

Impacts of Creatine Supplementation on Running Anaerobic Sprint Performance Test (RAST) Power and Velocity in Youth Soccer Players

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ABSTRACT

Creatine supplementation commonly enhances short-term, high-intensity effort performance such the soccer-specific ability to perform repeated sprints. Research in this regard is both generally sparse but specifically more so in youth athletes. **PURPOSE:** to determine the effect of 28 days of creatine monohydrate supplementation on running anaerobic sprint performance (RAST) power and velocity in youth soccer players. **METHODS:** Sixteen male youth soccer players were randomized in double-blinded, parallel-group fashion to either 28 days of creatine supplementation (CRE; 15.9±0.35y) or an equivalently-dosed dextrose (PLA; 15.5±0.54y; 0.3g/kg/d loading dose for the first seven days, followed by 0.03g/kg/d for the remaining period), whereby they maintained their typical diet and training routines throughout the study. Furthermore, all subjects measured their weight and performed two RAST tests both prior to (PRE) and following (POST) supplementation, consisting of 10 second rest intervals between six maximal 35m runs. RAST peak and mean values for power and velocity were determined via a Speed Test FIT CEFISE photocell system. Due to the data's distribution, individual appropriate within- and between-group nonparametric analyses were employed to assess PRE-to-POST supplementation mean and peak power (mP and pP) and velocity (mV and pV) at a significance level of p<.05. **RESULTS:** Neither power parameter (mP and pP) nor pV differed PRE-to-POST or between groups (p>.05). Nevertheless, nonparametric analyses revealed statistically significant mV differences (p=.025), whereby post-supplementation CRE was greater (23.7±1.64km/h) compared to both PRE in either group (CRE-PRE: 22.9±1.81km/h; PLA-PRE: 22.1±0.638km/h) and relative to PLA post-supplementation (22.2±1.15km/h). **CONCLUSION:** Although creatine supplementation did not meaningfully enhance RAST-associated power nor peak velocity, it did enhance mean velocity in youth soccer athletes. Notwithstanding our limited ability to claim a creatine-mediated performance advantage in this and similar demographics, future research should corroborate and further support these data by employing a standardized training protocol to eliminate additional extraneous variables.