups at the 12-month follow-up. However, the higher rate of attrition from the SNR group than from the NMS and SR groups may be a conservative bias. Participants in the SNR not assessed at 12 months were likely more medically ill and more physically impaired.

We hypothesized that participants in the LIFE-P who were medically suspended would be older, have lower physical functioning at baseline, report a higher burden of comorbid medical conditions, and be more depressed. In fact, baseline demographics did not

distinguish the subgroups except for the number of medications prescribed. This is consistent with the observation that the number of prescribed medications is associated with the overall burden of chronic illness in older individuals (Stagnitti & Pancholi, 2004). In addition, the primary medical reasons for suspension were not different between the SR and SNR subgroups. Moreover, we observed no qualitative differences between the severity of the medical event or illness and the participant's return from medical suspension to resume the physical activity intervention. These data suggest that the observed slower gait speed and lower SPPB score at baseline may be more sensitive indicators of risk of a medical suspension than health status or the underlying cause of the medical suspension.

The differences in baseline gait speed between the three subgroups were not reflected in the self-perceived report of difficulty walking one quarter mile. Previous reports have described variance in the self-report versus actual performance of walking in elders (Sayers, Guralnik, Newman, Brach, & Fielding, 2006). The disconnect between a participant's perceived ability and the measured performance in walking is interesting and may be related to the fact that all LIFE-P participants could complete a 400-m walk at baseline. Perhaps the slowed but persistent ability to complete the 400-m walk was not reported as difficult as long as the participant could complete the task. However, the medical suspensions from the physical activity intervention for at-risk older adults were associated with baseline perception of decreased self-reported health and increased reports of difficulty with activities of daily living. In contrast, in a study of attrition from an exercise study, there were no significant differences in self-rated health between participants who were retained in the study and those who dropped out (Schmidt et al., 2000).

We defined withdrawal from the intervention as voluntary withdrawal. The overall withdrawal rate from the physical activity intervention of the LIFE-P study included only 7 of 213 participants (3.2%). Three participants were randomized and never began the intervention, and 4 individuals voluntarily discontinued their participation. This withdrawal rate is much lower than the rate described in previous studies in which dropout rates from exercise intervention trials in older adults ranged from 6% to 34% (Ettinger et al., 1997; Jette et al., 1999; Means, Rodell, O'Sullivan, & Cranford, 1996). These differences may be a result of the design of the current study, which included strenuous attempts to carefully characterize discontinuation of participation and to separately classify withdrawals because of intercurrent illness. In Schmidt et al.'s (2000) post hoc analysis of their data on attrition, they reported 25 of 155 participants (16%) as dropping out because of their group assignment or for refusal to continue and an additional 31 (20%) frail elderly participants dropping out of their study because of health concerns. Their post hoc analysis prevented further definition of the medical events causing these dropouts. We found the same incidence of permanent medical suspension in our corresponding SNR subgroup (20%). A limitation of this study was that participants who were suspended late in the trial might not have had an opportunity to recover from their intercurrent illness and return to the physical activity intervention. Therefore, a longer study may have reduced the percentage of participants in the SNR subgroup. Similarly, the limited (18-month) length of the trial may not have allowed suspended participants to return from a long medical suspension to resume and complete the full physical activity intervention.

Strategies designed to reduce medical suspensions and to return suspended participants to the intervention in trials of mobility-limited older adults may help avoid selective dropout of participants. These strategies may improve the ability to generalize study findings (Hansen, Collins, Malotte, Johnson, & Fielding, 1985). Planning for further studies or community programs for physical activity in mobility-limited older adults should focus on variables that are shown to distinguish individuals who are never suspended (NMS) from the SR and SNR subgroups. Specifically, gait speed, SPPB scores, and decreased self-perception of health

status were variables that distinguished the SNR subgroup from the other subgroups. More attention needs to be placed on those with low SPPB scores and slow gait speeds, perhaps by increasing the frequency of contact during periods of medical suspension.

