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Research article

from September
2014**Reduced Muscle Pain Intensity Rating During
Repeated Cycling Trials**Peter S. Micalos , Frank E. Marino, Derek Kay

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ScholarGoogle[Author Information](#)[Publish Date](#)[How to Cite](#)[Email link to this article](#)[Full Text](#)[PDF](#)**ABSTRACT**

The purpose of this study was to investigate muscle pain intensity rating using a 10-point category-ratio pain intensity scale during self-paced cycling exercise within three trials. Eleven subjects (age 21.4 ± 2.6 years; $VO_{2\text{ peak}} 3.3 \pm 0.9 \text{ L}\cdot\text{min}^{-1}$) performed a 60-min cycling trial on three occasions. During each trial subjects cycled at the utmost work intensity for 60-min. To simulate competitive training, 1-min maximal effort sprints were performed every 10-mins into the trial. Ambient temperature and relative humidity were set at $33 \pm 0.7 \text{ }^{\circ}\text{C}$ and $63 \pm 2.0\%$, respectively. During exercise, subjects ranked the muscle pain intensity at 5 min intervals and following each sprint effort. Simple main effects revealed that muscle pain intensity ratings were significantly lower in trial 3 compared with trial 1 at the 50 min [$F = 4.5(2, 30)$; $p = 0.015$, $\eta^2 = 0.05$], 55 min [$F = 4.89(2, 30)$; $p = 0.011$; $\eta^2 = 0.05$], and 60 min [$F = 3.6(2, 30)$; $p = 0.034$; $\eta^2 = 0.04$] time interval. Repeated measures ANOVA revealed a significant increase in the mean distance cycled amongst the trials ($p < 0001$). These results indicate an attenuation in muscle pain intensity rating with endurance exercise training when performed over three trials. The reduced pain intensity rating may be due to adjustments in cadence and gear selection amongst the trials.

Key words: Pain, intensity, training, rating, cycling**Key Points**

- Muscle pain intensity rating was significantly reduced with three repeated cycling endurance trials.
- Attenuation in muscle pain intensity rating appeared at 50, 55, 60 mins into exercise within the third trial.
- The attenuation in muscle pain intensity with training is apparent despite an increase in cycling distance performance.
- The decline in muscle pain rating and increased cycling performance may be associated with adjustment in cadence and gear selection amongst the endurance trails.

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