

“Fuco-Bar” – A Product that Improves an Athlete’s Performance

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Abstract

High - quality sport is associated with the maximum inclusion of all physiological systems, all types of metabolism. Therefore, there is a high risk of developing disorders of the cardiac, respiratory, thermoregulatory and hormonal systems [1]. The development of oxidative stress, the fall of the energy sources and the accumulation of harmful metabolites are noted [2], therefore, the urgent question is the development of health-saving technologies in which the nutritional factor plays a key role.

An athlete needs much more constructing (protein), energetic (carbohydrates and fats) and regulatory (vitamins and minerals) materials. It creates a problem to chew and absorb a large amount of food and athletes are at high risk of developing gastrointestinal tract disorders. Therefore, there are many specialized products or functional nutrition products that appeared to provide the body with the easily digestible macro and micronutrients.

Considering the fact that the nutrition of a modern person is mainly unbalanced, then for athletes who require more irreplaceable nutritional factors (INF), this issue is especially relevant. Therefore, a lot of drugs have appeared that help improve the body's supply of INF. The Moscow company ProtenPharma has developed a specialized food product (Balance), which improves nutritional status of an athlete, since it contains an easily digestible protein (soy protein hydrolyzate), the most important anabolic amino acid leucine and a vitamin premix. It has been tested on athletes from the Russian Federation (RF) and has been approved for use by RF athletes. However, it is important not only to obtain INFs, but also that they are effectively used by the body itself.

In recent years, nutraceuticals (a derivative of the words nutriology - nutrition and pharmaceuticals) are of particular interest. Nutraceuticals help not only improve nutritional status of a person, but also have a high biological activity, therefore, they can largely replace conventional drugs. In this regard, in our opinion, the sulfated polysaccharide of brown seaweed fucoidan is of particular interest. Although it does not directly contribute to providing the body with energy sources, it improves the homeostasis of critical systems in the body. This has shown its ability to maintain the level of free radicals in the body due to antioxidant [3] and prooxidant properties. Fucoidan helps to normalize the immune status by restoring the protective link of immunity [4] and reducing the allergic [5] Fucoidan improves the process of osteosynthesis [6], which is especially important for athletes to reduce the manifestations of osteoporosis and prevent bone fractures. Literature data indicate a positive effect of fucoidan in relation to the immune status of athletes [7], therefore, a decrease in acute respiratory diseases was noted 2–4 weeks after the Marabonne race

[8]. The polysaccharide intake helped to increase the functional capabilities of the body [9]. We recently published a review regarding the positive effect of fucoidan on metabolic processes and their regulation systems [10]. In this regard, on the instructions of Fucoidan World, ProtenPharma has developed technology and released trial batch of a specialized food product (Fuco-Bar). The “Fuco-Bar” has been successfully tested in Minsk at the Belarusian University of Physical Culture with young male national team athletes, middle distance runners, during training camp. There were 10 sportsmen in each group. They each were given their nutrition bar twice a day – in the morning and evening. Various indicators of athletic performance were measured both at the beginning and end of training camp: during the 30 m run – speed capabilities; during the 3 km run – aerobic endurance; during the standing long jump a special formula was used to calculate the instantaneous power in watts (W). A treadmill simulator was used; blood sugar, hemoglobin, erythrocyte and leukocyte levels were also determined.

Following the end of training camp all of the listed indicators were once again measured, evaluated and compared to the initial data as a percentage (Figure).

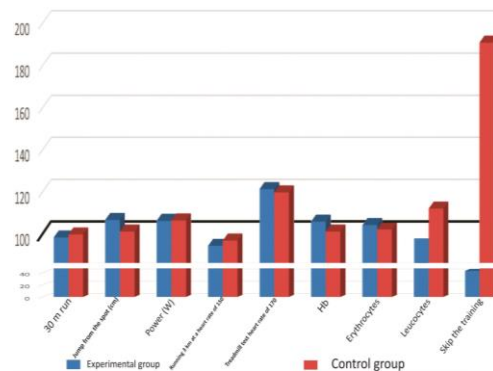


Fig. Results of testing effectiveness of the Fuco-Bar product in improving the performance of athletes. Percentage of results after collection in relation to data before collection

Fuco-Bar contributed to the improvement of all studied parameters: decrease in the running time by 30 meters (speed improvement). The length of the standing jump has increased (power has increased), endurance indicators have improved (3 km run and treadmill). There was an increase in hemoglobin and erythrocytes and a decrease in leukocytes. A very interesting fact is the decrease in the morbidity of athletes (the last two columns), which may be associated with an improvement in the immune status. This is a very important aspect for athletes, who often have a decrease in immunity and an increase in acute respiratory illness after high physical exertion. In the control group, which did not receive the product, there

was only an improvement in speed and endurance, but there was an increase in leukocytes (an indicator of the inflammatory response) and the number of misses due to illness.

Currently, there is an acute question of products that contain prohibited compounds appearance on the market. Therefore, the Fuco-Bar product was tested at anti-doping laboratory in Minsk and a conclusion about the absence of prohibited compounds in it was obtained. An athlete, like any person, requires compounds that improve his health and, accordingly, physical performance, but most of these compounds are included in the list of prohibited substances (doping).

Thus, intake of specialized food product Fuco-Bar during the training collection period contributed to improvement of the athletes' performance according to the indicators usually used for assessment of the training camp effectiveness.

Consequently, Fuco-Bar is an anti-doping product for improvement of performance and maintaining health during the training camp. Reception of the Fuco-Bar product reduces the use of pharmacological drugs that are forced to prescribe by sports doctors, which also reduces the risk of illegal drugs entering the athlete's body.

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