

Physical, Cardiovascular, & Metabolic Effects of Non-Exercise Weighted Vest Training

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ABSTRACT

The high prevalence of obesity and sedentary lifestyle contribute to the growing burden of health care costs, incidence of disease, and mortality, making a lifestyle that includes regular physical activity increasingly important. Low intensity resistance training has been studied as a possible intervention to increase physical activity in inactive individuals. To determine the effects of a weighted vest treatment (WV) on steady state VO_2 , O_2 deficit, $\text{VO}_{2\text{max}}$, body mass index (BMI), and resting blood pressure (RBP). Fourteen college age women participated in a 4 week trial and completed both pre and posttest evaluations. These evaluations included a submaximal exercise bout, a maximal graded exercise test, determination of BMI, and measurement of RBP. Seven participants wore a weighted vest, fitted with 10% of their body weight, during normal daily activities for a minimum of 10 hours a day, 5 days each week. The remaining 7 participants served as a control group. ANCOVAs, with pretest measures serving as the covariates, were conducted to determine the effect of WV on posttest responses. Mean (sd) pre-test O_2 deficit values were 0.64 (0.18) and 0.68 (0.18) for the control and WV groups, respectively. Mean (sd) post-test O_2 deficit values were 0.62 (0.15) and 0.38 (0.17) for the control and WV groups, respectively. Results of the ANCOVA revealed a significant effect of WV on O_2 deficit with O_2 deficit values being lower following WV ($F(1,11) = 7.30, p = 0.02$). Further, WV accounted for about 40% of the change observed in posttest O_2 deficit values ($\eta_p^2 = 0.40$). However, no significant effect of WV was seen on steady state VO_2 , $\text{VO}_{2\text{max}}$, BMI, or RBP. WV resulted in lower O_2 deficit values suggesting that it could elicit training effects related to improved aerobic function. Possible explanations for the lack of effects on other variables could be related to the limitations imposed by the relatively small sample size and trial length. Future studies designed with larger sample sizes and longer trial periods might prove more effective in evaluating the effect of WV on eliciting health related benefits.

