

Effect of Aspartate Supplementation on Athletic Performance in Young Men.

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D-aspartic acid has been suggested to enhance athletic performance by regulating the hypothalamus-pituitary-gonadal axis by increasing plasma testosterone. Aspartate supplementation may be useful to increase testosterone for individuals with low plasma testosterone due to aging and other conditions.

PURPOSE: To determine the effect of D-aspartic acid supplementation on athletic performance in young male athletes.

METHODS: After screening for ACSM low risk, 9 healthy male athletes (average age = 22y, body weight = 82.7 kg and body fat = 10.4%) were randomized to two groups for supplementation using a double blinded parallel arm experimental design. They ingested either 3 grams of d-aspartic acid (Aspartate, n=5) or a Placebo (n=4) for 14 days supplied in capsule form. Subjects recorded and replicated previous 3 day diets prior to testing. Physical assessments were performed prior to and after supplementation included a peak VO₂ test by cycle ergometer, 1 maximal repetition bench press and 1 maximal repetition squat (average values \pm SD before supplementation were 41.7 \pm 6.4 ml/kg/min, 117.9 \pm 11.1 kg and 151.7 \pm 19.0 kg, respectively).

RESULTS: The Aspartate group improved performance in 1 maximal repetition bench press by 4.5 \pm 1.6kg (average \pm SEM, p=0.03) and 1 maximal repetition squat by 8.2 \pm 3.8kg (average \pm SEM, p=0.04). No change in performance measures were observed in the Placebo group. Body composition did not change for either group.

CONCLUSION: D-aspartic acid supplementation may lead to improved acute skeletal muscle synthesis improving upper and lower body muscle performance.