



## Mid Atlantic Regional Chapter of the American College of Sports Medicine

45<sup>th</sup> Annual Scientific Meeting, November 4<sup>th</sup>- 5<sup>th</sup>, 2022  
Conference Proceedings

International Journal of Exercise Science, Issue 9, Volume 11



### Autonomic Nervous System Responses to a Bout of Vinyasa Yoga and Prolonged Seated Control

Alexis N. Thrower<sup>1,3</sup>, Abdullah Alansare<sup>2</sup>, Bethany Barone Gibbs<sup>1</sup>, Sally A. Sherman<sup>3</sup>, Kelliann K. Davis,<sup>3</sup>FACSM. <sup>1</sup>West Virginia University, Morgantown, WV, <sup>2</sup>King Saud University, Riyadh, Saudi Arabia, <sup>3</sup>University of Pittsburgh, Pittsburgh, PA

The leading cause of death worldwide is cardiovascular disease. One approach to reduce cardiovascular disease risk is to participate in regular physical activity, in part due to improved autonomic nervous system function. Vinyasa yoga is a recently recognized form of moderate-intensity physical activity that may improve cardiovascular and autonomic function, yet its effects have not been thoroughly studied. **PURPOSE:** To examine the effect of vinyasa yoga compared to a seated control session on measures of autonomic nervous system/cardiovascular function, including systolic blood pressure (SBP), heart rate (HR), and heart rate variability (HRV). **METHODS:** Eighteen subjects were enrolled in a randomized crossover design with two experimental conditions: (i) 60 minutes of vinyasa yoga; (ii) documentary viewing while seated (control). Baseline, 5-minute and 65-minute post-condition measurements included SBP, HR, and HRV [standard deviation of normal-to-normal R-R intervals (SDNN), root mean square of successive differences (RMSSD), and high frequency (HF)]. **RESULTS:** SBP was significantly lower post yoga at 5 minutes (-8.14 mmHg,  $p=0.001$ ) but not 65 minutes (-2.76 mmHg,  $p=0.136$ ) compared to the seated control. HR was higher post yoga at 5 minutes (+10.49 bpm,  $p<0.01$ ) and 65 minutes (+4.70 bpm,  $p<0.01$ ) compared to the seated control. HRV was lower post yoga at 5 minutes for SDNN, RMSSD, and HF (all  $p<0.01$ ) and at 65 minutes for SDNN and RMSSD only (both  $p<0.001$ ) when compared to the seated control. **CONCLUSION:** Compared to sitting, a 60-minute bout of vinyasa yoga produced a hypotensive BP response without other improvements in cardiovascular autonomic function (HR and HRV). These findings suggest that complex mechanisms influence the cardiovascular responses to vinyasa yoga. Future studies with more comprehensive assessments of autonomic and cardiovascular function and measurement of chronic training effects on cardiovascular health are warranted.