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Some Features of Adaptation of Athletes in Conditions of Physical Activity

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ABSTRACT: Adaptation as a General universal property of the living provides the viability of the organism in changing conditions and represents the process of adequate adaptation of its functional and structural elements to the environment. The rate of onset of adaptation, and its duration largely determine the health and fitness of person. The time mismatch between these processes can lead to functional disorders, which are manifested by various pathological disorders. The importance of the problem of adaptation in sports and physical education is determined primarily by the fact that the body must adapt to physical activity in a relatively short time. Adaptation and adaptability to physical exertion and all functional and structural changes in the body are in biological categories [1].

KEYWORD: Athletes.

Adaptation of the organism to physical activity consists in mobilization and use of functional reserves of an organism, in improvement of the available physiological mechanisms of regulation. No new functional phenomena and mechanisms are observed in the process of adaptation, just existing mechanisms are beginning to work more perfectly, intensively and economically. The adaptation to physical activity is based on neuro-humoral mechanisms, which are included in the activities and improved during the work of motor units (muscles and muscle groups). In adaptation there is an increase in the activities of a number of functional systems at the expense of mobilization and use of their reserves, a factor which should be a useful adaptive result is the execution of the task, i.e. the ultimate athletic performance [2].

Physical potential unites such important categories of theory and methods of physical education as "physical abilities", "physical capabilities" and "energy resources", which allows to use it as an integral assessment of the effectiveness of the physical condition of the body, improving the functioning of the body, its systems and improve their performance.

It is now generally accepted that the heart rate is 170 hit 1 minutes, from a physiological point of view, it characterizes the beginning of the optimal working area of the cardio- respiratory system, and from the methodological - the beginning of a pronounced nonlinear dependence on the curve of the heart rate on the power of physical work. An essential physiological argument in favor of choosing the level of heart rate in this sample is the fact that at a pulse rate of more than 170 hit 1 minutes, the growth of the minute volume of blood, if it occurs, is already accompanied by a relative decrease in systolic blood volume.

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Another widespread test is the Harvard step test, developed in the USA. This test is designed to assess the performance of healthy young people, as the studied persons require significant stress. The corresponding data and indicators are compared with the proposed values in table

1. Thus, the peculiarities of morphological, functional and psychophysiological parameters of the human body at rest characterize the degree of its functional readiness for a certain physical activity.

Table 1. Assessment of physical health according to the index of Harvard step-test

IGST	Assessment
55	Weak Below
55-64	Average
65-79	Average
80-89	Good
90	Excellent

Also, all indicators are supplemented and analyzed in conjunction with medical data obtained during examinations and medical control [3].

To study the adaptation were examined 2 groups of students Karaganda State Medical University, aged 18-22 years: 1 group (A)– engaged in weightlifting, 2 group (B) – engaged in volleyball, i.e. the type of physical activity they had different in severity and tension. The average age was higher in group a than in group B, the opposite growth in group B by 5.6 cm was greater than that of athletes. Weight on 1,6 kg exceeded at volleyball players. Table 2 and table 3 provide data for the study antropometries parametrs.

Table 2. Antropometries parametrs of athletes weightlifters (men)

№	F. I. O.	Age	Tall	Weight	Up to load		Harvard step-test	
					Pulse	HELL	pulse	HELL
1.	Xoliqov S.	17	167	71	88	130/70	184	140/70
2.	Muhhamedov J.	16	164	63	72	110/70	108	120/70
3.	Yuldashev O.	17	165	62	80	110/70	120	120/80
4.	Kochkarov R.	15	170	70	76	140/80	112	150/100
5.	Alashbekov T.	16	169	63	80	120/80	120	140/70
	medium	**16,2**	**167**	**65,8**	**79,2**	**122/74**	**128,8**	**134/78**

