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ANALYSIS OF PLANT-BASED FOOD PRODUCTS IN THE DIETARY RATIONS OF STUDENT-ATHLETES

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Adequate nutrition, ensuring the replenishment of energy expenditures and meeting the needs of a young athlete's body for plastic materials and biologically active substances, is an essential condition for the normal course of growth and development processes, maintaining high physical and mental performance, accelerating adaptation to environmental factors and physical loads, reducing post-exercise recovery time, and preventing diseases associated with nutritional factors [1, 2].

The nutritional requirements of young athletes for energy, nutrients, and biologically active substances, which are intensively expended during vigorous muscular activity, are at a higher level compared to those of their non-athlete peers. At the same time, the daily requirements for energy, macro- and micronutrients vary widely depending on the type of sport, age, sex, body weight, level of training, training period, emotional state, climatic and geographical conditions, and other factors [3, 4, 5], which must be taken into account when developing dietary rations for children and adolescents engaged in sports. The nutrition of young athletes should be organized in accordance with the principles of rational nutrition, with mandatory consideration of the anatomical and physiological characteristics of the body of children and adolescents, as well as the nature and intensity of physical нагрузки, which depend on the type of sport and the stage of training.



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found to exceed the average daily norm. Specifically, the requirement for wheat flour at the center was fully met during autumn, winter, and spring, and slightly exceeded the recommended levels (by 1,8%, 2,0%, and 1,0%, respectively). The daily intake of cereals and pasta products was found to be significantly below the recommended levels in all three seasons: the deficit amounted to 6,5% in autumn, 10,1% in winter, and 14,3% in spring.

Sugar and confectionery products serve as a rapid source of energy for athletes, helping to maintain high training intensity and accelerate recovery by replenishing glycogen stores. Their proper use is essential; specifically, excessive consumption should be avoided, and they are recommended primarily before or after intense training sessions. At the center, regardless of the season, the average daily requirement for sugar among weightlifters was below the recommended level by 11,6%, 11,1%, and 8,1% in autumn, winter, and spring, respectively. The analysis of honey consumption showed that even half of the daily requirement was not met. The actual intake of honey accounted for 31,6% of the recommended level in autumn, 26,1% in winter, and 38,5% in spring. Confectionery products provided to the weightlifters at the center were also insufficient in all three seasons, not reaching even half of the recommended daily amount per student. The deficit amounted to approximately 1,66 times below the norm in autumn and winter (41,9% and 40,2%, respectively), and about two-thirds below the recommended level in spring (32,1%).

The daily intake of vegetable oil per weightlifter was found to be very close to the recommended level in autumn (97,1%), while it was 7,7% below the norm in winter and 12,1% below in spring.

Vegetables are an essential component of athletes' nutrition, as they are rich in vitamins, minerals, dietary fiber, and antioxidants, which support recovery after training, enhance endurance, and promote overall health. They also improve



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digestion and help eliminate toxins, while-unlike some fruits and starchy root crops-generally do not contain excessive amounts of carbohydrates. At the center, potato consumption among student-athletes was relatively higher in autumn (62,1%) compared to other seasons. In winter and spring, the deficit relative to the recommended daily intake of potatoes was around 45%, whereas in autumn it was 37,9%. During the study period, the provision of vegetables to the athletes at the center was very close to the recommended daily level in autumn (96,4%). However, a deficit was observed in winter (10,7%) and spring (16,2%).

Fruits (including berries, fresh fruits, juices, and vitamin-enriched beverages) are beneficial for athletes as a source of rapidly available carbohydrates for energy, antioxidants to combat inflammation and free radicals, vitamins (especially vitamin C) for muscle recovery, and potassium to help prevent muscle cramps. They are particularly useful when consumed before training sessions and during breaks. At the studied center, throughout the year, the intake of fruits, berries, fresh fruits, juices, and vitamin beverages was markedly below the recommended levels, with less than one-third of the required amount being met. The deficit reached 71,6% and 69,7% in autumn and winter, respectively, and 65,1% in spring. The daily intake of dried fruits (such as rosehip, dried apricots, raisins, and others) per student was also insufficient. The deficit averaged 46% in winter and spring, while in autumn it amounted to 40,3%.

During the study period, the recommended daily intake of tea was found to be 62% below the norm across all seasons. Cocoa products were not provided at all in autumn at the center, while in winter and spring the deficits amounted to 96% and 77%, respectively. The daily consumption of iodized salt throughout the year was, on average, 20% below the recommended level. Yeast, non-carbonated mineral water, and wheat bran powder were not included in the diets of the student-athletes in any of the seasons.



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In conclusion, it can be stated that in the diet of student-athletes engaged in weightlifting at the Chirchik Olympic and Paralympic Sports Training Center, the intake of low biological value flour-based products exceeded the recommended norms. At the same time, essential foods necessary for the proper growth and development of young athletes—such as fresh fruits and berries—were not consumed even at half of the recommended levels.

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