Heath and Exercise Science Senior Thesis Projects
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Title of Thesis: The acute effect of Monster Energy consumption on arterial stiffness in college-aged students.

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Abstract

Arterial stiffness, a loss in the elastic nature of the arteries, is associated with cardiovascular disease. Energy drinks and smoking have been shown to impair endothelial function and increase blood pressure, thereby damaging the vasculature and increasing arterial stiffness. The purpose of the current study was to assess the acute effect of Monster Energy on arterial stiffness in college-aged students (N=16). Secondly, the effect of Monster Energy on arterial stiffness was evaluated based on smoking status. The study employed a randomized cross over design in which two experimental trials (water, Monster Energy) were performed. Arterial stiffness was assessed in a pre and post intervention using an Arteriograph to measure pulse wave velocity, peripheral and central augmentation index, systolic blood pressure, diastolic blood pressure and heart rate. The major findings of this study were that pulse wave velocity was increased after the consumption of Monster Energy compared to water. Systolic and diastolic blood pressure also increased after consuming Monster Energy, which suggests that Monster Energy has an influence on sympathetic tone, leading to increased arterial stiffness. In smokers, it appeared that pulse wave velocity significantly increased after drinking water compared to nonsmokers, with no differences seen after consuming Monster Energy. In conclusion, Monster Energy consumption acutely increases arterial stiffness, reflected by an increase in pulse wave velocity and blood pressure.