

ABSTRACT

THESIS: The Effects of Whole Body Vibration on the Wingate Test for Anaerobic Power When Applying Individualized Frequencies

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PAGES: 60

Background: Whole-body vibration (WBV) has been proposed as a viable alternative, or adjuvant to exercise for power development in athletes. More recently individualized frequency (I-Freq) has been introduced with the notion that individuals may elicit a greater reflex response to different levels (Hz) of vibration. **Purpose:** The aim of the study was to evaluate acute WBV as a feasible intervention to increase power in trained cyclists. Additionally, to evaluate the efficacy of utilizing I-Freq as an alternative to 30Hz, a common frequency seen in the literature.

Methods: Twelve highly-trained, competitive male cyclists (age= 29.9 yrs \pm SD 10.0; body height=175.4 cm \pm SD 7.8; body mass= 77.3 kg \pm SD 13.9) free of musculoskeletal injury or pathology participated in the study. The Wingate test for anaerobic power was administered on three occasions following a control of no vibration, 30 Hz, and I-freq. Measures of peak power (PP), average power (AP) and rate of fatigue were recorded and compared to the vibratory conditions using separate RM-ANOVA's. **Results:** PP, AP, and rate of fatigue were not significantly impacted by 30 Hz and I-Freq vibration interventions ($p > 0.05$). **Conclusion:** Acute WBV using the parameters of the present study may not have been practical to elicit an increase

in power as potential changes in the highly trained population may have been muted as a function of training status.