Effects of Hip Angles in Sagittal Plane on the Hip Rotator Force in Normal Subjects

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Purpose: The purpose of this study was examine the effects of hip joint angles in sagittal plane on the hip external and internal rotator force.

Methods: Thirty-two healthy volunteers (male: sixteen people, female: sixteen people, mean age: 21.9 ± 3.8 years, range: 18-33 years) participated in this study. There were 4 condition that measured the hip joint angles in that plane extension 10 degree, flexion 0 degree, flexion 45 degree and flexion 90 degree. The maximum isometric external and internal rotational force were measured with hip joint abduction 0 degree, rotation 0 degree and knee joint flexion 90 degree.

Results: External rotator force at extension 10 degree was significantly lower than at flexion 45 degree in female, in addition to Flexion 0 degree was significantly lower than flexion 45 degree and 90 degree in both male and female. Those two sex have internal rotation force at extension 10 degree and flexion 0 degree were significantly lower than at flexion 45 degree and 90 degree in common.

Conclusion: The effects of hip joint angles in sagittal plane on the hip external rotator force was small, on the other hand internal rotation force increased as hip joint angle of flexion.