

Glutamine is an amino acid and is not considered one of the eight essential amino acids. Amino acid supplementation outspreaded to enhancing athletic performance, preparation, removal of fatigue and minimising risk of injuries. Delayed onset muscle soreness (DOMS) is a result of a combination of unaccustomed muscle contraction (especially lengthening of the muscle under load) and poor motor neuron recruitment. This study investigated the effect of L-glutamine supplementation on DOMS after 30 min ergometric exercise by comparing two metabolic enzymes (aldolase and creatine kinase) and hip flexors range of motion. Experimental double blind design was used. This study included 20 non-athletic girls with 22.8 ± 2.6 years old and 21.45 ± 3.1 body mass index. The subjects were randomised to glutamine and placebo supplementations. The supplement group was ingested 4 weeks, three times a week and twice a day (5 g per time). The control group used placebo same as experimental group. Analyses of variance and t test were used for data analyses. Aldolase increased 36 h after activity than after activity time in experimental group, but in control group it was reverted. There is a significant difference in aldolase level between control and experimental group ($p > 0.05$). The creatine kinase increased significantly in 36 h after activity than after activity time in experimental group. Range of motion of hip joint decreased in T3 in both of them significantly, but it was recovered for experimental group 36 h after activity. These results suggest that L-glutamine supplementation attenuates DOMS effects, muscle damage and downfall of performance in flexor of hip.

143 **ASSESSMENT OF THE EFFECT OF L-GLUTAMINE SUPPLEMENTATION ON DOMS**

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