

ECSS - Satellite symposium

Title: Training load and challenges of the Dose-Response relationship

Venue: Dublin Convention Centre

Date: 4 July 2018, 10-12pm.

Speakers: Dr. Sabrina Skorski (Germany), Dr. Carlo Castagna (Italy), prof. Aaron Coutts (Australia)

Chairs: Dr. Massimiliano Ditroilo, Dr. Adam Grainger (University College Dublin)

Each speaker will have 30 mins + 30 mins for questions

S. Skorski. Quantifying training load in endurance sports: scientific evidence and practical applications

Training load and competition frequency are steadily increasing and performance differences between race winners and “also-ran” are becoming more marginal. Consequently, athletes and coaches face the difficult task of maximizing training load and adaptation whilst avoiding insufficient recovery, which would lead to maladaptation, loss of performance and possibly to non-functional overreaching. In this situation, assessing the current fatigue status of an individual athlete is a critical task in order to fine-tune training prescriptions. The “gold-standard” of fatigue in competitive athletes is a decline in discipline specific performance. However, requiring maximum effort, this parameter is not suitable for repeated routine assessment. Therefore, other indicators of fatigue and recovery have been investigated including a wide range of blood-borne parameters, psychological questionnaires or the assessment of autonomous nervous system balance (heart rate and heart rate variability). Surprisingly, no parameters have been established with adequate sensitivity and reliability for the monitoring of fatigue and recovery

during athletic training cycles. This is possible due to a large interindividual variability impeding the diagnostic accuracy of fatigue indicators known to date. Thus, individualizing load monitoring e.g. by using individual reference ranges and joint consideration of selected parameters in multivariate classifiers might be a solution to this dilemma.

C. Castagna. The use of Psychometric Scales in Training

With the aim of estimating internal training load, coaches and fitness trainers use extensively various form of psychometric scales (PS). In this presentation the nature and the application of the most popular PS will be briefly reviewed, providing information on their reliability and validity. Practical examples about the use of PS in the training of team-sport and mainly in Football will be provided.

A. Coutts. Man versus Machine: Assessing the efficacy of coach and computer-led athlete monitoring systems

Inappropriate training dose has been shown to increase injury risk and negatively affect performance in a variety of athletes. As an attempt to minimize the chances of making errors in training load periodization, athlete monitoring systems have been introduced to guide decision on future training. These systems usually include the systematic assessment and analysis of both the training dose (i.e. internal and external load), and the athlete's physiological (fitness) and perceptual (fatigue) responses to this dose. Most commonly, the data provided by these systems are interpreted by coaches and scientists and informed decisions on future training are made. A criticism of this human-led approach is that user bias can influence decisions on future training. Therefore, as an alternative to this human-led approach using an agnostic computer models has been developed. This presentation will provide an overview of the fundamental components of athlete monitoring system and examine the strengths and weaknesses of both the human and computer-led approach to athlete monitoring. Finally, practical examples of how these approaches have been applied will be provided and comparisons of their effectiveness for improving training outcomes in high performance athletes will be made.