Diastolic blood PRESSUR According to the study heart rate volleyball players to load was higher (83,4 hit/min) than in athletes (to 79.2 hit/min) that can be explained by the nature of the movements, the volleyball players he is actively locomotive, and athletes – static; however, after exercise heart rate of athletes has increased by 32.6 hit/min, than the volleyball players. It may depend on the greater degree of tension physical stress in athletes, which, when their actions still raise the heavy weight along with the intense work of respiratory organs. Systematic physical exercise lead to adaptation of the human body to perform physical work. Since adaptation is based on changes in muscle tissues and various organs as a result of training, all these changes determine the training effects. They are manifested in the improvement of various functions of the body and improving physical fitness. Loads used in the process of physical training, act as an irritant, stimulating adaptive changes in the body.

Table 3. Antropometries parametrs of athletes volleyball (men)

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№	F. I. O.	Age	Tall	Weight	Up to load		Harvard step-test	
					pulse	HELL	pulse	HELL
1.	Nazarov A.	17	170	63	82	120/80	92	160/80
2.	Zafarov D.	16	165	67	98	120/80	111	140/90
3.	O`ktamov A.	17	163	66	62	120/80	116	140/90
4.	Malikov M.	15	166	69	87	100/60	80	90/60
5.	Nodirov M.	16	162	67	88	120/80	82	160/100
	medium	**16,2**	**165,2**	**66,4**	**83,4**	**116/76**	**96,2**	**138/84**

Blood pressure on average in the group of athletes was higher than the blood pressure of volleyball players (122/74 and 116/76 mm Hg.art.), which indicates apparently a more intense nature of the stress of the cardiovascular system of athletes who raise the severity.

The results of the Harvard step-test showed that the pulse of athletes was higher by 32.6 hit/ min than that of volleyball players, and arterial pressure, on the contrary, volleyball players – 138/84 mm of rt.art. exceeded arterial pressure athletes-134/78 mm Hg.as a Result, the greater the respiratory volume and blood flow rate is greater in athletes who move intensively during training.

During adaptation to physical loads by the responsible functional system is formed by the initial action of any signal that causes intense and prolonged motor response. Thus, in response to the action signal to the receptors occurs the excitation of afferent, motor and autonomic centers, the activation function of the endocrine glands, which leads to mobilization of skeletal muscles directly involved in the motor responses, and respiratory and blood circulation, which provides energy metabolism of the working muscles.

Consequently, the functional system responsible for adaptation to physical activity includes afferent receptors, Central regulatory link - centers of neurohumoral regulation at different levels of the Central nervous system, and effector link - skeletal muscles, respiratory organs, blood circulation.

Under systematic muscular work is shaped rational physiologically a perfect type of breathing. A deep breath forced exhalation in the case of cyclic types of muscular work increases pulmonary and alveolar ventilation. Less pointedly than arbitrary pulmonary ventilation, changes under the influence of training yellow. This figure is not one of the factors limiting sporting achievement. However, it is counted in the other important to assess the functionality of the indicator with respect to VC to body mass (vital index). The results of the respiratory function are presented in diagrams 2. As can be seen from the chart, the indicators of the respiratory volume of the volleyball players was higher than in weightlifting, which leads to increased reserve volume exhalation (1275 ml and 1677,2 ml, respectively).

The vital capacity of the lungs indicators also show higher endurance and lung volumes among the volleyball players compared to weightlifters. The increase in pulmonary ventilation in them is mainly due to an increase in respiratory volume. In highly qualified athletes, the maximum oxygen consumption (MPC) increased (up to 80 ml/min per kg of weight), which exceeds the rates of untrained people by 60-80 %.

