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HEALTH-SAVING TECHNOLOGY OF ENDURANCE TRAINING
FOR KETTLEBELL LIFTERS

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Abstract

Low levels of population health necessitate search for technologies to preserve and restore it. Endurance is a physical quality, characterizing person's health in general, and an efficient preventive factor of formation of tolerance to hypoxic state in the organism, which prevents pathology development. However, its development follows certain regularities. Severe conditions of athletic activity, where requirements to health quality are increased, necessitate search for health-saving technologies and training methods that would determine appropriateness of physical load to physiological possibilities of an athlete's organism. Their inadequacy leads to illnesses development. Endurance is a physical quality that determines the athletes' physical health level and their potential to gain athletic achievements in the chosen discipline, particularly in kettlebell lifting. The maximum attention to the development of this quality is given on the preparatory stage of the planned training session. The multi-factor nature of the development of this quality is successfully realized on the condition of using an effective technology and strict succession and order of methodological and pedagogical techniques used by the coach, who must take into account the athlete's individual characteristics. Synchronization of cardiorespiratory load with breathing is achieved through the number of respiratory movements per minute of the exercise: jerk or snatch during one to tenth minute.

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1. Introduction

Efficient health-saving training technologies and activities to regenerate the organism after exercise is one of the most pressing issues of our days. To optimize the kettlebell lifting training process, it is necessary to develop a technique for improving the physical quality of endurance, which determines an athlete's health level (Koypysheva, Rybina, & Lebedinskiy, 2016; Kolumbet, 2016; Kondakov, Kopeikina, & Usatov, 2016).

2. Problem Statement

The efficiency of a health-saving technology is defined by the development of the physical quality of endurance while factoring in the energy resource of muscle activity based on the synthesis of adenosine triphosphate. An early increase of exercise intensity without a sufficient accumulation of energy potential brings a quick exhaustion of energy resources and quick development of dystrophic processes in athletes' organisms.

3. Research Questions

Saving an athlete's health supposes planning one's training sessions to include a differentiated aspect of developing one's endurance within the microcycles of the process of training. The load in the traditional competition movements was regulated by the number of the weight lifts per regulated competition time. Depending on an athlete's physical condition on the training day, the competition time (10 minutes) was split into shorter intervals of time (from 1 to 5 minutes) with rest periods until the athlete's organism is restored, but in total, the training lasted up to 10 minutes.

4. Purpose of the Study

Developing a health-saving technology to increase the physical quality of endurance as the result of the training process within the preparatory stage of its yearly cycle.

5. Research Methods

The "Omegawave" software carries out a comprehensive check of the adaptation potential factoring in the characteristics of the cardiovascular and neurohumoral systems (Gajnullin, Isaev, & Korableva 2016; Druz, Iermakov, Artemyeva, Puhach, & Muszkieta, 2017). The selected criteria to assess the functional condition of the athletes and the results of their training process are: the tension index (in standard units) determining the degree of adaptation, the absolute PWC determining the general performance capacity, the relative PWC, the general recovery rate, and the anaerobic index. The validity of the results of these examinations was determined according to the White coefficient.

6. Findings

Comparing the obtained results of the start and the end of the training process showed a positive dynamics of the physiological state of the athletes' health: PWC rel. (T)PWC rel = 10); recovery rate (T recovery rate = 11); recovery index (T Recovery index = 10); PWC abs. characteristic, (T_{PWC abs.} = 13) (Table 1.2).

The differences in the tension index and the anaerobic index are not significant in the first case due to the equality of the nervous system response (6 points) (Table. 1.2) given the normotonic type of the organism's response to physical load, and in the second case, which was the training goal, they do not affect the aerobic stage of endurance (Koyppysheva, Rybina, & Lebedinskiy, 2015).

Table 01. Characteristics of the "endurance" physical quality at the beginning of the training process

Endurance											
In the submaximal zone						In the aerobic zone				Special	
Tension index		PWC		PWC		Recovery rate		Index		Anaerobic index	
		Abs.		Rel.							
Std. U.	Points	Kgm/ min	Points	Kgm/ /kg min	Points	Bpm	Points	Std. U.	Points	Std. U.	Points
70	6	1195	3	15	2	26	3	50	3	135	4
44	6	1319	3	16	3	20	3	48	2	142	5
36	6	1425	4	19	4	33	4	59	3	144	5
Cp.50	6	1313	3	16	3	26	3	52	3	141	5

Table 02. Characteristics of the "endurance" physical quality at the end of the training process

Endurance											
In the submaximal zone						In the aerobic zone				Special	
Tension index		PWC		PWC		Recovery rate		Index		Anaerobic index	
		Abs.		Rel.							
Std. U.	Points	Kgm/ min	Points	Kgm/ /kg min	Points	Bpm	Points	Std. U.	Points	Std. U.	Points
30	6	1473	4	18	4	38	5	62	4	135	4
44	6	1957	5	23	5	32	4	60	4	145	5
50	6	1269	4	18	4	36	5	60	4	135	4
Cp.41	6	1566	4	20	4	35	5	60	4	139	4

7. Conclusion

1. Planning of the training of the physical quality of "endurance" is objectively characterized by the increase in the athletes' functional characteristics (PWC abs., PWC rel., recovery index, recovery rate).

2. The comprehensive approach to the adequacy of the exercise load and physiological capabilities of the athletes' organisms is determined by using health-saving technologies in the planning of the training process with the mandatory condition of the medical and biological monitoring that mainly characterizes the athletes' health status, especially when exercising.

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