The Effects of Venous Pooling During Prolonged Sitting on Central Arterial Stiffness
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Higher arterial stiffness (AS) and prolonged sitting (PS) increases chances for cardiovascular disease (CVD) risk. Though, the mechanism for increased AS during PS is unclear. The objective of this research study is to determine the effect of VP manipulation on central AS. The hypothesis was that increased brachial-femoral pulse wave velocity (bfPWV) and VP would increase AS. The design of this study was a randomized cross-over trail with 15 participants who are healthy adults. Participants were recruited to one of two groups, a group where occlusive cuffs were applied bilaterally to the legs to induce VP and the other a control condition without the cuff. bfPWV and hemodynamic values were compared before and after intervention using a linear mixed model, and then VP and calf circumference were quantified. The results were different from the original hypothesis. There were significant results of the data regarding VP by measurement of the calf circumference, so VP did take place, however it cannot be said that this caused AS. bfPWV increased after PS, but there was no interaction effect between VP and AS in this data. This data could aid in identifying factors that elevate CVD risk to provide the foundation for future research.