

Can Functional Performance Tests for Core Muscular Endurance Identify Female Collegiate Level Athletes at Risk for Injury: A Reliability and Epidemiological Study

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Abstract

Background: Functional performance tests (FPT) are used to identify athletes at risk for injury.

Purpose: Determine the ability of the unilateral hip bridge endurance test (UHBET) and the prone plank endurance test (PPET) to discriminate injury risk in female collegiate-level volleyball players. Report intra and interrater reliability for each FPT.

Methods: Reliability for the UHBET was established in homo- and heterogenous samples of female collegiate athletes. A digital inclinometer affixed to the athlete's pelvis aided pelvic neutrality monitoring during testing. The reliability of the PPET using the prone plank measuring device (PPMD) was established using 13 healthy, active physical therapy students. Preseason UHBET and PPET scores were collected from 192 female collegiate athletes representing 9 sports from 5 institutions. Athletic trainers reported incidences of non-contact time-loss injury during the course of a single season.

Results: Excellent (> 90%) UHBET intra and interrater reliability was observed for the left and right sides and the composite score for both the homogenous and heterogeneous cohorts. Excellent (> 90%) intra and interrater reliability were found for the PPET using the PPMD. There was no association between UHBET or PPET scores and noncontact time-loss lower quadrant injury.

Conclusion: This study utilized instrumented devices to monitor pelvic neutrality with excellent intra and interrater for both FPT. Using an instrumented device to monitor pelvic neutrality can assist clinicians by reducing the uncertainty associated with test termination. These tests were not effective at identifying athletes at risk for injury in this heterogeneous cohort.

Key Words: *Functional performance testing, Sports performance, Physical Therapy*