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### Does 2-Weeks of Aerobic or Resistance Exercise Microcycles Elicit Different Health Improvements in Untrained Adults?

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Physical inactivity and poor cardiorespiratory fitness (CRF) threaten public health, contributing to rising rates of obesity, cardiovascular disease (CVD), and related comorbidities. While aerobic training (AT) and resistance training (RT) are effective exercise training modalities for the improvement of health, individuals cite a lack of time as a primary reason for not meeting the AT and RT guidelines. Due to the inability to meet the recommended AT and RT, identifying which modality provides the most initial health benefits may provide insight into initial exercise recommendations for untrained individuals. **PURPOSE:** To investigate the effect of 2 week aerobic and resistance training microcycles on body composition, resting cardiovascular function, and CRF in healthy untrained adults. **METHODS:** In a randomized crossover design study, eight healthy adults ( $n=8$ ,  $29.8\pm 9.5$  yrs) engaged in 7 sessions (~60-minutes per session) of either AT or RT with a 14-day washout in-between. Anthropometrics (height, weight, body mass index, and body composition), resting cardiovascular function, and CRF were assessed at baseline and after each microcycle. Paired sample t-tests were used to determine the effect of time and condition. **RESULTS:** Following AT, central systolic blood pressure (cSBP) increased 8.5 mmHg ( $p=0.027$ ,  $d=0.984$ ), peripheral systolic blood pressure (pSBP) increased 10.4 mmHg ( $p=0.01$ ,  $d=1.254$ ), and mean arterial pressure (MAP) increased 6.6 mmHg ( $p=0.045$ ,  $d=0.861$ ), compared to baseline. Following RT, pSBP increased 8.4 mmHg ( $p=0.028$ ,  $d=0.979$ ) and resting heart rate (rHR) increased 7.0 bpm ( $p=0.032$ ,  $d=0.94$ ), compared to baseline. No other significant anthropometric or cardiovascular changes were observed following AT or RT (all,  $p>0.05$ ). No significant change in  $VO_{2peak}$  was observed following AT or RT ( $p>0.05$ ). No significant differences were observed between AT or RT interventions (all,  $p>0.05$ ). **CONCLUSION:** A microcycle of AT or RT was not sufficient to induce significant changes in body composition or CRF in untrained individuals. Additionally, we observed that microcycles of AT and RT training appeared to negatively impact resting cardiovascular function by increasing systolic blood pressure (peripheral and estimated central) in untrained healthy adults. This may suggest that the short-term responses to exercise training may be biphasic, inducing initial increases, followed by the well-documented hypotensive effect of exercise training. **SIGNIFICANCE/NOVELTY:** Two-week microcycles of aerobic and resistance training do not improve body composition and CRF in untrained healthy adults but may actually increase systolic blood pressure in the short term.

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