

Acute Effects of Yoga on a Vibration Platform on Heart Rate, Blood Pressure, Flexibility, and Vertical Jump

RICARDO PARRA, ELIJAH LOPEZ, JASON MENDOZA, JOSHUA FRONK, ARNOLD JIMENEZ, ASHLEY RIVAS, and MURAT KARABULUT

Exercise Physiology Laboratory; Department of Health and Human Performance;
University of Texas – Rio Grande Valley; Brownsville, TX

Category: Masters

Advisor / Mentor: Karabulut, Murat (Murat.Karabulut@utrgv.edu)

ABSTRACT

Both yoga and whole-body vibration exercise may have a wide-range of positive effects independent of each other. **PURPOSE:** The purpose of this study was to examine the acute effects of yoga performed on and off a vibration platform on blood pressure, flexibility, and vertical jump. **METHODS:** Subjects (n = 14; 9 females, 5 males; mean age = 22.5 ±1.9) completed 3 randomized protocols of yoga on and off a vibration platform. The testing protocols were: 1) yoga poses on vibration platform with low frequency and low amplitude (PPL), 2) yoga poses on platform with high frequency and high amplitude (PPH), and 3) traditional yoga performed on a flat, static surface (CON). Following a general warm-up, two trials (30 s rest between) of the vertical jump (CMJ) and the sit-and-reach test (SR) were performed by each subject. The best values for each test were recorded for statistical analysis. After the culmination of the pre-tests, the subjects performed two rounds of 8 different poses, holding each pose for 30 s, resting 60 s between each pose. HR and BP were taken between each pose during rest. HR and BP were recorded while the subject was at rest for 20 minutes (5-minute intervals) following protocols. **RESULTS:** There were no significant time*gender interaction, condition main effect, or time main effect for CMJ, however a significant time main effect was observed for SR (p<0.01). A significant decrease in SBP was observed following the PPH session at the 10-minute mark post-exercise (p<0.02). Diastolic blood pressure (DBP) showed a significant time difference (p<0.03), and there was also a trend for time*gender interaction (p=0.062). Changes in DBP values following exercises were higher in males than the values in DBP seen in females. There were significant time main effect (p<0.01) and significant time*gender interaction for heart rate (p<0.01). **CONCLUSION:** The significant decrease in SBP following a bout of yoga on a vibration platform at high frequency and amplitude could be due to a greater activation of skeletal muscle resulting in a higher level of physiological changes such as increased local temperature, and/or by-products, and/or mechanical activity of muscle fiber leading to greater levels of vasodilation and decreased total peripheral resistance. The findings may have a practical application as an alternative treatment for high blood pressure. Future studies should investigate chronic effect of yoga on vibration platform on blood pressure.