TRAINING LOAD AND INTERVAL ENDURANCE CAPACITY IN YOUNG ELITE SOCCER PLAYERS

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Monitoring training load is important to optimize performance and prevent players from overtraining or injury. In soccer, heart rate measurements are used to determine training load but procedures are unclear and time consuming (1). Training duration and Rate of Perceived Exertion (RPE) scores seems a simple and valid alternative (2). Especially in the first part of the training season, it is expected that training load is related to the development of physiological performance. So, the purpose of the present study was to monitor training load at the beginning of the season in relation to interval endurance capacity.

During four weeks in the first part of the training season, training and match duration and RPE scores were collected in ten elite young soccer players (mean ± SD: age 17 ± 0.5 years, body mass 72.4 ± 7.8 kg, height 180.4 ± 7.3 cm, body fat 9.3 ± 2.7 %). Training load was calculated by: 1) adding training and match duration (TLd) and 2) by multiplying duration and session RPE (TLrpe). Furthermore, they performed two sub maximal Interval Shuttle Run Tests (ISRT) to determine interval endurance capacity (3). During the ISRT, players alternately ran for 30 seconds and walked for 15 seconds. Running speed increased from 10 km.h(-1) every 90 seconds until 14, 14.5 or 15 km.h(-1), depending on their performance on the maximal ISRT at the start of the season. Heart rate was recorded at 5-s intervals (Polar, Finland). TLd and TLrpe were calculated for the total period (four weeks) and the last week before the second test and related to the average heart rate during the final speed of the ISRT using Spearman correlation coefficients.

In general, results showed that a higher training load was related to a higher increase in performance, i.e., a higher decrease in average heart rate during the ISRT (P<0.05). More specific, total and last week TLd was correlated more strongly to changes in average heart rate (r = -.778 and r = -.863; P<0.05) than total and last week TLrpe (r = -.678 and r = -.705; P<0.05).

Overall it can be concluded that training load was related to improvement of interval endurance capacity during the first part of the training season in young elite soccer players.

References

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