

Impacts of Creatine Supplementation on Body Weight and Running Anaerobic Sprint Performance Test (RAST) Time Performance in Youth Soccer Players

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ABSTRACT

Creatine supplementation commonly increases intracellular water and/or lean mass-associated weight gain and concomitantly improved short-term, high-intensity effort performance such as repeated sprint ability. Research in this regard is both generally sparse but specifically more so in younger soccer athletes. **PURPOSE:** to determine the effect of 28 days of creatine monohydrate supplementation on body weight and running anaerobic sprint performance (RAST) time in youth soccer players. **METHODS:** Sixteen male youth soccer players were randomized in double-blinded 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 for the first 7 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 RASTs both prior to (PRE) and following (POST) supplementation, consisting of 10 second rest intervals between six maximal 35m runs. RAST time was determined via a Speed Test FIT CEFISE photocell system. Due to the nonparametric nature of the data, individual Friedman's ANOVA were employed to assess both within-group PRE-to-POST supplementation results (weight and 35m time within the same ordered RAST sprint), as well as any potential differences between the six maximal 35m runs at a significance level of $p < .05$. **RESULTS:** Analyses revealed a significant change in body weight ($p > .001$; Cohen's $D = .409$) in CRE that was not observed in PLA (1.09±0.314kg vs -0.08±0.259kg). Conversely, there were no significant within-group differences between the PRE-to-POST-supplementation sprint times ($p > .05$), but the sixth sprint was statistically slower than the first in either condition ($p < .05$). **CONCLUSION:** Although creatine supplementation did not meaningfully enhance RAST-associated sprint times in the present investigation, it did corroborate previous literature via increased body weight in youth soccer athletes. Notwithstanding our equivocal findings, future research should continue to elucidate the impact of this otherwise extensively studied ergogenic aid in this demographic by employing a standardized training protocol to further eliminate possible extraneous variables.