

# **Abstract for Adaptations in Cardiovascular Health in Response to a 2-Week Exercise Microcycle**

Anna Churchill, Riley Correll, Olivia Furlong

Advisors: Dr. Stephen Ives and Dr. Justin DeBlauw

## **Abstract**

**INTRODUCTION:** Physical inactivity and poor cardiorespiratory fitness (CRF) threaten public health, contributing to rising rates of obesity, cardiovascular disease (CVD), and related comorbidities. To mitigate these public health crises, the use of training programs that are personalized to an individual's baseline characteristics may possess the greatest potential to improve overall health and improve performance. Consequently, the present study aimed to use such an approach to determine the effects of a two-week endurance or resistance training exercise microcycle on measures of cardiovascular health. **METHODS:** This study utilized a crossover design study for subjects to participate in both endurance and resistance training aspects. Measures of performance and cardiovascular health were monitored pre-study, in between intervention periods, and post study. **RESULTS:** There were significant decreases in both central and peripheral systolic blood pressure pre vs. post endurance training (Cohen's  $D = 1.264$ ,  $p = 0.048$ ; Cohen's  $D = 1.753$ ,  $p = 0.017$ ). Although not significant, body fat decreased by 1.18 % after endurance training and muscle mass increased by 1.28 kg post resistance training. **DISCUSSION:** Central and peripheral systolic blood pressure were significantly improved after the endurance training microcycle. This positively interacts with functions of the heart to decrease risk for CVD. There was a larger increase in muscle mass after the resistance training microcycle, and a greater decrease in body fat after the endurance training microcycle, which positively interacts with metabolism to decrease risk for CVD.