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**** SESSION **** Neural Control and Balance

Presentation Number: 2439

Title: **The Effects of 4 Different Acute Whole Body Vibration Exposures upon Indices of Counter Movement Vertical Jump Performance**

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The use of whole body low frequency vibration to acutely excite the neuromuscular system is gaining popularity. **PURPOSE:** To investigate the affects of four different whole body vibration applications upon indices of vertical jump performance. **Methods:** Twenty-one recreationally trained males (179.1 ± 5.6 cm in height, 84.7 ± 11.4 kg in weight and 26 ± 12 yrs of age) participated in two, non-consecutive visits. Subjects performed 12 counter movement vertical jumps (CMVJ) upon a Just Jump System switch mat in a standardized position. The CMVJ'S were performed in four series [pre-vibration (T1), two minute post-vibration (T2), five-minutes and 30 seconds post-vibration (T3), 11 minutes post-vibration (T4)] of three trials. Vibration treatments were given at a frequency of either 30 Hz or 50 Hz (continuous or intermittent) for a total of 30 seconds, for a total of four conditions. On each visit, subjects received two randomly assigned vibration treatments. **Results:** Jump height after intermittent vibration of 50 Hz was greater than after continuous vibration of 30 Hz ($p = 0.039$). Overall, differences were found among the four conditions and the four series for peak power ($p = 0.022$ and $p = 0.035$, respectively), relative peak power ($p = 0.028$ and $p = 0.036$, respectively), FITRO[®]dyne mean power ($p = 0.012$ and $p = 0.003$, respectively), and Lewis nomogram mean power ($p = 0.014$ and $p = 0.018$, respectively). The two-minute post-vibration trial had significantly higher mean power than all other trials ($p < 0.05$). Additionally, the pre-vibration trial yielded lower FITRO[®]dyne mean power values than the trials post-vibration ($p = 0.035$). Lastly, the intermittent vibration at 50 Hz yielded greater mean power than the continuous bouts of vibration ($p < 0.05$). **Conclusion:** The use of an intermittent vibration protocol at a frequency of 50 Hz appears to be more effective than continuous vibration at a lower frequency of 30 Hz at enhancing acute indices of vertical jump performance.