

Editorial

The scientific interest about the whole-body vibrations exercise (WBVE) has grown along of the time worldwide. WBVE is generated in an individual in contact with the base of a vibratory platform. Hence, mechanical vibration produced in the platform is transmitted to the body of the individual. This mechanical vibration is a physical agent that is characterized by an oscillatory, harmonic and deterministic motion; and biomechanical parameters, as frequency and peak-to-peak displacement must be well defined to the safety and feasibility of the WBVE intervention.

Clinical and experimental studies have been performed to try to improve the comprehension of the effects of the WBVE. Publications have suggested that biological effects would be associated with the tonic vibration reflex and/or to the neuroendocrine responses.

Several important clinical effects of the WBVE have been described, such as (i) increase of the trunk flexibility, strength and power muscle and bone density, (ii) improvement of the quality of life, of the balance and cognition, and (iii) decrease of both pain and risk of falls. Therefore, WBVE can be used in terms of fitness, disease treatment, in rehabilitation program, and, in general termos, for the prevention and promotion of health.

WBVE has been used as an intervention in various populations, as (a) trained and untrained, (b) healthy and unhealthy and (c) young, adult or elderly. Some benefits have been reported. Animals (dog, horse) have also been submitted to the WBVE.

In sports, improvements in the fitness have been described in soccer players, divers, swimmers and combat athletes, athletic throwers, dancers, and ice-hockey players.

Several publications have shown investigations with postmenopausal women evaluating the action of

WBVE related to the frailty and in the improvement of the bone density and in reduction of the fall risks. Individuals with metabolic syndrome, knee osteoarthritis, chronic obstructive pulmonary disease, diabetes and obesity have had benefits due to WBVE intervention. The rehabilitation of subjects holding some disability related to diseases, such as cerebral palsy, osteogenesis imperfecta, spinal cord injury, multiple sclerosis, Parkinson disease, stroke, when using WBVE has revealed the relevance of this intervention. In addition, studies about the applicability of whole-body vibration therapy in intensive care patients have also been reported.

Putting together all the previous considerations, it is very important to highlight the importance of this special issue of HUPE Journal to all Health Sciences professionals that have common interest in the treatment and prevention of diseases, as well as in the promotion of the health.

The readers of this issue will have the opportunity to verify, in the the original papers section, the possibility of applications of the WBVE to cardiac surgery postoperative care. In individuals with metabolic syndrome it is shown the improvement of the flexibility and the reduction of the pain level. Considering the aging, a significant increase in the muscle strength of the hip adductors and the knee extensor muscles in elderly is also reported. Immediate effects of WBVE on thermal symmetry of the lower legs and ankles of healthy subjects are revealed. In addition, the applicability of WBVE as a new tool in Veterinary Medicine is shown. Besides all WBVE uses, it is possible to point out that this clinical intervention is safe, feasible, and cost-effective.

The human cutaneous mechanoreceptive afferents response and the benefits of WBVE to individuals with knee osteoarthritis are reviewed, together with applications of the WBVE in Intensive Care Unit.

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