

**ACSM's 55th Annual Meeting
At the Crossroads of Science and Practice**

May 28-31, 2008
Indianapolis, Indiana, USA

**** SESSION ** Cardiovascular: Acute Exercise**

Presentation Number: 1738

Title: **Addition of Whole-Body Vibration to Static Semi-Squat Exercise Has Minimal Affect on Selected Cardiovascular Responses**

Presentation Start: 5/29/2008 9:00:00 AM

Presentation End: 5/29/2008 10:30:00 AM

Topical Category: 204 acute exercise

Authors: Tom J. Hazell, Graeme Thomas, Jason R. DeGuire, Peter W.R. Lemon, FACSM. University of Western Ontario, London, ON, Canada.

Email: thazell@uwo.ca

Recently, whole-body vibration (WBV) exercise has been promoted as a new training modality. However, limited data are available on the cardiovascular (CV) effects of WBV leading to apprehensiveness when prescribing WBV training to individuals with CV risks. **PURPOSE:** To assess the effects of an acute bout of vertical WBV exercise on heart rate (HR), mean arterial pressure (MAP), femoral artery blood flow (BF), and ankle area skin temperature (TEMP). **METHODS:** Male subjects (n=8) participated in a seated experimental protocol (age=25±3 years, height=178±6 cm, mass=80±10 kg; mean+SD), i.e., feet flat on the WBV platform (knees at 90° flexion). Another 8 males participated in two static semi-squat experimental protocols (age=25±3 years, height=177±7 cm, mass=84±12 kg), i.e., maintained a static semi-squat position (knees at 120° flexion); one with and one without exposure to WBV. All experimental protocols involved 1 min exercise exposure separated by 1 min rest, repeated 15 times (WBV was a vertical vibration stimulus with a frequency of 45 Hz and an amplitude of 4 mm, WAVED). HR, MAP, BF (Doppler) and TEMP were examined at baseline, after 4, 8, and 12 min of vibration, and at 0.5, 2, 5, and 10 min recovery. **RESULTS:** Seated Protocol - No significant effects were found over baseline. Static Semi-Squat Protocol - Static semi-squat exercise increased MAP (-10-15 mmHg; p<0.05) but not HR, BF or TEMP. Static semi-squat exercise with WBV had no further effect on HR or MAP but did increase BF (158.73 cm/s; p<0.05) and TEMP (3.1°C; p<0.05). **CONCLUSION:** The addition of WBV to static semi-squat exercise did not affect HR or MAP but did increase BF and TEMP significantly. This suggests that WBV is not a significant additive stress on the CV system in healthy young men. Further investigation of the increase in BF is warranted

for possible exercise warm-up and/or rehabilitation benefits. **Supported in part by Wave Manufacturing Inc., Windsor, Canada.**

American College of Sports Medicine
401 West Michigan Street
Indianapolis, IN 46202-3233
(317) 637-9200