

balance, agility, BMD, preventing falls injuries. However, the benefits of an intervention combining both methods are unknown.

**Objectives:**

The aim of present study is to analyse the impact of a program combining physical exercise, cognitive and WBV on determinants factors for falls and fractures in community-dwelling older adults who were fallers or were at high risk of falling.

**Methods:**

Twenty-one older adults aged  $75.4 \pm 5.7$  years attended the program. SSA was assessed by the d2 Test of Attention. Balance, agility, LBS were assessed by Fullerton Advanced Balance (FAB) Scale (p), Timed Up and Go (TUG) (s), and 30-Second chair stand test (rep), respectively. BMD was assessed by DXA.

**Results:**

Wilcoxon or T-Test comparisons showed improvements from baseline to post-intervention on SSA (items processed:  $256.1 \pm 84.9$  vs.  $282.8 \pm 86.3$ ; items recognized correctly:  $97.5 \pm 38.6$  vs.  $107.2 \pm 36.0$ ; items scanned minus total error:  $239.1 \pm 88.5$  vs.  $266.3 \pm 87.5$ ; concentration index:  $93.1 \pm 41.5$  vs.  $102.0 \pm 40.5$ ), balance ( $27.2 \pm 6.7$  vs.  $31.4 \pm 5.5$ ), agility ( $7.6 \pm 1.8$  vs.  $6.6 \pm 1.3$ ), LBS ( $13.1 \pm 5.3$  vs.  $18.0 \pm 5.3$ ), and BMD ( $0.983 \pm 0.11$  vs.  $1.028 \pm 0.11$ ),  $p < 0.05$ .

**Conclusions:**

This preliminary results suggested that the combined intervention program is effective to decreases the risk of falling injuries and fractures by improving determinants risk factors, namely SSA, balance, agility, LBS and BMD.

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## A 12-week physical exercise, cognitive and whole body vibration program can improve physical and cognitive functioning risk factors for falls and fractures in community-dwelling older adults: preliminary results

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**Introduction:**

The lack of selective and sustained attention (SSA), balance, lower body strength (LBS), agility and bone mineral density (BMD) are seen as determinants factors for falls and ractures in older adults. A psychomotor intervention relies on the prevention of cognitive, sensory, perceptive and emotional deterioration, exploring the neuroplasticity. The whole body vibration (WBV) promote the increase of muscle strength,