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# The feasibility of Whole Body Vibration in institutionalised elderly persons and its influence on muscle performance, balance and mobility: a randomised controlled trial [ISRCTN62535013].

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### Abstract

**BACKGROUND:** Fatigue or lack of interest can reduce the feasibility of intensive physical exercise in nursing home residents. Low-volume exercise interventions with similar training effects might be an alternative. The aim of this randomised controlled trial was to investigate the feasibility of Whole Body Vibration (WBV) in institutionalised elderly, and its impact on functional capacity and muscle performance. **METHODS:** Twenty-four nursing home residents (15 female, 9 male; mean age 77.5 +/- 11.0 years) were randomised (stratification for age, gender and ADL-category) to 6 weeks static WBV exercise (WBV+, N = 13) or control (only static exercise; N = 11). Outcome measures were exercise compliance, timed up-and-go, Tinetti-test, back scratch, chair sit-and-reach, handgrip strength and linear isokinetic leg extension. **RESULTS:** At baseline, WBV+ and control groups were similar for all outcome variables. Twenty-one participants completed the program and attended respectively 96% and 86% of the exercise sessions for the WBV+ and control groups. Training-induced changes in timed up-and-go and Tinetti-test were better for WBV+ compared to control ( $p = 0.029$  for timed up-and-go,  $p = 0.001$  and  $p = 0.002$  for Tinetti body balance and total score respectively). In an alternative analysis (Worst Rank Score & Last Observation Carried Forward) the differences in change remained significant on the Tinetti body balance and total score. No other significant differences in change between both groups were observed. **CONCLUSION:** In nursing home residents with limited functional dependency, six weeks static WBV exercise is feasible, and is beneficial for balance and mobility. The supplementary benefit of WBV on muscle performance compared to classic exercise remains to be explored further.

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