

ATTITUDE OF ATHLETES TOWARDS DIETARY SUPPLEMENTS

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Abstract. *At the beginning of 2023 we carried out a survey among active athletes asking about their attitude towards dietary supplements. **Aim:** The aim of the study was to evaluate the attitude of athletes towards dietary supplements using a survey method. The objective of the study was to determine whether active athletes use dietary supplements. **Materials and methods:** The participants in the study were asked to anonymously complete a survey consisting of 16 questions. In January 2023, we surveyed 50 active athletes from the „Vasil Levski” National Sports Academy (35 men and 15 women). Forty-six of the participants were between 18 and 22 years old and 4 were between 23 and 27 years old. **Results:** The majority (94%) of the surveyed athletes trusted the advertisement of a particular dietary supplement. Ninety per cent had complete trust in the pharmacists’ advice. Pharmacists played a significant role in the choice of dietary supplements. A high percentage (60%) of the respondents who used dietary supplements had not sought medical advice prior to their use. Ninety per cent of the respondents used dietary supplements for weight loss in order to fit in a particular category; 78% indicated that they used dietary supplements for improvement of their sports achievements; 72% used supplements to increase their stamina and 46% – to shorten their time for recovery. A campaign should be initiated to encourage the use of dietary supplements only when they are prescribed by physicians.*

Key words: dietary supplements, sports, athletes, survey

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INTRODUCTION

Dietary supplements are an integral part of each athlete’s diet. The information on their use in athletes’ regimens changes daily. We conducted this survey to gain an insight into the attitude of 50 active athletes towards dietary supplements.

The United States of America’s Food and Drug Administration (FDA) uses the following definition of supplements: A dietary supplement is a product for

ingestion that contains a “dietary ingredient” intended to supplement the diet. The “dietary ingredient” can include one or more components. Dietary supplements can be taken in different forms: tablets, capsules, gels, liquids or powders [1]. The types of dietary supplements include herbs or other botanicals, minerals, vitamins, amino acids, concentrates, metabolites, constituents, extracts, etc. [1].

One of the main roles of proteins is to facilitate muscle recovery remodelling through muscle protein syn-

thesis (MPS) [2]. It has been proven that increased dietary intake of proteins improves immunity during intensive bouts of training and in cyclists [3, 4].

During intensive training a carbohydrate-rich diet is recommended (5-7 g/kg per day) [5, 6, 7].

Creatine is synthesized mainly by the liver, also by the pancreas and the kidneys. The main sources of creatine are meat (from 3 to 5 g creatine per 1 kg of raw meat) and fish. Creatine can support recovery and increases the MPS after exercise [8, 9, 10].

MATERIALS AND METHODS

The participants were asked to complete an anonymous survey consisting of 16 questions. In January 2023, we surveyed 50 active athletes from the Vasil Levski National Sports Academy (35 men and 15 women). Forty-six of the respondents were between 18 and 22 years old and 4 were between 23 and 27 years old. The role of internet advertisements is best illustrated by the answer to the following question: "Where do you prefer to buy your supplements from?" Eighty-four per cent of the respondents indicated that they were buying dietary supplements online, while 68% preferred to visit pharmacies.

When asked: "What advertisements influence you the most?" 98% answered that they trusted product advertisement articles the most.

The majority (94%) of the surveyed athletes trusted the advertisement of a particular dietary supplement.

Pharmacists played a significant role in the choice of dietary supplements: 90% of the surveyed athletes had complete trust in the pharmacists' advice.

A high percentage (60%) of the surveyed athletes using dietary supplements had not consulted a physician prior to starting their use.

One of the most important questions in the survey is: "What is your source of information on the different types of supplements?" Our study established that the respondents were obtaining their information from friends (98%) and the internet (88%) (Table 1).

When asked what amount of money they could spend monthly on dietary supplements, approximately half of the participants replied they could spend more than BGN 50.

Ninety-eight per cent of the respondents indicated that they are buying dietary supplements for personal use. The answers to the question: "During what period of the year are you buying dietary supplements the most?" showed that 60% of the participants buy the most in spring and a similar percentage (54%) – in summer.

Table 1. Answers to the question: "What is your source of information on the different types of supplements?"

What is your source of information on the different types of supplements?	N	%
Friends	48	96.0
The internet	44	88.0
Radio and television	4	8.0
Advertisements	4	8.0
Other	2	4.0

Each athlete has individual needs and so each uses dietary supplements for different purposes in the beginning of summer. Ninety per cent of the respondents were using the supplements for weight loss and 68% – for detoxication (Table 2).

Table 2. Answers to the question "What supplements are you taking in early summer?"

