

PERSONALISED ENDURANCE TESTING IN TOP LEVEL BASKETBALL PLAYERS

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Introduction

After longer than 25 years designing specific endurance tests for basketball players and having applied them to different basketball teams (Spanish under-20 national team, young-player teams, ACB-1st div, LEB1-2nd div, LEB2-3rd div and EBA-4th div of Spanish leagues, NCAA Division I and High School of USA leagues), it is obvious the need for a dynamic personalization of endurance testing. The aim of this study was to analyze the evolution of the endurance capacity, measured with personalized tests, in five professional basketball players during two consecutive seasons (LEB1 2nd division and ACB 1st division of the Spanish leagues).

Methods

One test with specific offense and defense actions for interior players (centers and power forwards) and another test with specific offense and defense actions for exterior players (point guards and forwards) in which the player had to perform the sequence of specific actions as many times as possible during four 2-minute effort periods alternated with 30-second rest periods were used to measure the endurance capacity during the first season (LEB1 2nd division). One test with specific offense and defense actions for each players (AO, FL, JP, JC, JS) consisting of eight 1.5-minute effort periods alternated with 30-second rest periods were used to measure the endurance capacity during the second season (ACB 1st division). The number of actions performed (each period and total), recovery heart rate (each 30-second rest period and at 1, 2 and 3 minutes of end) and performance index (number of actions/heart rate for each period and total) were evaluated and the test was performed six times (at beginning and end of pre-season and after three mesocycles of each season).

Results

Total number of actions and recovery heart rate at 1-minute in tests 1,2,3,4,5 and 6 are, respectively, for player AO: 225/135, 238/148, 245/136, 357/146, 370/147 and 389/144, for player FL: 216/164, 236/145, 248/153, 346/157, 372/152 and 399/153, for player JP: 220/146, 231/153, 240/149, 345/143, 365/149 and 403/161, for player JC: 236/147, 242/150, 248/156, 349/158, 364/148 and 402/140, and for player JS: 223/158, 212/135, 225/144, 330/142, 339/137 and 391/141.

Discussion

The type of endurance testing proposed, with options to personalize the type of actions and the duration and number of effort-rest periods, is useful for making effective analysis of the evolution of the endurance capacity of each player, if also other factors, such as specific training and minutes played during competition, are considered. In addition, the specific information about the endurance capacity is relevant for planning the special endurance-strength training and for effective guidance of training process. Besides recovery heart rate, other physiological parameters are useful but always related to the number of actions performed.

References

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