

## Acute effect of Whole Body Vibration on postural control in a Parkinson's Disease: A Case Report

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Postural instability and resulting falls are major factors determining quality of life, morbidity, and mortality in individuals with Parkinson's disease (PD) (1); the ability to control balance is different in people with Parkinson's Disease (PD). The application of Whole Body Vibration (WBV) at low frequencies in a patient with PD influences physiological and psychological functions. The purpose of this preliminary study was to explore the acute effects of whole body vibration (WBV) on balance and stabilometric parameters, in a patient with PD, during the 20-min post-intervention. Postural sways of the participant was assessed with a stabilometric platform before and after WBV exposure to. Motor symptoms were assessed by the UPDRS (Unified Parkinson's Disease Rating Scale) motor score. The patient was subject to a whole body vibration session (5 set of 1 minute with 1 minute rest) at low frequencies on Double Vibe Bosco Platform. The vibration frequency used was 5 Hz. The assessment of the balance was performed at the baseline (T0), immediately after the exposure (T1), after 10 minutes (T10) and 20 minutes (T20), with Cyber Sabot Plate System. The stabilometric survey was carried out with open eyes. The postural parameters that were analyzed were the Area of the Pressure Center (AREA), Center of Pressure Total Distance (LENGTH) and Variance of Speed (S.VAR). Repeated Measures Analysis of Variance (RM-Anova) was performed to evaluate significant differences among the different variables (Area, Length and S.Var), no significant differences were found for the variables analyzed. Whole body vibration (WBV) training has emerged as an alternative and effective method which allows greater short term improvement in strength and balance with less time of application. No impairments in static balance were found after an acute bout of whole body vibration at low frequency in a patient with PD, consequently, whole body vibration may be considered as a safe application in individuals with PD.

### References

- [1] Park et al. (2015) What Is Wrong with Balance in Parkinson's Disease? *J Mov Disord.* Sep; 8(3): 109–114. [2] Moffa et al. (2017) Acute effect of whole body vibration on balance in blind vs. no blind athletes: a preliminary study; *Sport Sci Health* ISSN: 1824-7490, Vol: 13, Issue: 2, Page: 323-329.

### Key words

Sensory Information, Vibration Training, Postural Sway, Sport Performance.