

## Effects of High Concentration Vivissential Amino Acids Sports Drink Ingestion on Performance in Trained Athletes

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### ABSTRACT

Essential amino acids are necessary for protein nutrition and muscle sustainability. Previous studies looking at the effects of BCAAs did not result in measurable reductions in muscle damage and enhanced recovery of muscle function. **PURPOSE:** The Calwood Nutritionals Company manufactures a balanced nutritional formula of amino acids with the addition of a higher concentration of arginine and methionine, which during an acute 3-day study in our lab decreased muscle degradation in a young sedentary population. The purpose of this study is to examine the changes in performance following the chronic consumption of the essential amino acids in collegiate athletes while following the strength and conditioning training plan of the University Athletics department. We aim to compare a single-dose amino acid group (SDG), double-dose group (DDG) and a placebo group (PG) on a double-blinded study to measure changes in the lactate threshold, aerobic capacity and strength. **METHODS:** In this study, 17 participants (7 PG, 6 SDG, 4 DDG) completed a health screening and a follow up laboratory visit. Laboratory visits consisted of recording height, weight, HR, BP, BMI, %BF resting ECG, blood lipids, handgrip MVC, maximum push-ups, a broad jump distance, timed 60m sprint, 3RM dead lift and bench press, and timed flexed arm hang. VO<sub>2</sub> max tests were performed on a cycle ergometer and blood lactic acid was measured. For 30 days the three dose groups consumed two 20oz Gatorade drinks a day with either no EAA (PG), one dose of 6.6g (SDG) or two 6.6g doses (DDG) of Vivissential amino acid powder. **RESULTS:** The DDG improved significantly in push-ups ( $12.25 \pm 5.32$ ,  $p=0.019$ ). The SDG improved significantly in their maximal aerobic capacity (VO<sub>2</sub> max  $1.83 \pm 1.45$  ml/min/kg,  $p=0.027$ ). All groups improved significantly in 3RM dead lift bench press (PG:  $34.29 \pm 32.20$ ,  $p=0.0305$ ,  $5 \pm 5$ ,  $p=0.0382$ ; SDG:  $24.17 \pm 13.57$ ,  $p=0.0073$ ,  $7.5 \pm 4.18$ ,  $p=0.0071$ ; DDG:  $45 \pm 20.82$   $p=0.0228$ ,  $15 \pm 5.77$ ,  $p=0.0138$ ). The DDG was the only group that improved significantly in 60m sprint ( $0.33 \pm 0.21$  secs,  $p=0.0497$ ). **CONCLUSION:** All groups improved in their performance following 30 days of training with the strength and conditioning coach. The changes between the groups were not statistically significant. However, the changes within the groups were significant in the SDG and DDG. These results suggest that Vivissential amino acid supplementation combined with training does increase strength and improves the performance in trained athletes. Research reported in this publication was supported by a research contract with Calwood Nutritionals.