

Effects of the Amount of Static Stretching on the Knee Isokinetic Muscle Strength

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Abstract : The purpose of this study was to investigate the effect of the amount of acutely static stretching on muscular strength and power. There were 15 males, and 7 females recruited voluntarily as the participants in the study. The mean age, body height, and weight of participants were 23.4 ± 2.8 years old, 171.0 ± 7.2 cm, and 65.7 ± 8.7 kg, respectively. Participants were repeated to stretch hamstring muscles 2 or 6 30-s bouts randomly on a separate day spaced 5-7 days apart in a passive, static, sit-and-reach stretching exercise. Before and after acutely static stretching, the Biodex System 4 Pro was used to acquire the peak torque, power, total work, and range of motion for right knee under the loading of 180 deg/s. The 2 (test-retest) \times 2 (number of stretches) repeated measures two-way analysis of variance were used to compare the parameters of muscular strength/power ($\alpha = .05$). The results showed that the peak torque, power, and total work increased significantly after acutely passive static stretching ($ps < .05$) in flexor and extensor of knee. But there were no significant differences found between the 2 and 6 30-s bouts hamstring muscles stretching ($ps > .05$). It indicated that the performance of muscular strength and power in knee flexion and extension do not inhibit following the increase of amount of stretching.

Keywords : knee, power, flexibility, strength

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