

# Psychophysiological respond in a swimming ultraendurance evento

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## Abstract

**Background:** Ultraendurance events under critical environmental conditions represent unique stress, resulting in acute marked adaptations to the cardiovascular, respiratory, metabolic and neuromuscular systems of the organism. In line with this, no studies in swimming events were found thus far. **Methods:** This research aimed to analyze the psychophysiological response of swimmers in an ultraendurance swimming event. Changes in the rate of perceived exertion, blood lactate concentration, 1000m swimming time and cortical arousal were measured in 19 male volunteer swimmers ( $28.0 \pm 5.6$  years;  $175.0 \pm 7.9$  cm;  $70.1 \pm 7.8$  kg) in 3 moments during a 24h swimming event. **Results:** We found a significant increase in lactate concentration after series 1, decreasing the values in series 2 and series 3. Cortical arousal decreased significantly in series 3 respect the basal sample. Rate of perceived exertion significantly increased in the swimming ultraendurance event and 1000m swimming time was maintained during the series analyzed. **Conclusions:** An ultraendurance swimming event produced an increase in blood lactate concentration and rated of perceived exertion and a decrease in cortical arousal, not affecting average swimming velocity along the event.

**Keywords:** Sports; Lactates; Swimming; Fatigue; Exercise