

# Effect of Rewind Yoga<sup>®</sup> on Balance and Functional Fitness: A Preliminary Study

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## ABSTRACT

**Background:** Older adults (65 and older) are a rapidly growing segment of the U.S. population. Only 15.9% of older adults met the current guidelines for physical activity (PA) in 2011, with 28-35% reporting no physical activity. Research shows that balance and functional fitness decline with age and can lead to reduced physical activity and harmful, costly falls. The development of a yoga series specialized for older adults has potential to improve balance and functional fitness which may lead to increased physical activity. Moreover, yoga can be offered on location in senior communities and centers at relatively low cost and travel to participants. **Purpose:** To examine the effect of a newly developed yoga series (Rewind Yoga) on balance and functional fitness as measured by the Senior Fitness test. **Methods:** Older adults (n=15, mean age=67±5) were recruited by flyer to attend Rewind Yoga classes at their local senior center. Classes met 3 times per week for 60 minutes for 12 weeks. The Senior Fitness test battery was administered by an Osteopath to measure functional fitness and balance. Measures were taken at baseline, 6 weeks and 12 weeks. A quasi-experimental design was used with repeated measures ANOVA to compare changes over time. **Results:** Analysis revealed significant improvements in all aspects of the senior fitness test. Baseline, 6 weeks, and 12 week means were as follows: 30 Second Chair Stand (no. of stands) (13, 12, 22 p<0.01), Arm Curl reps (14, 19, 22 p<0.001), 2 Min Step (no. of steps) (79, 102, 114 p<0.001), Sit-and-Reach (inches) (-3.1, 4, 3.5 p<0.001), Back Scratch (inches) (-1.5, 0, 0.1 p<0.001), 8 Foot Up-and-Go (seconds) (7.1, 5.7, 4.9 p<0.001). **Conclusion:** The Rewind Yoga program appears to improve various aspects of balance and functional fitness outcomes. The scalability of Rewind Yoga has potential to help an array of older adults and may be offered directly at community centers.

## BACKGROUND & SIGNIFICANCE

- The number of adults over the age of 65 is expected to double between 2000 and 2030<sup>1</sup>
- Physical Inactivity is a public health concern in older adults
  - Only 15.9% met the current PA recommendations in 2011 and 28-35% of older adults reported no PA<sup>2</sup>
- Balance and functional fitness decline with age which can lead to decreased PA and falls<sup>3</sup>
- A Yoga program specifically designed for older adults may improve balance and functional fitness, critical factors for maintaining independence
- Yoga has the potential to be broadly disseminated in community settings serving seniors and may help increase PA in this population



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## PURPOSE

- To examine the effect of a newly developed yoga series (Rewind Yoga) on balance and functional fitness as measured by the Senior Fitness test

## DESIGN & PARTICIPANT DEMOGRAPHICS

**DESIGN:** A single-group, quasi-experimental design with baseline, mid-program and post-test measures was used to evaluate the effects of Rewind Gold Yoga on functional fitness and dynamic balance.

**PARTICIPANTS:** Participants were community-dwelling seniors (n=15, mean age=67±5) who were recruited by flyers to attend the Rewind Gold Yoga program

## METHODS

**INTERVENTION:** All participants took part in Y-Medica's 12-week yoga program, Rewind Yoga<sup>®</sup>

- Classes met 3 times per week for 60 minutes
- Yoga was modified to participants needs (e.g., could be done seated or standing)

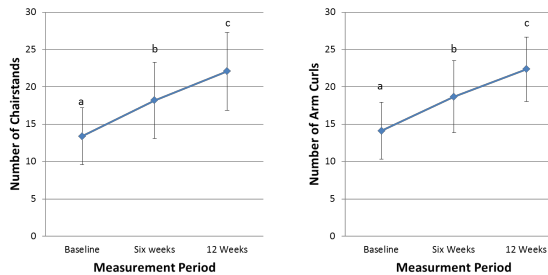
**OUTCOME MEASURES:** The primary outcome measure was functional fitness as assessed by the Senior Fitness Test<sup>4</sup>

- Aerobic endurance was measured with the 2-minute Step test
- Upper and Lower extremity strength were measured with the 30 second arm curl test and the 30-second chair stand test, respectively
- Flexibility was assessed with the Back Scratch Test and the modified Sit and Reach
- Dynamic Balance was measure with the 8-foot up-and-go
- All tests were administered by an Osteopathic physician who was not involved in delivering the yoga program

**DATA ANALYSIS:** Repeated measures analysis of variance (ANOVA) was used to examine changes over time.

## RESULTS

Figure 1. Improvements in measures of lower-body and upper-body strength



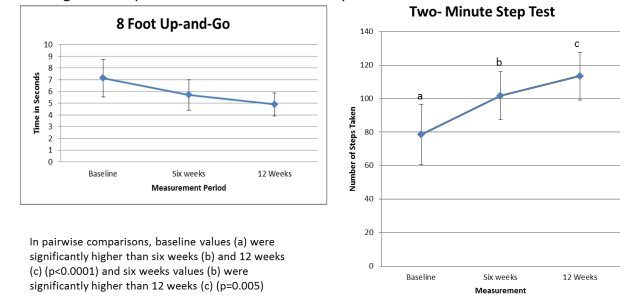
In pairwise comparisons, baseline values (a) were significantly lower than six weeks (b) and 12 weeks (c) (p<0.0001) and six weeks values (b) were significantly lower than 12 weeks (c) (p=0.002)

In pairwise comparisons, baseline values (a) were significantly lower than six weeks (b) [p=0.009] and 12 weeks (c) (p<0.0001) and six weeks values (b) were significantly lower than 12 weeks (c) (p=0.008)

## RESULTS

- Significant improvements over time were observed for all components of the Senior Fitness Test (p <0.001). See **Figure 1** for strength outcomes and **Figure 2** for endurance and dynamic balance outcomes.

Figure 2. Improvements in measures of dynamic balance and endurance



In pairwise comparisons, baseline values (a) were significantly higher than six weeks (b) and 12 weeks (c) (p<0.0001) and six weeks values (b) were significantly higher than 12 weeks (c) (p=0.005)

In pairwise comparisons, baseline values (a) were significantly lower than six weeks (b) (p=0.001) and 12 weeks (c) (p<0.0001) and six weeks values (b) were significantly lower than 12 weeks (c) (p=0.005)

## DISCUSSION

- Findings from this pilot study suggest that Rewind<sup>®</sup>, a yoga program specifically for seniors, is effective at improving functional fitness in older, community-dwelling adults.
- Rewind Yoga<sup>®</sup> may be a feasible way to promote functional independence in older adults by improving physical function and balance
- Additional randomized controlled trials are warranted to examine the efficacy of the Rewind Yoga<sup>®</sup> and the potential for broader-scale dissemination in community-based settings.

## REFERENCES

- U.S. Department of Health and Human Services. Administration on Aging. Aging statistics. Accessed October 14, 2009
- Centers for Disease Control and Prevention. (2013). Adult Participation in Aerobic and Muscle-Strengthening Physical Activities — United States, 2011. MMWR, 62(17), 326-330.
- Chang, J. T., Morton, S. C., Rubenstein, L. Z., Mojica, W. A., Maglione, M., Suttrop, M. J., ... & Shekelle, P. G. (2004). Interventions for the prevention of falls in older adults: systematic review and meta-analysis of randomised clinical trials. *BMJ: British Medical Journal*, 328(7441), 680.
- Rikli, R. E., & Jones, C. J. (1999). Development and validation of a functional fitness test for community-residing older adults. *Journal of aging and physical activity*, 7(2), 129-161

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