Whole-body vibration training increases physical fitness measures without alteration of inflammatory markers in older adults

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Abstract

This study investigated in older adults whether whole-body vibration (WBV) training results in significant increases of physical fitness measures without alterations in markers of inflammation.

Sixteen volunteers completed a WBV programme 3 d.wk(-1) during 9 weeks. The programme consisted of lower and upper-body unloaded static and dynamic exercises.

Training improved significantly several tests which evaluate physical fitness, such as 30-s chair stand, arm curl or chair sit and reach test.

There was a significant increase in maximal voluntary isometric contraction (MVIC) between pre- and post-training conditions. Muscle power values, reached at 20, 40 and 60% MVIC, were also significantly greater after training. However, mRNA or protein levels for C-reactive protein, interleukin-6, interleukin-1β, tumour necrosis factor-α and interleukin-10 did not significantly differ from basal values.

Our data confirm the usefulness of WBV training for counteracting the loss of muscle strength associated with sarcopenia in older adults and show that WBV training could be a safe training method which induces no inflammatory effects.