

## EFFECT OF ORAL CREATINE SUPPLEMENTATION ON HIGH-INTENSITY INTERMITTENT JUDO TEST

F. Sánchez<sup>1</sup>, C. Sotillo<sup>2</sup>, and N. Terrados<sup>3</sup>

<sup>1</sup>Department of Physiology, University of León, Spain; <sup>2</sup>Club of Judo Atlético of Madrid, Spain;

<sup>3</sup>Fundación Deportiva Municipal of Avilés and Dpt of Functional Biology, University of Oviedo, Spain

Judo competition is a high intensity sport, reaching relatively high lactate values, and with short and high-intensity intermittent movements. Taking into account this latter characteristic it might be thought that creatine (Cr) supplementation could improve performance in this sport. Although the effects of creatine supplementation have been demonstrated in different high-intensity intermittent exercises (Aaserud et al., 1998; Eijnde et al., 2001; Skare et al., 2001), there is not any research that studies the effect of this ergogenic aid on specific movements in judo. The purpose of this study was to examine the effects of short-term creatine monohydrate supplementation on a specific judo test.

Fifteen well trained judoists at national or international level (aged,  $23.8 \pm 3.5$  yrs; height,  $177.6 \pm 9.7$  cm; body mass,  $81.7 \pm 13.1$  kg; body fat,  $13.5 \pm 2.8$  %) were randomly assigned in a double-blind randomised placebo-controlled design, to a treatment (Cr,  $n=8$ ) or placebo group (P,  $n=7$ ). The Cr group received 5 g of monohydrate of creatine + 5 g maltodextrine, four times per day for six days. The P group received a placebo (maltodextrine) following the exact protocol as the Cr group. Before and after supplementation the subjects undertook an intermittent uchi komi test consisting of eight maximal bouts of fifteen movements, with a 12-s rest period between bouts. During the test, heart rate was continuously recorded and capillary blood samples for the determination of lactate concentrations were obtained 3 min after the uchi komi test from a hyperaemic earlobe.

During the test, Cr supplementation improved the average time, from  $156.9 \pm 25.8$  s to  $149.7 \pm 25.4$  s ( $p < 0.05$ ). In the P group, significant improvement was observed in the average time of the test, from  $138.3 \pm 23.1$  s to  $130.7 \pm 23.5$  s ( $p < 0.05$ ). Both groups showed the same performance improvement (see Figure 2). No significant differences were observed initially between the Cr and P group or within the Cr and P group before vs after supplementation, respectively. The body mass after the period of supplementation was modified neither in the Cr nor in the P group.

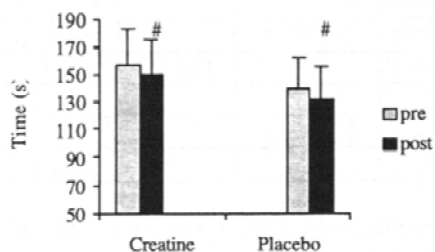


Figure 1. Performance times during the specific judo test before and after the Cr or P supplementation #  $P < 0.05$ : before is significantly different from after).

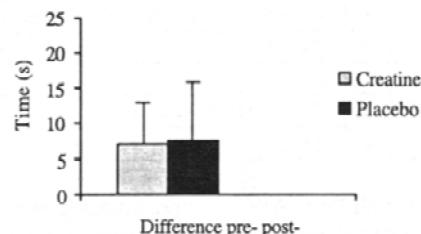


Figure 2. Differences between time of test performance before and after supplementation.

These data suggest that acute oral Cr supplementation during six days does not appear to enhance performance in maximal repeated specific movements of judo in well trained judoists. One might argue that the test setting used is insufficiently sensitive to detect small improvements in performance. Additional laboratory/field research is recommended to help resolve conflicting findings regarding the ergogenic efficacy of creatine supplementation on judo performance.

### REFERENCES

- Aaserud et al (1998). *Scand J Med Sci Sports* 8: 247-251  
 Eijnde et al (2001). *Int J Sports Med* 22: 76-80  
 Skare et al (2001). *Scand J Med Sci Sports* 11: 96-102