

## **Abstract:**

The thesis researches three dietary supplements – chromium, colostrum and taurine. The object is to show the importance of these three supplements for sports diet and for medical purposes as well.

Trivalent chromium is an essential element, active form of which significantly participates in carbohydrate metabolism by enhancing the ability of insulin to distribute carbohydrates into target cells. Recommended daily intake has been set at 25 – 45 µg. Studies have confirmed that chromium significantly increases the activity of insulin and promotes glucose tolerance, which makes it an essential element for people, who suffer from diabetes mellitus type II. According to accessible studies, chromium doesn't play an important role in muscle building. Only a half of the studies have indicated chromium as an influential element in body weight reduction.

Colostrum, a form of milk produced by mammary glands just after giving birth, is rich in growth factors, amino-acids and bioactive protein. Colostrum is appreciated mainly for its immune system - supporting elements. Its recommended daily amount is between 20 and 60 grams. Although colostrum is rich in growth factor IGF-I, its influence on muscle growth has not been proven. Positive finding is the fact, that colostrum promotes post-exercise recovery. Some other studies show that supplementation with colostrum improves sprint performance. However, no effectiveness in terms of endurance has been detected. Colostrum is also believed to be influential in improving physical composition in terms of fat-free mass. However, another research work would be necessary in order to support this theory.

Taurine is  $\beta$  – amino acid with antioxidative potential. It participates in many physiological processes and it is considered an essential element of a human organism. The absence of taurine can lead to serious diseases such as central retinal degeneration and cardiomyopathy. Taurine occurs naturally in food, especially seafood and meat. Recommended daily intake is between 500 and 300 mg. According to accessible studies, taurine can regulate calcium which allows it to have both cardioprotective and neuroprotective effect on human organism. It has been proven that taurine takes part in muscle contraction and this could possibly enhance athlete's performance. Other studies disprove an ergogenic effect of taurine. Supplementation with taurine has been shown to prevent oxidative stress, which could be beneficial both for athletes and for medical purposes as well. This subject will, however, require further series of observation.

**Keywords:** chromium, colostrum, taurine, sports diet, dietary supplements