

Abstract

Title: Verification of a 4 min all out test as a reliable indicator of sport climbers finger flexors critical force.

Objectives: The aim of this study was to assess the reliability of an 4 min all-out test which determines climbers finger flexors critical force.

Methods: 6 participants did a 4 minute all out test to determine their finger flexors critical force. Afterwards, they did several verification tests with +2, -2, -4 and -6 kilograms added or deducted from their critical force for 12 minutes or until failure, where their maximal metabolic steady state should be observed based on muscle oxygenation and subjective intensity control.

Results: 4 climbers have reached their maximal metabolic steady state. 2 of them reached it at 4 kilograms below their critical power and 2 of them reached it at 6 kilograms below their critical power. 2 climbers did not make another verification measurements.

Conclusion: 4 minute all-out test overestimated critical power by 26 % at a given population.

Key words: spectroscopy, maximal metabolic steady state, sport climbing, climbing performance.