BETA-ALANINA IN METABOLIC CONTRIBUTION TOWARDS INCREASED PHYSICAL PERFORMANCE

Marcos Guilherme Maciel de Araújo[1]
Camilo dos Santos Ribeiro[2]
Vanderlei Joaquim de Oliveira Junior[3]
Gilberto Masayte Takano Rita[4]
Flavia Melo[5]

Beta-alanine is a beta-amino acid widely used, mainly in sports practice, with the purpose of increasing performance. As physical exercise is done, hydrogen ions are produced, increasing muscle acidosis and reducing the capacity of intracellular tamponade, thus decreasing muscle pH. This process occurs after approximately 4 minutes of high intensity exercise, although others have suggested that H+ accumulation is unlikely to be the primary cause of fatigue. Acidosis interferes with various processes that will result in reduced strength and fatigue production. The main effect of beta-alanine is the reduction of this muscle acidosis and, consequently, reducing muscle fatigue in strenuous training sessions, through the increase of carnosine. The aim of this study was to seek references on the metabolic contribution of beta-alanine to increased physical performance. Pubmed database was used for literary survey. To conduct this work, articles published in the last ten years (2012-2022) were selected, restricting those whose main focus of supplementation was not on endurance and/or weightlifting modalities. Based on the surveys conducted from the selected articles, it was possible to verify that beta-alanine is a level A supplement in terms of improvement in sports performance. Increased muscle carnosine content induced by β-alanine supplementation is a universal finding, but only a few studies report an improvement in exercise performance. Currently, there is some scientific evidence that β-alanine supplementation offers significant and valuable benefits for athletes competing in events involving sustained high-intensity exercises of 1 to 7 minutes in duration. β-alanine supplementation may allow athletes to train at a higher intensity and increase their training volume during training series that stress the maximum exercise capacity. Based on the studies, the effective dosage for increasing performance ranges from 3.2 to 6.4 g/day of chronic use (whether there is training or not).

Keywords: beta-alanine; supplementation; exercise; fatigue; performance.

[1] Discente. Curso Nutrição Universidade Evangélica de Goiás – UniEVANGÉLIA. E-mail: flaviamelo76@hotmail.com
[2] Discente. Curso Nutrição Universidade Evangélica de Goiás – UniEVANGÉLIA. E-mail: flaviamelo76@hotmail.com
[3] Discente. Curso Nutrição Universidade Evangélica de Goiás – UniEVANGÉLIA. E-mail: flaviamelo76@hotmail.com
[4] Discente. Curso Nutrição Universidade Evangélica de Goiás – UniEVANGÉLIA. E-mail: flaviamelo76@hotmail.com
[5] Docente. Curso Nutrição Universidade Evangélica de Goiás – UniEVANGÉLIA. E-mail: flaviamelo76@hotmail.com