SPECIAL SPEED-STRENGTH TESTING BEFORE AND AFTER A COMPETITIVE TRAINING RACE TO OPTIMIZE THE TRAINING DESIGN OF A MOTORCYCLING RACER

Ribera-Nebot David¹, Reverter-Masia Joaquin²
(Barcelona University¹, Zaragoza University², Spain)

Introduction. Dynamic complex systems theories will provide us the basis to construct a specific training science for varied-actions and interaction sports (Seiruló Vargas, 1987). The methods for training monitoring have to be chosen specifically and the information obtained from measurements has to be understandable for making effective changes in training design (Viru et. al. 2004). A strength training methodology with four levels (general, directed, special and competitive) permits to gradually approach the strength capacity to the conditions of the specific technical actions. Specific tests allow the design of personal needs for strength training in each level of strength approximation during each period of training (Seiruló Vargas, 1990).

Objective. The aim of this study was to evaluate the effect of a competitive training race on special speed-strength capacities three months before the competition in order to make effective changes in the training design.

Subject. One experienced motorcycling racer, aged 35, training for the 24 Hours International Motorcycling (Catalunya Circuit).

Methods. Five special speed-strength tests were performed 60-minutes before and 5-minutes after a 44-minutes competitive training race. 1) one-leg explosive vertical jump holding a stick with one hand —right and left legs— (1LVJ); 2) two sets of 12 sec. —48 sec. rest in between— executing site-to-site push ups on the motorcycle (2x12-sec PU); 3) two sets of 15 sec. —45 sec. rest in between— executing jumps shifting from site to site on the motorcycle (2x15-sec SHIFT); 4) two sets of 30 sec (second set with 0.5 kg on the shoulders) —30 sec. rest in between— executing straight push ups on the motorcycle (2x30 sec PU); 5) two sets of 45 sec. (second set with 2.5 kg on the hip) -60 sec. rest in between— executing jumps shifting from site to site on the motorcycle (2x45-sec SHIFT).

Results. There are significant performance differences between the results before and after the competitive training race in: 1) Right Leg-1LVJ (right leg: 30 before — 21 after, left leg: 36 before — 37 after); 2) 2x12-sec PU (before: 40, after: 32) and 4) 2x30 sec PU (before: 57, after: 45). No significant performance differences exist between the results before and after the competitive training race in: 3) 2x15-sec SHIFT (before: 44, after: 40) and 5) 2x45-sec SHIFT (before: 101, after: 96).

Changes in the training plan: a) to increase the explosive conditions of the right leg in the training of special-competitive strength for shifting from side to side; b) to increase the training proportion of directed strength to brake, c) to increase the rest time in between training sets of special strength to brake and to perform the effort sets until fatigue.

Conclusions. Special speed-strength tests performed before and after a competitive training race provides significant information to optimize the training periodization of a motorcycling racer. This method for training monitoring is specially useful in periods close to competition when the limits between precise peaking and prevention of overtraining are highly relevant.

References.

Keywords: Strength Training, Planning and Periodisation, Training and Testing