

MOGUĆNOSTI KORIŠTENJA PROTEINA SURUTKE KAO SUPLEMENATA U ISHRANI SPORTISTA

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Sažetak: Proteini su gradivne jedinice ljudskog tijela te su potrebni za izgradnju: mišića, krvi, unutrašnjih organa, kostiju i noktiju, te tetiva, kože, hormona, enzima, neurotransmitera i drugo. Međutim, u ishrani vrhunskih sportista, iako kvalitetni proteini igraju važnu ulogu u ukupnom energetske bilansu, oni se po pravilu standardnom ishranom ne mogu unijeti u dovoljnoj količini u organizam. Proteini surutke se smatraju najvrednijim proteinima u smislu da sadrže najviše aminokiselina razgranatog lanca (BCCA: leucin – Leu, izoleucin – Ile i valin - Val) te dobro izbalansiran odnos između esencijalnih aminokiselina, što ih čini osnovnim suplementima u ishrani vrhunskih sportista, ali i rekreativaca. Velika razlika u biološkom kvalitetu proteina surutke, u odnosu na druge proteine, potiče od visokog sadržaja lizina i tioaminokiselina cisteina i metionina. Odnos ovih aminokiselina bitan je za iskorištenje proteina u organizmu koji je u surutkinim proteinima daleko veći nego u kazeinu, jajetu, goveđem mesu, soji, grašku i dr. Koncentracija leucina, izoleucina i valina (aminokiseline razgranatih lanaca) je neophodna pri napornom mišićnom radu sportista jer se, za razliku od drugih, ove esencijalne aminokiseline direktno metaboliziraju i koriste u izgradnji tkiva tokom vježbanja i kondicionih treninga. S druge strane, glutamin je nezamjenjiv suplement kod vrhunskih sportista jer se pri intenzivnim i napornim sportskim treninzima njegove zalihe (kojih je oko 60% od svih slobodnih aminokiselina) brzo troše, što dovodi do pada imuniteta i fizičke iscrpljenosti. Cilj rada je bio da se prikaže pregled dosadašnjih istraživanja vezanih za značaj surutkinih proteina u ishrani, sa posebnim akcentom na njihov potencijal i primjenu kao suplemenata u ishrani vrhunskih sportista.

Ključne riječi: proteini surutke, nutritivna vrijednost, suplementi, sportisti

POSSIBILITIES OF USING WHEY PROTEIN AS SUPPLEMENTS IN THE NUTRITION OF ATHLETES

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Abstract: Proteins are the building blocks of the human body and they are needed to build: muscles, blood, internal organs, bones and nails, tendons, skin, hormones, enzymes, neurotransmitters and more. However, in the nutrition of top athletes, although high-quality proteins play an important role in the overall energy balance, as a rule, they cannot be taken into the organism in sufficient quantity with a standard nutrition. Whey proteins are considered the most valuable proteins in the sense that they contain the most branched chain amino acids (BCCA) and a well-balanced ratio between essential amino acids, which makes them essential supplements in the nutrition of top athletes and recreational athletes. The big difference in the biological quality of whey protein, compared to other proteins, comes from the high content of lysine and the thioamino acids cysteine and methionine. The ratio of these amino acids is important for the utilization of protein in the body, which is far greater in whey proteins than in casein, egg, beef, soy, peas, etc. The concentration of leucine, isoleucine and valine (branched chain amino acids) is necessary during strenuous muscular work of athletes because, unlike others, these essential amino acids are directly metabolized and used in tissue building during exercise and conditional training. On the other hand, glutamine is an irreplaceable supplement for top athletes because during intense and strenuous sports training, its stores (which are about 60% of all free amino acids) are quickly used up, which leads to a drop in immunity and physical exhaustion. The aim of the paper is to present an overview of previous research related to the importance of whey proteins in nutrition, with a special emphasis on their potential and application as supplements in the diet of top athletes.

Key words: whey proteins, nutritional value, supplements, athletes