Conclusion

In conclusion, the results of the current study suggest that baseline measures of physical function are associated with intercurrent medical illnesses during a physical activity intervention trial. At baseline the SNR groups had lower gait speeds and lower SPPB scores. Although development of specific cutoffs for gait speed and SPPB scores may further distinguish participants with a higher likelihood of undergoing medical suspension, there are no specific cutoffs in SPPB scores and 400-m gait speed to exclude participants. Therefore, this approach was not part of the current analysis. In addition, the SNR group had a higher number of prescribed medications at baseline and lower perceived health. Furthermore, the return from a medical suspension (SR) during the LIFE-P physical activity intervention resulted in a significantly greater improvement in SPPB score and gait speed than in SNR participants. These results suggest that early monitoring of physical functioning may help target physical activity participants who are likely to develop intercurrent illnesses during a physical activity intervention that may compromise their adherence. Participants in physical activity trials with low SPPB scores or reduced gait speed may benefit from more frequent contact with study staff during medical suspension to facilitate successful return to the physical activity intervention. We also indicate the types of strategies (e.g., measurement of SPPB, gait speed, and perceived health assessments) that can be applied to increase the chances that ill participants will be able to subsequently return to the physical activity program, with increased likelihood of physical-activity-related benefits accruing to such persons.

Acknowledgments

Cooper Institute, Dallas, TX: Steve Blair, PED (PI); Timothy Church, MD, PhD, MPH.; Jamile A. Ashmore, PhD; Judy Dubreuil, MS; Alexander N. Jordan, MS; Gina Jurca, MA; Ruben Q. Rodarte, MS; and Jason M. Wallace, MPH. *National Institute on Aging:* Jack M. Guralnik, MD, PhD; Evan C. Hadley, MD; and Sergei Romashkan, MD, PhD. *Stanford University, Palo Alto, CA:* Abby C. King, PhD (PI); William L. Haskell, PhD; Leslie A. Pruitt, PhD; Kari Abbott-Pilolla, MS; Karen Bolen; Stephen Fortmann, MD; Ami Laws, MD; Carolyn Prosak, RD; and Kristin Wallace, MPH. *Tufts University:* Roger Fielding, PhD, and Miriam Nelson, PhD. *University of California, Los Angeles:* Robert M. Kaplan, PhD, MA. *University of California, San Diego*: Eric J. Groessl, PhD. *University of Florida, Gainesville:* Marco Pahor, MD (PI); Connie Caudle; Lauren Crump, MPH; and Tonya Kelley. *University of Pittsburgh, Pittsburgh, PA:* Anne B. Newman, MD, MPH (PI); Bret H. Goodpaster, PhD, MS; Stephanie Studenski, MD, MPH; Erin K. Aiken, BS; Steve Anthony, MS; Nancy W. Glynn, PhD; Judith Kadosh, BSN, RN; Piera Kost, BA; Mark Newman, MS; Christopher A. Taylor, BS; and Pam Vincent, CMA. *Wake Forest University, Winston-Salem, NC, Field Center:* Stephen B. Kritchevsky, PhD (PI); Peter Brubaker, PhD; Jamehl Demons, MD; Curt Furberg, MD, PhD; Jeffrey A. Katula, PhD, MA; Anthony Marsh, PhD; Barbara J. Nicklas, PhD; Kimberly Kennedy; Shruti Nagaria, MS; Rose Fries, LPM; and Katie Wickley-Krupel, MS. *Wake Forest University, Winston-Salem, NC, Data Management and Quality Control Center:* Michael E. Miller, PhD (PI); Mark A. Espeland, PhD; Fang-Chi Hsu, PhD; Walter J. Rejeski, PhD; Don P. Babcock, Jr., PE; Lorraine Costanza; Lea N. Harvin; Lisa Kaltenbach, MS; Wesley A. Roberson; Julia Rushing, MS; and Michael P. Walkup, MS. *Yale University:* Thomas M. Gill, MD.

Funding sources and related paper presentations: The Lifestyle Interventions and Independence for Elders (LIFE) Pilot Study is funded by National Institutes on Health/National Institute on Aging Cooperative Agreement #UO1 AG22376. The Wake Forest University Field Center is, in part, supported by the Claude D. Older American Independence Pepper Center #1 P30 AG21332. Dr. Fielding's and Dr. Phillips's contribution is partially supported by the U.S. Department of Agriculture, under agreement No. 58-1950-4-401. Any opinions, findings, conclusion, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Dept of Agriculture.