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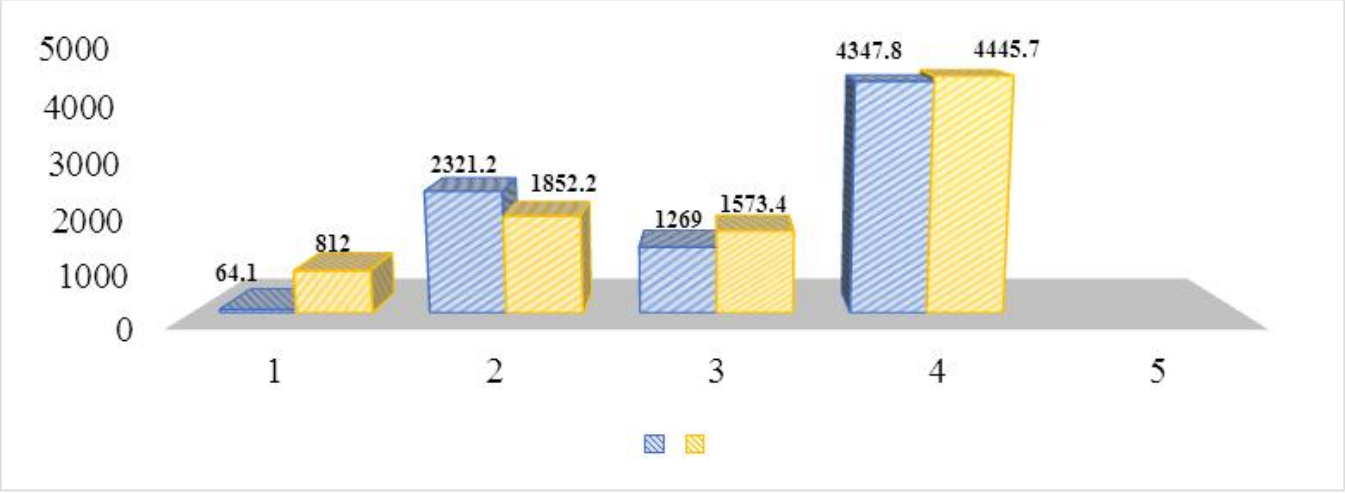

1. TO **2.RO breath** 3.**RO exhalation** **4.Living capacity of the lungs**

EW-The average index of parameters of external respiration in Weightlifters

EV-The average parameters of external respiration in Volleyball

Fig. 1. Diagram 2. Parameters of external respiration of athletes

In muscles increases the concentration of myoglobin 1.5-2 times, the content of energy substrates - 30-50%, the content and activity of oxidative metabolism enzymes - 2-3 times.

Adaptation of the organism to physical activity consists in mobilization and use of functional reserves of an organism, in improvement of the available physiological mechanisms of regulation. The cardio-respiratory system thus has a powerful protective mechanism that prevents the progression of hypocapnia, despite the intensive ventilation of the alveolar space. The adaptation to physical activity is based on neuro - humoral mechanisms, which are included in the activities and improved during the work of motor units (muscles and muscle groups). When adapting athletes there is an increase in the activities of a number of functional systems at the expense of mobilization and use of their reserves.

References

1. Krylov, A.A. (1998), "Some problems of sports' psychology in the modern world", *VestnikBaltiyskoy Pedagogicheskoy Akademii*, No. 14, St.-Petersburg, pp. 46-49.
2. @inproceedings{Tulegenovna2018SomeFO, title={Sportchilarning jismoniy faollik sharoitida moslashuvining ayrim xususiyatlari}, muallif={Chergizova Bibigul Tulegenovna va Ishigov Ibragim Agayevich va Narymbetova Tokhjan Mansurovna}, yil={2018}
3. Kuzmin, M.A. (2011), "Comparison of adaptability of athletes with various specializations", *Uchenye zapiski universiteta imeni P.F. Lesgafta*, Vol. 79, No. 9, pp. 94-97.
4. Lozovaya, G.V. (2003), " Specifics of sports as a kind of activity", Psychological bases of pedagogical activity: Materials of interuniversity scientific conference, St.-Petersburg, pp. 10-13.
5. Matveev, L.P. (1999), "The categories "development", "adaptation" and "education" in physical culture and sport theory", *Teoriya I praktika fizicheskoy kultury*, No. 12, pp. 2-11.

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