

BELARUSIAN STATE UNIVERSITY

Establishment of Education
«International Sakharov Environmental Institute»



ACTUAL ENVIRONMENTAL PROBLEMS

Proceeding of the VII International
Scientific Conference of young scientists,
graduates, master and PhD students



November 23–24, 2017
Minsk, Republic of Belarus



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THE PARAMETERS OF CARDIAC RHYTHM IN INDIVIDUALS OF DIFFERENT AGE UNDER THE INFLUENCE OF PHYSICAL ACTIVITY

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The research of the regularities of the adaptation's process of the organism associated with environment change is one of the most important problems of modern physiology and medicine. The given theme is actual nowadays, as it promotes the development of sports, helps to reach or improve sports achievements. The obtained results are used for the prevention and treatment of many diseases; allow us to identify opportunities for physiological mechanisms.

Keyword: physical activity, adaptation, cardiovascular system, blood pressure, heart rate, evaluation.

In everyday life people often subject themselves to loads of various kinds. One of the types is physical activity. In this research, we will talk about the effect of physical exertion on the parameters of the heart rhythm [1].

Adaptation of the body to physical loads consists of the mobilization and use of the functional reserves of the body, of the improvement of the existing physiological mechanisms of regulation. The basis of phenotypic adaptation is acquired by the mechanisms obtained by everyone in the process of daily life (ontogeny). There are two stages of adaptation – urgent and long-term. Urgent is an immediate response to a single impact of physical activity. The main burden falls on the regulatory mechanisms of the neurohumoral system. The maximum mobilization of physiological reserves is carried out, but they are spent uneconomically [4].

The difference in the right heart rate is the regular contraction of the myocardium with the same rest period and the number of strokes from 60 to 80 per minute. Changes in the work of the heart rhythm associated with the effect of physical exertion, cause various adaptations in the human body, which is the basis of health and high performance [2].

The objects of the research were the parameters of the heart rhythm under the influence of physical activity.

Aim of the research: to study the effect of exercise on the parameters of the heart rate and assess the role played by physical activity in persons of different ages.

Studies were conducted on young men and girls – students aged between 18 and 20 years. The evaluation of the main integrative hemodynamic parameters was performed measuring the pulse and arterial pressure at rest and under physical exertion. The level of physical working capacity was studied by conducting a sample with dosed physical loads. Subjects performed a stepwise-increasing load.

As a result of the research, changes in the parameters of heart function in young men and women of adolescence are demonstrated, which is determined by the effect of physical stress on the cardiovascular system. Using the parameters of heart rate of blood pressure and heart rate, it was revealed that the heartbeat of the majority of subjects is in the range from 38 % to 45 %. Evaluation of the fitness of the cardiovascular system was 40,6 % for young men, 42,5 % for girls. The results show inadequate heart training and indicate the predominance of adaptation of the cardiovascular system of young men over the system of adaptation of girls to physical exertion. At the same time, the parameter of the young men's heart rate is closer to the indicator of good heart's fitness 38 %.

Thus, running, in condition of regular training and selection of individual adequate workload, can solve problems with the cardiovascular system. Moderate physical training can significantly stop the age-related changes in the cardiovascular system, increase aerobic capacity and endurance (indicators of the biological age of the organism and its viability) [3].

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SECTION 3

PROBLEMS OF MODERN ENVIRONMENTAL SAFETY

(BIO-MONITORING, BIO-INDICATION, BIO-REMEDICATION, RADIOECOLOGY AND RADIATION SAFETY, ENVIRONMENTAL MONITORING, MANAGEMENT AND AUDIT, INFORMATION SYSTEMS AND TECHNOLOGIES IN ECOLOGY)

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SECTION 4

CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT RENEWABLE ENERGY SOURCES AND ENERGY CONSERVATION

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