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Table 1

All Participants Randomized to Physical Activity Intervention, *M* ± *SD* or *n* (%)

Variable	Total randomized (*N* = 213)
Age	76.5 ± 4.1
Race/Ethnicity	
African American/Black	37 (17.4%)
Caucasian/White	160 (75.1%)
Latino, Hispanic, or Spanish	10 (4.7%)
other/mixed	6 (2.8%)
Gender	
female	146 (68.5%)
male	67 (31.5%)
Self-reported health	
excellent	10 (4.7%)
very good	48 (22.5%)
good	115 (54.0%)
fair	35 (16.4%)
poor	4 (1.9%)
other	1 (0.5%)
Systolic blood pressure	131.8 ± 17.1
Diastolic blood pressure	69.2 ± 10.7
Radial pulse	69.2 ± 11.8
Body-mass index	30.7 ± 6.2
# of prescription drugs	5.2 ± 3.2
Depression Scale	7.5 ± 6. 8
Mini Mental State Exam score	27.1 ± 2.4
Any difficulty with activities of daily living	172 (80.7%)
Difficulty walking 1/4 mile	13 (6.1%)
Short Physical Performance Battery score	7.57 ± 1. 45
Grip strength (dominant hand)	25.2 ± 8.7
400-m walk speed (m/s)	0.86 ± 0.18

Table 2

Baseline Demographics, *M* ± *SD* or *n* (%)

Variable	Never suspended (*n* = 122)	Suspended, returned (*n* = 48)	Suspended, never returned (*n* = 43)	*p*
Age	76.4 ± 4.1	76.4 ± 4.2	76.9 ± 4.3	.59
Race/Ethnicity				.77
African American/Black	18 (14.8%)	10 (20.8%)	9 (20.9%)	
Caucasian/White	93 (76.2%)	36 (75.0%)	31 (72.1%)	
Latino, Hispanic, or Spanish	6 (4.9%)	2 (4.2%)	2 (4.7%)	
other/mixed	5 (4.1%)	0 (0.0%)	1 (2.3%)	
refused/missing	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Gender				.30
female	82 (67.2%)	37 (77.1%)	27 (62.8%)	
male	40 (32.8%)	11 (22.9%)	16 (37.2%)	

Table 3

Baseline Health Status, *M* ± *SD* or *n* (%)

Variable	Never suspended (*n* = 122)	Suspended, returned (*n* = 48)	Suspended, never returned (*n* = 43)	*p*
Excellent	6 (4.9%)	4 (8.3%)	0 (0.0%)	.003
Good	66 (54.1%)	30 (62.5%)	19 (44.2%)	
Fair	14 (11.5%)	6 (12.5%)	15 (34.9%)	
Poor	1 (0.8%)	1 (2.1%)	2 (4.7%)	
Other	0 (0.0%)	1 (2.1%)	0 (0.0%)	
Systolic BP	132.2 ± 17.28	135.6 ± 16.78	126.7 ± 16.10	.20
Diastolic BP	69.50 ± 10.24	71.40 ± 10.90	66.12 ± 11.17	.18
Radial pulse	68.79 ± 12.20	70.10 ± 11.79	69.33 ± 11.05	.69
Body-mass index	30.74 ± 5.78	31.19 ± 6.36	30.12 ± 7.38	.70
# of prescription drugs	4.80 ± 2.69	5.33 ± 3.84	6.09 ± 3.48	.02
Depression Scale	7.17 ± 6.66	7.40 ± 6.30	8.58 ± 7.63	.27
MMSE score	27.27 ± 2.36	26.77 + 2.26	26.95 ± 2.65	.32

Note. BP = blood pressure; MMSE = Mini Mental State Exam.

Table 4

Baseline Physical Function, *M* ± *SD* or *n* (%)

Variable	Never suspended (*n* = 122)	Suspended, returned (*n* = 48)	Suspended, never returned (*n* = 43)	*p*
Any ADL difficulty	97 (79.5%)	35 (72.9%)	40 (93.0%)	.05
Difficulty walking 1/4 mile	7 (5.7%)	3 (6.2%)	3 (7.0%)	.96
SPPB score	7.74 ± 1.42	7.60 ± 1.27	7.07 ± 1.64	.01
Grip strength (dominant hand)	25.47 ± 8.83	25.80 ± 7.61	23.96 ± 9.36	.43
400-m walk speed (m/s)	0.87 ± 0.18	0.88 ± 0.16	0.79 ± 0.18	.03

Note. ADL = activities of daily living; SPPB = Short Physical Performance Battery.