

Effect of vibratory stimulation training on maximal force and flexibility.

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In this study, we investigated a new method of training for maximal strength and flexibility, which included exertion with superimposed vibration (vibratory stimulation, VS) on target muscles. Twenty-eight male athletes were divided into three groups, and trained three times a week for 3 weeks in one of the following conditions: (A) conventional exercises for strength of the arms and VS stretching exercises for the legs; (B) VS strength exercises for the arms and conventional stretching exercises for the legs; (C) irrelevant training (control group). [The vibration was applied at 44 Hz while its amplitude was 3 mm.](#) The effect of training was evaluated by means of isotonic maximal force, heel-to-heel length in the two-leg split across, and flex-and-reach test for body flexion. The VS strength training yielded an average increase in isotonic maximal strength of 49.8%, compared with an average gain of 16% with conventional training, while no gain was observed for the control group. [The VS flexibility training resulted in an average gain in the legs split of 14.5 cm compared with 4.1 cm for the conventional training and 2 cm for the control groups,](#) respectively. The ANOVA revealed significant pre-post training effects and an interaction between pre-post training and 'treatment' effects ($P < 0.001$) for the isotonic maximal force and both flexibility tests. It was concluded that superimposed vibrations applied for short periods allow for increased gains in maximal strength and flexibility.

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