

Effects of Warm Up Intensity on Factors Related to Subsequent Performance of Submaximal Exercise

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ABSTRACT

INTRODUCTION: Athletes often warm up (WU) prior to exercise to improve performance. However, there are no clear directives regarding the intensity of the WU that is most effective in improving physiological responses related to enhanced aerobic performance. **METHODS:** Nine college-aged men (age, ht, mass, 20.6 yr, 1.7 m, 84.8 kg, respectively) performed WU of varying intensities, 60% ventilatory threshold (VT), 100%VT, and 120%VT prior to performing 5 min of steady state exercise at 80%VT on a cycle ergometer. O₂ deficit, RPE, steady state heart rate (HR_{ss}), and steady state VO₂ (VO_{2ss}) were measured during the exercise bout. **RESULTS:** There was a significant decrease in O₂ deficit as WU intensity increased ($F(2,9)=9.15$, $p=.002$, $\eta^2=0.53$) with the deficit being lowest after WU at 120%VT. RPE were significantly lower after WU at 120%VT than both 60% and 100%VT ($F(2,9)=6.88$, $p=.007$, $\eta^2=0.46$). However, WU intensity did not significantly affect either HR_{ss} ($F(2,9)=0.48$, $p=0.63$) or VO_{2ss} ($F(2,9)=1.10$, $p=0.36$) during the exercise bout. **CONCLUSION:** The findings suggest that a higher intensity WU improves factors related to improved aerobic performance, i.e. decreased O₂ deficit and RPE, without adversely affecting factors that could lead to a decline in performance, i.e. increased HR_{ss} and VO_{2ss}.