

**EXAMINING THE BENEFITS OF REGULAR EXERCISE ON CARDIOVASCULAR  
DISEASE RISK FACTORS IN STUDENTS AT U.W.I, ST. AUGUSTINE.**

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**Background:** Globally, cardiovascular disease remains the leading cause of death, claiming an estimated 17.3 million persons in 2008. The WHO projects that by the year 2030 over 23 million persons will die from CVDs annually. Over 80% of cardiovascular deaths occur in low and middle income countries such as those found in the Caribbean region.

**Objective:** To determine whether regular exercise is cardioprotective in this population via anthropometric and laboratory evaluations among athlete and non-athlete participants

**Design:** This study, which utilized a case-control design was conducted at the University of the West Indies (U.W.I), St. Augustine campus. Data collection was conducted in two phases from October 2013 to April 2014. The study population consisted of young adults, primarily from the 18-34 age group, divided into non-athlete (case) and athlete (control) subgroups. A total of 304 participants were recruited via purposive/judgemental sampling. The sample consisted of with one hundred and ninety eight (198) cases and one hundred and six (106) controls. In phase one anthropometric (weight, height, BMI, waist circumference, body composition) and physiologic (fasting blood glucose, HbA1C, lipid panels) data for one hundred and eighty nine (189) participants including one hundred and forty (140) non-athletes and forty-nine (49) athletes was collected. In phase two, part A, one hundred and thirteen (113) participants completed a 40-item questionnaire which assessed demographic data, physical activity levels, exercise frequency, barriers to regular exercise, health perceptions and food frequency. Additionally, anthropometric and blood pressure measurements were taken in this phase. Part B of phase two involved physiologic measurements for the one hundred and one (101) participants that returned inclusive of 51 athletes and 50 non-athletes. Anthropometric and physiologic measurements were used to assess cardiovascular disease (CVD) risk factor prevalence.

**Results:** Several CVD risk factors were more prevalent in the case group. Eight of ten cardiovascular disease risk factors were more prevalent in non-athletes with large waist circumferences ( $p=0.014$ ), excess adiposity ( $p=0.001$ ), low HDL cholesterol ( $p=0.001$ ) and elevated triglycerides ( $p=0.01$ ) being significantly more prevalent in cases than controls. The most prevalent CVD risk factor was high body fat percentage (36.9%). The main barrier to exercise was lack of external motivation (59.6%). Red meat consumption was positively correlated with elevated systolic and diastolic blood pressures ( $p=0.005$  and  $p=0.005$  respectively). Several significant correlations were also demonstrated among cardiovascular disease risk factors.

**Conclusion:** Fewer CVD risk factors were presented in the athlete group as compared to the non-athlete group hence, it was established that regular exercise was indeed cardioprotective. Regular exercise was found to be protective against eight of ten risk factors with the most

significant variances found in waist circumference, body fat percentages, and HDL cholesterol levels. The presence of possible confounding factors leading to elevated blood pressure in male athletes was also highlighted. Several meaningful relationships between and among CVD risk factors were shown. . Lack of external motivation was highlighted as the greatest barrier to exercise among males and females, athletes and non-athletes. The study has several implications for future research in terms of overcoming barriers to exercise and the correlations between and among CVD risk factors