



# The Immediate Effects of Star Excursion Balance Training on Balance and Walking Ability in Healthy Elderly People: A Randomized Controlled Trial

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## ABSTRACT

**Introduction:** Aging is defined as a natural process characterized by structural and functional changes. Functional impairments are linked to changes in balance and walking ability with aging. These impairments are the most common cause of falls among the elderly, which also reduce their quality of life. Therefore, balance training is essential for fall prevention in elderly people.

**Objective:** To study the immediate effect of star excursion balance training on balance and walking speed in healthy elderly people.

**Methods:** Thirty-eight participants were aged 60 to 69 years old, both males and females. All participants were randomized into 2 groups including the experiment group that received star excursion balance training (n=19) and the control group that received stretching exercise (n=19). Both groups received 10 minutes of warm-up and cool-down and 30 minutes of exercise per session for 1 session. Static balance control was assessed by measuring the single-leg stance (SLS) test, dynamic balance control was assessed by measuring the time up and go (TUG) test, and walking speed was assessed by measuring the 10-meter walk test (10MWT), respectively. All outcome measurements were tested before and after receiving the intervention.

**Results:** The results revealed that there were no significant differences in all outcome measurements between groups (p>0.05). In comparison within groups, there were no significant differences in the SLS test in both groups (p>0.05). However, there were significant differences in the TUG test and 10MWT after receiving intervention within the experimental group (p<0.05).

**Conclusion:** The immediate effects of star excursion balance training resulted in improved dynamic balance and walking speed. The results of this study will provide useful clinical information for future rehabilitation programs for the elderly. However, this study focused on the immediate effect of star excursion balance training. This may not cover the long-term effects of exercise on balance in the elderly.

**Keywords:** balance; star excursion balance training; elderly; walking speed; randomized controlled trial