

## Differential Effect of Technique Majors on Isokinetic Strength in Youth Judoka Athletes

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**Abstract :** The purpose of this study was to assess the muscular strength performance of upper and lower extremity in isokinetic system for the youth judo players, and also to compare the strength difference between major techniques. Sixteen male and 20 female judo players (age:  $16.7 \pm 1.6$  years old, training age:  $4.5 \pm 0.8$  years) were served as the volunteers for this study. There were 21 players major hand techniques and 15 players major foot techniques. The Biodex S4 Pro was used to assess the strength performance of extensor and flexor of concentric action under the load condition of 30 degree/sec, 60 degree/sec, and 120 degree/sec for elbow joints and knee joints. The strength parameters were included the maximal torque, the normalized maximal torque, the average power, and the average maximal torque. A t test for independent groups was used to evaluate whether hand major and foot major differ significantly with an alpha level of .05. The result showed the maximal torque of left knee extensor in foot major players ( $243.5 \pm 36.3$  Nm) was higher significantly than hand major ( $210.7 \pm 21.0$  Nm) under the load of 30 degree/sec ( $p < .05$ ). There were no differences in upper extremity strength between the hand and foot techniques major in three loads ( $ps < .05$ ). It indicated that the judo player is required to develop the upper extremity strength overall to secure the execution of major techniques.

**Keywords :** knee, elbow, power, judo

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