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The effects of random whole-body-vibration on motor symptoms in Parkinson's disease.

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Abstract

It is well known that applying vibrations to men influences multiple physiological functions. The authors analysed post effects of whole-body-vibration (WBV) on motor symptoms in Parkinson's disease (PD). Sixty-eight persons with PD were randomly subdivided into one experimental and one control group. Motor symptoms were assessed by the UPDRS (Unified Parkinson's Disease Rating Scale) motor score. A cross-over design was used to control treatment effects. The treatment consisted of 5 series of whole-body-vibration taking 60 seconds each. On average a highly significant ($p < 0.01$) improvement of 16.8% in the UPDRS motor score was found in the treatment group. Only marginal changes ($p > 0.05$) were found in the control group. The cross-over procedure showed comparable treatment effects (14.7% improvement after treatment). With respect to different symptom clusters only small changes were found in limb akinesia and cranial symptoms. By contrast, tremor and rigidity scores were improved by 25% and 24%, respectively. According to the structure of symptom changes it is unlikely that these effects are explainable on peripheral sensory level, exclusively. With respect to the findings of other studies one can speculate about changes in activation of the supplementary motor area and in neurotransmitter functions.

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