Examination of the Relationship between Passive and Dynamic Measures of Lower Extremity Stability in Division III Athletes
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**Context:** Within the body of literature surrounding the measurement of “dynamic” and “passive” joint stability, little research exists which compare the two as to their usefulness in screening and injury prevention. Independently, both have been demonstrated to be useful in the assessment of pre-injury risk identification, but research on their relationship to one another and their effectiveness as standardized assessment tools performed during pre-participation examination (PPE) of Division III athletes is limited. **Objective:** Passive joint stability is generally evaluated during the orthopedic screening portion of the PPE. Clinical tests are utilized to examine ligamentous laxity and make determinations of “passive” joint stability. A functional movement screen (FMS) assesses an individual's functional and dynamic capacity to perform systematic movement patterns. The FMS performed at the PPE creates a functional movement baseline, allowing for the observational ranking of an individual’s capacity and stability during dynamic movement. Therefore, the purpose of this study was to examine the relationship of traditional “passive” measure of joint stability with “dynamic” measures of stability with movements involving the lower extremities (LE) in Division III student-athletes. **Design:** Retrospective cohort study. **Setting:** All data was collected in a University clinical setting following the annual, routine, pre-season assessment processes for athletics participation. **Patients or other participants:** De-identified data was collected retrospectively from chart review. **Data collection and analysis:** 308 student-athletes completed the PPE, and the evaluation data included in this review. Results of LE joint mobility assessments and special tests for ligamentous laxity were recorded. Scores for individual 3 LE movement screening patterns (Deep Squat, Hurdle Step, In-Line Lunge) performed during FMS were recorded, and a total score calculated. Pearson correlation coefficients were calculated, and nominal regression analysis utilized to examine the strength of relationship between variables, and to determine the ability of passive measures of LE joint stability to predict dynamic stability during LE movement patterns. **Results:** Significant relationships were found between performance during both a Deep Squat pattern and In-Line lunge and passive measures of medial-lateral knee stability (Valgus stress $p<0.018$ and patellar apprehension $p<0.010$). A significant relationship was also found between passive measures of anterior knee stability with a Lachman’s Test and dynamic performance during a Hurdle Step movement pattern ($p<0.030$). **Conclusions:** There appears to be a significant relationship between passive measures of anterior-posterior and medial-lateral stability of the knee, and ability to perform certain LE-biased movement patterns during an FMS screen. Future research should be focused on the improved utility of FMS screening and the utilization of “dynamic” stability measures during PPE processes. **Word Count:** 416