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# THE PARTICULARITIES OF THE TRAINING REGARDING THE ASSESSMENT OF PHYSIOLOGICAL VALUES IN SENIOR FOOTBALLERS

Case  
Study

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## Keywords

Training;  
Physiological;  
Footballers;  
Values

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## Abstract

*The football game was developed both through the regulation of the game, but also through the methods and means of training, with the tendency to improve over time. The current game requires players to act effectively both in attack and defence, in order to solve the tasks of the game, to obtain certain advantages over opponents and less for the football show. Sports training is more than a training process, not only through its dimensions, but especially through its complexity. In this way, in sports training, we can meet: technical, tactical, physical, psychological, theoretical training, these intermingling and offering a general type of training, which would not lead to performance if one of them were missing. For this reason, the football game demanded a multilateral training, during which the dosing of the effort under medical control can ensure the success of this training, facilitating the maximization of the biological potential, of the sportsmanship, the development of the athletes' health.*

The football game was developed both through the regulation of the game, but also through the methods and means of training, with the tendency to improve over time. The current game requires players to act effectively both in attack and defence, in order to solve the tasks of the game, to obtain certain advantages over opponents and less for the football show. Sports training is more than a training process, not only through its dimensions, but especially through its complexity. In this way, in sports training we can meet: technical, tactical, physical, psychological, theoretical training, these intermingling and offering a general type of training, which would not lead to performance if one of them were missing. For this reason, the football game demanded a multilateral training, during which the dosing of the effort under medical control can ensure the success of this training, facilitating the maximization of the biological potential, of the sportsmanship, the development of the athletes' health. "A number of researchers, who have been involved in our field of activity, technicians, methodologists, biologists, physicians, biochemists, physiologists, etc., have classified sports according to their criteria - scientifically argued at the time - precisely to give coaches a guide in order to select and use the most efficient means and methods in order to improve the adequate physiological mechanisms for providing the energy needed for muscular contraction and implicitly the performances in these certain sports (Cojocaru, 2000).

Statistics of the effort made by the football players in the match

It should be noted that in a 90-minute match (excluding play-off), the actual playing time is between 50 and 55 minutes for amateur matches. It can be increased to between 60 and 65 minutes for international matches. Football is an intermittent sport characterized by repeated explosive efforts. How can this be specifically explained during the match? The high-level match is characterized by:

- between 50 and 55 duels (on the ground and above the head)
- between 25 and 40 jumps
- between 2 and 8 fights

A player gets about 120 intense actions or sprints from 1 to 6 seconds per game. We observe this sequence of actions:

- sprint 1 to 6 seconds > 30 to 45 seconds recovery > sprint 1 to 6 seconds > 30 to 45 seconds recovery > sprint 1 to 6 seconds. Distances travelled by players on the field depending on the position occupied. It will be noted that these distances depend on (Grigore, 1999).
- the position occupied
- the game system
- the context of the match (outside or at home)
- the player's physical state
- the average distance from the goalkeeper: 5.30 km

- the average distance from the lateral defender: 10.43 km
- the average distance from the centre-back: 10.67 km
- the average distance from the midfielder: 11.57 km
- the average distance from the midfielder: 12.30 km
- the average axial distance from the forward: 10.70 km
- the distance from the attacker outside the centre: 11.10 km.

The example of the speed thresholds shown below corresponds to a second league match for an attacking midfielder. Total distance: 12.58 km- the distance to the aerobic threshold (from 0 to 14 km / h): 67.8% or 8.54 km- the distance to the maximum speed (from 14 km / h to 21 km / h): 24.5%, ie 3.09 km- high intensity distances (> 21 km / h): 7.5% or 0.949 km or 949 m (Ciolca, 2006).

The specific effort of the football game is a mixed type, because it is performed on the basis of the chemical energy released both through processes in which oxygen does not intervene (anaerobic) and through processes in which oxygen is indispensable (aerobic). In the game, 60% of the effort is aerobic, 25% anaerobic lactacid and 15% anaerobic alactacid. The activity is discontinued, 60% of the play sequences taking less than 15 seconds and 80% of the pause sequences lasting less than 15 seconds. The football game is not only an average racing pace, but also a succession of explosive demands. Modern football should have a high speed, high muscular power and capacity for recovery between two intense actions or sprints (Dragnea, 1984).

