

Effects of Swim Training on Energetics and Performance

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Abstract

The aim of this study was to determine the effect of several months of training on performance and energetic profile of elite swimmers. 9 elite swimmers were evaluated at 3 different time periods during the 2010-2011 calendar. Swimming performance was assessed based on lists of times for the 200 m freestyle event. An incremental set of 7×200 m swims was applied to obtain the energetic data. Measurements and/or estimations were made for the: velocity at 4 mmol l⁻¹ of lactate concentrations, highest value of lactate concentrations, maximal oxygen consumption, minimum swimming velocity where the maximal oxygen consumption is reached and total energy expenditure (E_{tot}). The performance and most of the energetic variables assessed presented no significant variations during the study period. The only exception was the E_{tot} with significant differences between all measurements. Correlation coefficients suggested a high stability for all variables. Cohen's Kappa tracking index demonstrated high variability in the individual adaptations to training. It is concluded that elite swimmers demonstrate a slight improvement in performance and energetic profile in response to several months of training. Each subject has an individual way of adapting to the training load, combining the different energetic confounders to enhance performance.

Key words

tracking - elite swimmers - testing - annual changes - swimming