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An *Uchi-komi* with load, a physiological approach of a new special judo test proposal

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Introduction-

Judo is an intermittent sport, because during combat there are many breaks. Studies on the time structure of judo combat revealed that the periods of activity last 15–30s with approximately 10s breaks between them. These latter are progressively increased during the fight (Castarlenas et Planas, 1997, Sterkowicz et al 1998, Monteiro 2001).

Objective- The aim of this work was to elaborate and validate a specific test to evaluate the physical condition of judo players. Eleven elite and 12 sub-elite judo players (22±4 years-old) participated in our study. They were submitted to the test of Leger et al. (1984), the vertical Jump test and the Australian test.

In SJT an attacker must perform 6 series. The duration of the first series is 23s and increasing of 3s by series (in static work of arms), separated by a rest period of 4s, increasing 2s each series. During this test the subject performs two sequences of work:

(1) *Static work of arms*: during 3s the subject grips the sleeve and reverse of a *judogi* in a fixed bar;

(2) *Dynamic and explosive work (20s)*. While going down of the fixed bar, the judo player runs toward one of the two *ukes* (receivers), practise *Uchi-komi (Seoi-nage)* with load, and then move towards the other *uke* and practise *Sode-tsuri-komi-goshi*.

Results- The results showed significant correlations between muscular power and performance during the *Uchi-komi* test ($r = 0.52$, $p < 0.01$). Furthermore, there were also correlations between the number of *Uchi-komi* in two better series of specific judo test and the anaerobic power represented by the distance covered in 30s during the Australian shuttle test ($r = 0.86$, $p < 0.01$) and between the anaerobic capacity represented by the whole distance covered and the total

number of *Uchi-komi* achieved at the judo test ($r=0.88$, $p<0.01$). We recorded an average heart rate of 178 ± 5 beats.min⁻¹ with peaks of 191 ± 7 beats.min⁻¹ corresponding to 93% of the maximum heart rate.

Conclusion- The test reproduces the physiological characteristics of judo fight. It is a good indicator of the judoka's physical fitness and their cardiovascular adaptation in a physical effort.

Keywords: Judo; heart rate; Anaerobic power; Anaerobic capacity; Test

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