When looking at player performance in a game, we should take into account the variation in player performance from game to game, especially in running speed. Moreover, we must take into account the fact that when we use these physical parameters to analyze the game model, we quantify only the movement profile of our game and not the non-locomotor activities such as fighting, hitting, duelling, jumping which could metabolically influence the player's performance. Finally, the most important is the ability to generate a high physical condition during the game, without the significant compromise of the technical, tactical or psychological aspects of the game - please see for details Table 1 and Table 2.

## CONCLUSIONS

- Due to the carefully applied training and the varied work possibilities depending on the position of each player, we can reduce accidents, improving the areas of effort that are of interest to us through gradual adjustments and compensation.
- The investigation of the cardiac frequency realized after the tests surprised the modality of

diversified request of each player according to his area of play, the values VO<sub>2</sub>max having an average of 61.71ml/kg/min, VAM 17, 63km/h, and FC having a max of 174 beats/minute and a minimum of 134 beats/minute after the first minute of recovery/effort.

- These evaluation samples (FC, Lactic Acid, VAM) gave us the opportunity to see in which area of effort each of the subjects worked the recovery time, and the individual physiological costs.
- It was found that the effort in the applied tests is of anaerobic type (according to the proposed objective), falling as a general average of 194%, a significant area for the exercises using the interval method prevalently.

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Table 1  
**Values before effort**

Name and surname	Recovery 1'		Recovery 3'		Recovery 5'	
	FC (bpm)	(%FCmax)	FC (bpm)	(%FCmax)	FC (bpm)	(%FCmax)
B.Y.R.	156	81	141	73	120	63
C.M.	172	80	129	67	107	56
B.R.S.	149	71	123	59	112	54
B.H.L.	134	68	119	60	114	58
Z.K.	140	73	122	63	114	59
M.M.	153	85	109	60	103	57
B.Y.A.	148	80	107	58	100	54
T.W.	170	83	129	63	124	60
K.S.	146	75	119	61	128	66
Z.A.	139	68	116	57	107	53
L.A.	135	70	115	60	115	60
B.O.R.	116	64	96	53	94	52
N.A.	174	84	137	66	136	66
R.R.	141	73	115	60	114	59
B.W.	136	71	108	56	108	56
B.Z.	136	68	118	59	115	57
M.S.	135	70	102	53	102	53
M.A.	166	86	119	62	115	60
H.Y.S.	155	80	125	65	120	62
S.L.	158	81	111	57	109	56
<i>Average</i>	<i>147</i>	<i>75,55</i>	<i>118</i>	<i>60,6</i>	<i>112</i>	<i>58,05</i>

Table 2  
Values obtained after effort at different intervals (FC,% FCMAX.)

Name and surname	Values before effort	
	FC (bpm)	Lactic acid (mmol/kg)
<b>B. Y. R.</b>	69	2,8
<b>C. M.</b>	66	2,3
<b>B. R. S.</b>	57	2,6
<b>B. H.L.</b>	62	2,3
<b>Z. K.</b>	55	1,7
<b>M. M.</b>	66	2,4
<b>B. Y. A.</b>	49	2,1
<b>T. W.</b>	66	0,8
<b>K. S.</b>	73	2,1
<b>Z. A.</b>	51	1,0
<b>L. A.</b>	60	1,9
<b>B. O. R.</b>	50	1,4
<b>N. A.</b>	94	2,4
<b>R. R.</b>	76	1,2
<b>B. W.</b>	75	1,4
<b>B. Z.</b>	61	2,1
<b>M.S.</b>	68	2,1
<b>M. A.</b>	59	1,7
<b>H. Y.S.</b>	71	1,8
<b>S.L.</b>	75	1,9
<b>Average</b>	<b>65,15</b>	<b>1,9</b>