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Abstract

OBJECTIVES: To determine changes in lung function following an acute bout of high intensity interval exercise (HIIE), moderate intensity interval exercise (MIIE), and moderate intensity continuous exercise (MICE) in adults with airway hyper-responsiveness (AHR). **DESIGN:** A randomized cross-over design was used. **METHODS:** Participants completed five laboratory sessions: 1) eucapnic voluntary hyperpnea challenge 2) maximal exercise test to determine peak power output (PPO) and, 3-5) HIIE (90% PPO for 1 minute followed by 10% PPO for 1 minute, repeated 10 times), MIIE (65% PPO for 1 minute followed by 10% PPO for 1 minute, repeated 10 times) and MICE (65% PPO for 20 minutes). Lung function was assessed pre and post-exercise. **RESULTS:** Thirteen participants (age: 21.1 ± 2.7 years) with mild/moderate asthma completed all protocols. Lung function was significantly lower following the MICE ($-14.8\% \pm 12.2$) protocol compared to the HIIE ($-7.1\% \pm 8.3$) and MIIE ($-4.5\% \pm 3.3$). **CONCLUSION:** It appears that MICE is associated with the greatest decline in post-exercise FEV₁ among those with AHR. Interval exercise may be better tolerated than continuous exercise among those with AHR.

Keywords: Bronchoconstriction, exercise-induced asthma, pulmonary function, asthma, interval exercise.

Introduction

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