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## Fatigue level after maximal exercise test (laboratory and road) in cyclists

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### Abstract

Fatigue level after maximal exercise test (laboratory and road) in cyclists. *J. Hum. Sport Exerc.* Vol. 5, No. 3, pp. 358-369, 2010. Despite the importance of uphill cycling performance during cycling competitions, there is very little research investigating uphill cycling, particularly concerning field studies. The lack of research is partly due to the difficulties in obtaining data in the field. The aim of this study was analyze the fatigue after a maximal exercise test and the maximal blood

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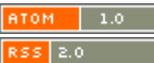
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lactate in elite cyclists after two maximal exercises, one on laboratory and other in field. In this study 14 semi-professional cyclists have participated. The trials consisted in a laboratory incremental test (LIT) to exhaustion, and a maximal individual uphill time trial test on road (UTT) (5.85±0.24% slope) during 12-minute. The results showed that in LIT the maximal heart rate ( $HR_{max}$ ) (beats·min<sup>-1</sup>) was 188±9.8, with a maximum of blood lactate ( $LA_{max}$ ) (mmol·L<sup>-1</sup>) of 13.9±2.5. Similar data were obtained in the 12 min maximal UTT ( $LA_{max}$  15.2±3.1 mmol·L<sup>-1</sup>, and  $HR_{max}$  188±6.5 beats·min<sup>-1</sup>). A high correlation of  $LA_{max}$  (0.70) and  $HR_{max}$  (0.86) was obtained from both trials. No differences were observed with respect the fatigue data (psychological and dynamometric) between both test LIT vs UTT. We conclude that UTT test on road as a useful test to evaluate the cyclist's physical condition. We think that is perfectly valid, reliable and reproducible, and is possible to carried by the made for the own cyclist or for the trainers. On the other hand, is important because we can obtain information about of performance as well as power feeling of cyclist. These results may be significant in physiological terms to monitor the training and for recommendation of exercise or performance prediction.

Key words: Fatigue; cycling; physical test; heart rate; lactate

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