Monitoring

Monitorización del Entrenamiento

MONITORING

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SCIENTIFIC MANAGEMENT OF HIGH PERFORMANCE ATHLETES' TRAINING

Creation of the homo olympicus, capable for successful competition in the Olympic Games, is a result of well-designed cooperation of sport sciences, medicine, coaching methodology, and management. In this cooperation the leading position as well as the main responsibility belongs to the coach. He or she should be enough educated for purposeful application of: (1) necessary scientific information, (2) the aid of medicine, and (3) social and financial opportunities in order to be creative and justified in decisions.

High level athletes are involved as subjects in several researches: (1) to be used for exploration of specialties distinguishing homo olympicus from general population as well as from less capable athletes. (2) medical investigations which are obligatory for establishment the accordance of health conditions to the enhanced demands of the high workloads of training and competitions, (3) a complex of means for effective guidance of training with the aid of information obtained by using of methods of various sciences. It is not wise to suggest that if a research provides results for solving a scientific problem, it is in any case essential for guidance of the training process. Although medical investigations are highly necessary they cannot substitute the information provided by training monitoring. The purpose of training monitoring is founded on the necessity of having information on actual effects, knowing that the training design is adequate at a specific stage for that athlete, and recognizing the pattern of adaptational possibilities of the athlete. In all cases, the monitoring has to be founded on recording of the actual training process. Without this information the results of monitoring have only an abstract significance. An investigation can be considered to be the training monitoring, if five principles are followed / 6 /.

• It is a process performed for the purpose of increasing the effectiveness of training,

• It is based on recording changes in an athlete during various stages of training or under the influence of main elements of sport activities (training session, competition, microcycle).

• It is a highly specific process, depending on the sports event, performance level of the athlete, and age/gender differences. The methods for training monitoring have to be chosen specifically for the event and the athlete's characteristics.

• Any method or measurement makes sense in training monitoring if it provides reliable information related to the task being monitored.

• The information obtained from measurements has to be understandable for making necessary changes in training design.

The main principle of the design of training monitoring is minimum testing – maximum reliable information. A comparatively new, but essential task of training monitoring is the establishment of the body adaptivity dynamics. It has been assumed, that exercise training is founded on the body capacity for adaptation / 4 /. An athlete exhausts a large part of his/her adaptational possibilities (adaptivity) to reach the peak performance. Information about the loss of adaptivity is necessary to change timely the training in order to avoid overtraining. Immunological / 2 / and hormonal / 6 / studies provide perspective opportunities for assessing the adaptivity. According to results obtained in cross-country skiers / 5 /, as well as to the outcome of other studies / 1,3 / enhanced strain of adaptational processes are indicated by high cortisol and low testosterone basal and post-exercise levels. A suppressed or reversed cortisol responses, blunted growth hormone response in heavy exercise and low basal testosterone level appear when athlete's adaptivity drops.

Conclusion. Training monitoring is necessary to help coach in training guide. It is an individualized process founded on follow up studies with the same athlete.

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