

The Acute Effects of Whole Body Vibration on Muscular Power and Agility

Cara J. Cordrey, Brady L. Tripp, *Patrick Jacobs, Richard Lopez, Michelle L. Odai
Florida International University, Miami, FL
*Florida Atlantic University, Boca Raton, FL

Context: While research suggests whole body vibration (WBV) positively affects measures of neuromuscular performance in athletes, researchers have yet to address appropriate and effective vibration protocols. **Objective:** To identify the acute effects of continuous and intermittent WBV on muscular power and agility in recreationally active females. **Design:** We used a randomized 3-period cross-over design to observe the effects of 3 vibration protocols on muscular power and agility. **Setting:** Sports Science and Medicine Research Laboratory at Florida International University. **Patients or Other Participants:** Eleven recreationally active female volunteers (age=24.4±5.7y; ht=166.0±10.3cm; mass=59.7±14.3kg). **Interventions:** Each session, subjects stood on the Galileo WBV platform (Orthometrix, White Plains, NY) and received one of three randomly assigned vibration protocols. Our independent variable was vibration length (continuous, intermittent, or no vibration). **Main Outcome Measures:** An investigator blinded to the vibration protocol measured muscular power and agility. We measured muscular power with heights of squat and countermovement jumps. We measured agility with the Illinois Agility Test. **Results:** Continuous WBV significantly increased SJ height from 97.9±7.6cm to 98.5±7.5cm ($P=0.019$, $\beta=0.71$, $\eta^2=0.07$) but not CMJ height [99.1±7.4cm pretest and 99.4±7.4cm posttest ($P=0.167$, $\beta=0.27$)] or agility [19.2±2.1s pretest and 19.0±2.1s posttest ($P=0.232$, $\beta=0.21$)]. Intermittent WBV significantly enhanced SJ height from 97.6±7.7cm to 98.5±7.7cm ($P=0.017$, $\beta=0.71$, $\eta^2=0.11$) and agility 19.4±2.2s to 19.0±2.1s ($P=0.001$, $\beta=0.98$, $\eta^2=0.16$), but did not effect CMJ height [98.7±7.7cm pretest and 99.3±7.3cm posttest ($P=0.058$, $\beta=0.49$)]. **Conclusion:** Continuous WBV increased squat jump height, while intermittent vibration enhanced agility and squat jump height. Future research should continue investigating the effect of various vibration protocols on athletic performance. **Key Words:** neuromuscular enhancement, athletic performance, jump