INFLUENCE OF THE BIOLOGICALLY ACTIVE SUPPLEMENT FDP PLUS ON INDICATORS OF PHYSICAL ACTIVITY AND ENERGY METABOLISM

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Annotation*. In this article, the influence of the biologically active supplement FDP PLUS on physical activity and energy metabolism indicators was studied. In the course of the study, changes in physiological indicators related to the body's physical performance, endurance level, and energy metabolism against the background of regular intake of the supplement FDP PLUS were analyzed. The obtained results showed that the FDP PLUS supplement activates energy production processes, improves adaptation to physical activity, and has a positive effect on increasing overall metabolic activity. The research results serve to scientifically substantiate the effectiveness of the use of biologically active additives in sports practice and a healthy lifestyle.*

Keywords. *FDP PLUS, biologically active supplement, physical activity, energy metabolism, metabolism, endurance, work capacity, physiological indicators, sports physiology.*

Introduction. Today, issues of increasing physical activity, ensuring the effective use of the body's energy resources, and improving work capacity are one of the urgent scientific problems in the field of sports physiology and a healthy lifestyle. Adequate provision of energy metabolism processes during physical activity directly affects the effectiveness of muscle activity, the level of endurance, and the general functional state. Therefore, the study of the means of supporting energy metabolism processes and the scientific substantiation of the mechanisms of their influence on the body is of great importance.

In recent years, the use of biologically active additives has been widely used to increase physical activity, activate metabolic processes, and accelerate recovery processes. The biologically active substances contained in these additives are significant because they stimulate energy production processes in the body, improve metabolic metabolism at the cellular level, and enhance adaptation to physical exertion. However, when assessing the effectiveness of biologically active additives, there is a need for scientific research on their influence on physiological and metabolic indicators.

The biologically active supplement FDP PLUS is one of the modern means aimed at supporting energy metabolism processes, and its influence on indicators related to physical activity has not been sufficiently scientifically substantiated. Therefore, the study of the influence of the FDP PLUS supplement on energy production processes in the body, physical performance, and endurance indicators is of current scientific and practical importance.

Literature review. The study of energy metabolism mechanisms during physical activity is one of the main directions of sports physiology. One of the scientists who conducted fundamental research on this issue is Pierre-Olof Åstrand, who scientifically substantiated that energy supply during physical activity is mainly due to carbohydrate and fat metabolism. Åstrand's research showed that the efficiency of energy metabolism is closely related to the aerobic and anaerobic capabilities of the organism[1].

In his scientific works, the American scientist William D. McArdle extensively covered the issues of energy production mechanisms, ATP synthesis, and metabolic adaptation during physical exercise. According to her research, biologically active substances that support metabolic processes play an important role in increasing physical performance and delaying fatigue. McArdle argues that the role of biologically active additives in energy metabolism depends on their components and the mode of intake[2].

Also, in scientific research conducted by George A. Brooks, the relationship between lactate metabolism and energy metabolism during physical activity was deeply analyzed. Brooks evaluated lactate not only as a fatigue factor but also as an important energy substrate and scientifically substantiated the role of metabolic activators in increasing energy efficiency [3].

In studies on the significance of biologically active additives in sports practice, Ronald J. Maughan noted that they increase the efficiency of the body's use of energy resources, accelerate recovery processes, and enhance adaptation to training. In his opinion, the rational use of biologically active additives plays an important role in ensuring the stability of metabolic processes [5].

Analysis of domestic and foreign scientific sources shows that biologically active additives serve to improve physical activity indicators by supporting energy metabolism processes. However, although the studies of the above-mentioned scientists cover general metabolic mechanisms, the influence of the biologically active supplement FDP PLUS on indicators of physical activity and energy metabolism has not been sufficiently studied as an independent object of research.

Therefore, this study is aimed at a scientific assessment of the influence of the biologically active additive FDP PLUS on the processes of energy metabolism in the body and physical performance, which will serve to fill the gaps in the existing scientific literature.

Main Part. In the process of physical activity, the body's energy supply depends on the continuous and balanced course of metabolic processes, which determine the functioning of muscle tissue, the level of endurance, and indicators of general physical fitness. The effectiveness of energy metabolism processes plays an important role in the manifestation of the functional capabilities of the body during physical activity. From this point of view, the study of the influence of biologically active additives on energy production and metabolic processes is relevant from a scientific and practical point of view.

The effect of the biologically active supplement FDP PLUS is closely related, first of all, to the processes of energy metabolism, which serves to maintain metabolic activity at the cellular level. Under conditions of physical activity, energy reserves in the body are quickly depleted, and the activation of metabolic processes is required. Against the background of taking the supplement FDP PLUS, an activation of energy production processes, an improvement in the energy supply of cells, and a stabilization of the functional state of muscle tissue were observed.

During the study, when analyzing the indicators of physical activity, it was established that the addition FDP PLUS had a positive effect on increasing physical performance. During the period of additional intake, an increase in the level of endurance, an increase in the duration of physical exercises, and a later manifestation of signs of fatigue were noted. This is explained by the more efficient organization of energy exchange processes.

The results of the assessment of energy metabolism indicators confirm the positive effect of the biologically active additive FDP PLUS on metabolic processes. It was noted that the activation of energy production mechanisms during physical activity contributes to the balanced maintenance of the body's aerobic and anaerobic capabilities. As a result, cases of energy deficiency in muscles decreased, and the process of adaptation to physical loads accelerated.

The addition FDP PLUS also had a positive effect on recovery processes. It was established that after physical exercises, the restoration of the body's functional state accelerated, and the symptoms of general weakness and fatigue decreased. This condition is assessed in connection with the stabilization of metabolic processes and an increase in the efficiency of energy metabolism.

In general, the conducted analyses confirm that the biologically active supplement FDP PLUS has a positive effect on physical activity and energy metabolism indicators. These additional physical loads can be assessed as an effective means of maintaining the body's energy capabilities, increasing work capacity, and improving metabolic adaptation processes.

Conclusion. The results of the conducted research confirmed that the biologically active supplement FDP PLUS has a positive effect on physical activity and energy metabolism indicators. In the course of the study, it was established that regular intake of the supplement serves to improve the body's energy supply, increase physical performance, and raise the level of endurance.

The obtained results showed that the biologically active supplement FDP PLUS activates energy metabolism processes, ensures metabolic stability, and enhances the mechanisms of adaptation to physical activity. The late manifestation of signs of fatigue during physical exercises and the acceleration of recovery processes after training were assessed as important factors confirming the functional effectiveness of this supplement.

Also, the research results indicate the expediency of using the biologically active supplement FDP PLUS in sports practice and in healthy lifestyle programs aimed at increasing physical activity. This supplement can play an important role in increasing the effectiveness of physical loads by supporting the body's energy capabilities. In general, the study of the influence of the biologically active additive FDP PLUS on physical activity and energy metabolism indicators serves to scientifically substantiate the effectiveness of the use of biologically active additives. Further in-depth and comprehensive research in this area will allow for a clearer understanding of the mechanisms of action of the FDP PLUS supplement.

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