Impact of First Step to Active Health on Older Adult’s Functional Fitness, Balance, and Daily Activity
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Abstract. PURPOSE: To determine how the First Step to Active Aging (FSAH) program impacts functional fitness (FF), balance, and daily physical activity (DPA) in older adults. METHODS: The FSAH group consisted of 18 women. FSAH group met at a senior center for 12 wk, 2d wk for a 50 min. training program (flexibility, strength, balance, aerobic). The control group consisted of 15 women. Program effectiveness was assessed using measures of FF (chair stand, arm curl, sit & reach, up & go, scratch test, and 12-min walk), balance (movement velocity (MVL), endpoint excursion (EPE), maximum EPE (MXE), and directional control (DCL) for forward (F), right (R), left (L) and back (B) movements), pedometer measured DPA, and weight. RESULTS: No baseline difference existed between groups. Repeated measures ANOVAs revealed group x time interactions (p<.05) on all measures except flexibility. After 12 weeks, FF improvements were noted in the FSAH group: Chair Stand 46%, Arm Curl 25%; Up- & Go 8%; 12-min Walk 13%. With respect to LOS, MXE improved in all directions (F 18%, R 14%, B 1%, L 10%) and DCL improved in the F direction 9%. DPA also increased from 3,108 to 5,077 steps (63%) and Ss lost 2.3 lbs (2%). The control group did not change in any variable. DISCUSSION: Participating in a FSAH program improves FF, which may result in improved function and more years living independently.

 INTRODUCTION
- Physical activity declines over the lifetime.
- A sedentary lifestyle is common among older adults.
- Functional fitness is a concept that reflects an older adult’s ability to perform activities of daily life with relative ease.¹
- Functional fitness: muscle strength, cardiorespiratory endurance, flexibility, and balance.
- Functional fitness declines with advancing age, negatively affecting quality of life and appears to be influenced by levels of physical activity.²
  - e.g., the age-associated decline in muscle strength is a major cause of physical disability in older people³ and decreased muscular strength and poor balance are major risk factors for falls.⁴

PURPOSE
- To determine how the First Step to Active Aging program (FSAH) impacts functional fitness, balance, and physical activity in older adults.

METHODS
- Participants
  - Quasi-experimental design
  - 18 female participants recruited by public postings enrolled in FSAH class
    - All volunteered for intervention
    - n = 18 (73.0yr ± 7.0 yr)
  - 15 females recruited for Control Group
    - Drawn from previous similar study of identical nature of study setting, population, and project length.
    - n = 15 (75.0yr ± 6.0 yr)
- Intervention
  - The physical activity program was offered at a local senior center twice per week for 50 minutes.
  - The intervention program consisted of:
    - (a) flexibility training; (b) strength training, using elastic resistance bands; (c) balance training, using firm and pliable foam pads; and (d) increasing daily activity as measured by a pedometer
- Pedometer measures
  - Measured by an Omron pedometer

RESULTS
- Balance
  - No baseline differences between groups.
  - Limit of Stability: Maximum distance a participant could lean in a particular direction without losing balance
  - Four targets (front, right, back, left)
  - Outcome Measures
    - Reaction time: amount of time from auditory “go” signal until movement is initiated
    - Movement velocity: quality of movement as indicated by speed of movement
    - Directional control: comparison of amount of movement in intended direction and extraneous movement away from target
    - Endpoint excursion: postural control as indicated by initial shift toward target
    - Maximum excursion: actual extent of the movement
- Functional Fitness
  - Improvements were noted in the FSAH group
    - Chair Stand 35%, Arm Curl 26%, Up- & Go 8%, 12-min Walk 14%

CONCLUSIONS
- Regular physical activity substantially delays the onset of functional limitations and loss of independence.
- Furthermore, previous investigations indicate that strength, aerobic and multi-component training improves mobility and produces sizable improvements in function fitness.

REFERENCES

This project was supported in part by Omron Healthcare through the donation of pedometers and TheraBand Corporation through the donation of elastic resistance bands and stability trainers.