

Abstract

Title:

The effect of citrulline and citrulline malate supplementation on selected physiological indicators – review study.

Objectives:

Systematic findings overview of the effect of citrulline and citrulline malate on healthy individual's locomotor system and other physiological indicators.

Methods:

The study is designed as a findings overview. Electronic databases pubmed.com and ukaz.cuni.cz were used as an information source. "Citrulline" or "citrulline malate" and "exercise performance" and "randomized controlled trial" keywords were used for the information search.

Results:

Eighteen studies and 307 individuals are included in the overview. Studies are categorized according to duration and type of supplementation substance. Four studies agree on the strength improvement after acute use of citrulline malate. Four studies agree on endurance improvement in case of citrulline long term use. Three studies conclude on pain mitigation in case of substance use 24, 48 and 72 hours after training. Also, studies agree on increase of the levels of citrulline, arginine and ornithine plasmatic concentration after use of citrulline and citrulline malate. Three studies indicate possible fatigue decrease during the training in case of use of citrulline.

Conclusion:

Use of citrulline and citrulline malate can be recommended for athletes as an appropriate method of strength and endurance improvement. Also, muscle pain can be mitigated by use of the substances after training. Short-term and long-term use of the supplements is safe and without any side effects.

Keywords:

Citrulline, malate, supplements, exercise performance.