

Correlation between Dynamic Knee Valgus with Isometric Hip Abductors Strength during Single-Leg Landing

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Abstract : The knee joint complex is one of the most commonly injured areas of the body in athletes. Excessive frontal plane knee excursion is considered a risk factor for multiple knee pathologies such as anterior cruciate ligament and patellofemoral joint injuries, however, little is known about the biomechanical factors that contribute to this loading pattern. Objectives: The purpose of this study was to investigate if there is a relationship between hip abductors isometric strength and the value of FPPA during single leg landing tasks in normal male subjects. Methods: One hundred (male) subjects free from lower extremity injuries for at least six months ago participated in this study. Their mean age was (23.25 ± 2.88) years, mean weight was (74.76 ± 13.54) (Kg), mean height was (174.23 ± 6.56) (Cm). The knee frontal plane projection angle was measured by digital video camera using single leg landing task. Hip abductors isometric strength were assessed by portable hand-held dynamometer. Muscle strength had been normalized to the body weight to obtain more accurate measurements. Results: The results demonstrated that there was no significant relationship between hip abductors isometric strength and the value of FPPA during single leg landing tasks in normal male subjects. Conclusion: It can be concluded that there is no relationship between hip abductors isometric strength and the value of FPPA during functional activities in normal male subjects.

Keywords : 2-dimensional motion analysis, hip strength, kinematics, knee injuries

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