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KEY WORDS : LOW BACK PAIN/ ISOKINETIC/ TRUNK MUSCLE  
PAGAMAS PIRIYAPRASARTH : COMPARISON OF CONCENTRIC  
ISOKINETIC OF TRUNK MUSCLES PERFORMANCE BETWEEN FEMALE  
SUBJECTS WITH AND WITHOUT LOW BACK PAIN. THESIS ADVISORS :  
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This study aimed to compare the concentric isokinetic of trunk muscle performance between subjects with and without low back pain. The subjects in this study were sedentary females aged between 30 and 50 years. There were 20 subjects in each group which were similar in age, weight and height. All subjects were tested for trunk muscle performance isokinetically by using the Biodex II dynamometer in a sitting position. Three testing speeds of trunk movement were 60, 90 and 120°/second. The data were collected from four maximum reciprocals of trunk flexion and extension. The investigated parameters were; peak torque, total work, maximum repetition work, work first third and work last third, average power, angle of peak torque and E/F ratio. All data were corrected for gravity values. The differences of data between with and without low back pain groups were analyzed by using unpaired t-test.

The results demonstrated that muscle performance of subjects with low back pain were less than those of subjects without low back pain. There were significant differences ( $p < 0.05$ ) in trunk flexors in the following parameters; peak torque at 60 and 90°/second, average power at 60°/second and parameters of work except work last third at 60 and 90°/second. There were significant differences in peak torque, average power and total work of trunk extensors at 90°/second between subjects with and without low back pain. No significant differences were found in E/F ratio, angle of peak torque and work last third for both muscle groups between subjects with and without low back pain at all testing velocities. While there was no significant difference in any parameter at 120°/second between subjects with and without low back pain.

In conclusion, the results of this study showed that the differences of trunk flexors performance between female subjects with and without low back pain were found at velocity of 60°/second. While those differences of trunk extensors were found at 90°/second. These findings can assist further study on the effects of gender and age on concentric isokinetic performance of trunk muscles. They can also assist studies of trunk muscle endurance and re-evaluation of muscle performance in low back pain patients by isokinetic testing.