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**Effects of Aerobic Exercise on Hunger in Normal Weight and Obese Adults: A Pilot Study**

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Obesity is a major public health issue in the United States. The prevalence of obesity affects an estimated 100.1 million US adults and is an independent risk factor for cardiovascular disease, type II diabetes mellitus, and cancer. Aerobic exercise (AE) is a lifestyle therapy we and others have shown to suppress appetite-regulating hormones in normal weight (NW) and obese (OB) adults; however, the effects of acute AE on subjective measures of perceived hunger are limited. **PURPOSE**: To examine the acute effects of AE on perceived hunger in a pilot sample of NW and OB adults. **METHODS**: Nine adults with NW (n=4, body mass index [BMI] = 21.3$\pm$1.2 kg/m$^2$ ) and OB (n=5, BMI = 38.9$\pm$6.2 kg/m$^2$) completed a preliminary health/fitness assessment. Participants returned to the laboratory on three separate occasions, separated by $\geq$ 48 hours to perform cycle exercise at 30% and 60% oxygen uptake reserve ($VO_2R$), or a seated control session with no exercise for 40 min. Perceived hunger was assessed with a validated 0 (Not Hungry) to 16 (Very Hungry) visual analog scale before and after exercise and control. Nonparametric procedures assessed pre-to-post differences in perceived hunger between exercise and control conditions for NW and OB. Alphas were set *a priori* to $p < 0.10$. **RESULTS**: For the total sample, significant mean rank differences were observed between pre-light and pre-vigorous ($p$=.059), pre-light and post-vigorous ($p$=.068) and pre-light and post-control ($p$=.020). Between NW and OB, significant mean rank differences were found for pre-light ($p$=.090). Significant correlations were identified between pre-and-post control ($r$=.854, $p$=.004), light ($r$=.805, $p$=.009), and vigorous ($r$= -.712, $p$=.032). No other mean rank differences or relationships were identified for the total sample or between NW and OB ($p$ >.10). **CONCLUSION**: We found differences in perceived hunger after compared to before vigorous but not light AE or control conditions. **SIGNIFICANCE/NOVELTY**: Our findings support the premise that AE performed at vigorous intensities can regulate appetite-stimulating hormones and perceived hunger, perhaps creating an interdependent paradigm whereby energy expenditure suppresses energy intake as a weight management strategy.