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## Cardiovascular Health Improvements with Diet and Exercise Intervention

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Obesity has become an epidemic that can be brought on by genetics, diet, and overall lifestyle. The disease of obesity is associated with clinical conditions like hypertension, diabetes, and cardiovascular (CV) disease. Increased body fat and adipocyte levels are related to circulating cytokine and adipokine levels. Circulating adiponectin levels are related to glucose regulation, fatty acid synthesis, inflammation, and vascular health. **PURPOSE:** This study was a pilot study for a senior project. We examined changes in CV risk factors with a diet and exercise intervention to hypothesize how adiponectin levels could respond. **METHODS:** We conducted a 6-week short-term diet and exercise intervention. Pre- and post- testing included a fitness test and a fasted visit to measure biomarkers of CV health. **RESULTS:** 13 adults completed the study ( $38.8 \pm 12.2$  yrs; 8M, 5F), with intervention adherence of 87.62%. We found improvements in blood pressure (BP,  $125.5/79.9$  to  $121.9/78.4$  mmHg), lipid levels (Cholesterol, TC, dropped from  $182.6 \pm 32$  to  $168.6 \pm 21$  mg/dL; Triglycerides, TG, dropped from  $122.1 \pm 70$  to  $110.1 \pm 74$  mg/dL), body composition(% fat dropped from  $30.1 \pm 7.6$  to  $27.7 \pm 6.8\%$ ), and fitness levels ( $VO_{2peak}$  increased from  $37.5 \pm 10.2$  to  $40.6 \pm 11.6$  ml/kgmin; strength increased from  $335.9 \pm 89$  to  $374.5 \pm 104$  lbs for lower body and  $45 \pm 20$  to  $49.5 \pm 18$  lbs in upper body). We also found improvements with vascular health (Augmentation Index, AIx, decreased from  $11.5 \pm 11$  to  $9.3 \pm 9$  and IMT levels decreased from  $0.47$  to  $0.46$ mm). With regression we also saw significant relationships between AIx with TC ( $0.603$ ,  $p=0.03$ ) and with TG ( $-0.885$ ,  $p=0.00$ ). **CONCLUSION:** We found improvements in blood pressure, lipids, vascular health and fitness. We also found that stiffer vessels are related to lipid levels and blood pressure. Based on the preliminary data of physical variables, we anticipate an increase of adiponectin levels with a diet and exercise intervention.