

**Short-Term Effects of Whole-Body Vibration on Postural Control in Unilateral Chronic Stroke Patients: Preliminary Evidence.**

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**Abstract:**

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The short-term effects of whole-body vibration as a novel method of somatosensory stimulation on postural control were investigated in 23 chronic stroke patients. While standing on a commercial platform, patients received 30-Hz oscillations at 3 mm of amplitude in the frontal plane. Balance was assessed four times at 45-min intervals with a dual-plate force platform, while quietly standing with the eyes opened and closed and while performing a voluntary weight-shifting task with visual feedback of center-of-pressure movements. Between the second and third assessments, four repetitions of 45-sec whole-body vibrations were given. The results indicated a stable baseline performance from the first to the second assessment for all tasks. After the whole-body vibration, the third assessment demonstrated a reduction in the root mean square (RMS) center-of-pressure velocity in the anteroposterior direction when standing with the eyes closed ( $P < 0.01$ ), which persisted during the fourth assessment. Furthermore, patients showed an increase in their weight-shifting speed at the third balance assessment ( $P < 0.05$ ) while their precision remained constant. No adverse effects of whole-body vibration were observed. It is concluded that whole-body vibration may be a promising candidate to improve proprioceptive control of posture in stroke patients.