What supplements are you taking in early summer?	N	%
For detoxication	34	68.0
For weight loss	45	90.0
Vitamins	23	46.0
Probiotics to increase immunity	3	6.0
Digestive enzymes	4	8.0
I do not take any supplements	1	2.0
Other	6	12.0

Seventy-eight per cent of the athletes indicated that they used dietary supplements in order to improve their sports achievements, 72% used them for increased stamina and 46% – for faster recovery (Table 3).

Table 3. Answers to the question: "What is your purpose for using dietary supplements?"

What is your purpose for using dietary supplements?	N	%
improvement in sports achievements	39	78.0
increased stamina	36	72.0
improvement of circulation and nutrient intake	8	16.0
decreased sense of effort	12	24.0
decreased time for recovery	23	46.0
decreased muscle pain	15	30.0
decreased risk of injury	6	12.0
better muscle strength and health	35	70.0
support for the immune system	4	8.0
improvement in general health	12	24.0

The dietary supplements used most frequently by active athletes for appropriate recovery after training are: creatine – 84%, carbohydrates – 54%, multivitamins – 54%, L-carnitine – 42% (Table 4).

Table 4. Answers to the question: “What supplements are you using to ensure appropriate recovery after training?”

What supplements are you using to ensure appropriate recovery after training? Please list them:	N	%
Branched-chain amino acids (BCAA)	13	26.0
L-glutamine	6	12.0
Whey protein	4	8.0
Creatine	42	84.0
Carbohydrate supplements	27	54.0
L-carnitine	21	42.0
Leucine	17	34.0
Multivitamins	27	54.0
Beta-alanine	15	30.0
Magnesium	26	52.0

Active athletes reported that they most often take: creatine – 84%, protein powder – 60%, magnesium 54%, multivitamins – 54% (Table 5).

Table 5. Answers to the question about what dietary supplements are taken by the surveyed athletes

You are taking:	N	%
Protein powder	30	60.0
Multivitamins	27	54.0
Creatine	42	84.0
Protein bars	12	24.0
BCAAs	9	18.0
Fish oil	6	12.0
Magnesium	27	54.0
Linseed oil	19	38.0
Dextrose	7	14.0
Beta-alanine	14	28.0

Sixty per cent of the athletes had not encountered any adverse effects related to their intake of dietary supplements, while 26% thought that supplements may lead to adverse effects.

In a study conducted by Jovanov et al., they found that most respondents used protein supplements (54.5%), and 41.4% indicated their trainers as the main source of information about supplements. The main motivation for taking supplements was to in-

crease sports performance in 35.4%. The majority of athletes (72.1%) were aware of the associated health risks of using dietary supplements [11].

In every textbook on human physiology, it is written how important it is to take in micro and macro elements, and this can also be done through nutritional supplements, but only under medical supervision [12].

DISCUSSION

Eighty-eight per cent of the respondents are obtaining their information on dietary supplements from the internet. In a study conducted by Jovanov et al., they found that 41.4% cited their trainers as their primary source of information about supplements.

The role of team coaches and physicians is to assist in the choice of safe and beneficial supplements. Eighty-four per cent of the respondents indicated that they are buying dietary supplements online. This behaviour entails health risks, as not all products sold on the internet are certified. The majority (94%) of the surveyed athletes trust the advertisements of dietary supplements. This may not always be the best decision and consulting a physician is mandatory. The most common supplements taken by active athletes are creatine (84%) and protein powder (60%). In a study by Jovanov et al., they found that most respondents used protein supplements (54.5%).

This result is consistent with the worldwide tendencies among athletes. The majority (78%) of the respondents indicated that they use dietary supplements for improvement of their athletic achievements, 73% use supplements to increase their stamina and 46% – to shorten their recovery period. In a study by Jovanov et al., they found that the main motivation for taking supplements was to increase athletic performance at 35.4%.

Taking supplements is a part of the athletes' everyday life, but only 26% of the respondents think that this may lead to adverse effects. In a study by Jovanov et al., athletes (72.1%) were aware of the health risks associated with using dietary supplements.

All risks and benefits connected to taking dietary supplements need to be explained to them.

CONCLUSIONS

The lack of sufficient opportunities to recover between training and competitions coupled with international trips is a significant problem faced by all athletes. They need to plan effective strategies for recovery under the guidance of their coaches. One of the most

important strategies is taking dietary supplements during the recovery process. Unfortunately, our team did not find such a large-scale study in Bulgaria, and this motivated us to do this study.

Only a small proportion of athletes consults a physician before they use dietary supplements. A campaign should be initiated to encourage the use of dietary supplements only when they are prescribed by physicians.

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