

## **Core Strength as a Predictor of Performance During Three Functional Movement Screens: A Preliminary Analysis**

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Current measures of core stability utilized by clinicians and researchers suffer from a number of shortcomings, such as: poor reliability, non-functionality, and incomplete in the assessment of core stability. Three functional movement screens appear, at face-value, to be dependent on the ability to activate and control core musculature. As a whole, these three screens may present a viable alternative to current measures of core stability. **PURPOSE:** To determine whether core strength, a component of core stability, is a significant predictor of performance on these three screens **METHODS:** 31 subjects (Age =  $22 \pm 3.1$  yrs, Height =  $137.5 \pm 70.1$  cm, Weight =  $68.7 \pm 10.4$  kg) completed a deep squat (DS), trunk stability push-up (TSP), and rotary stability (RS) screen, each being scored on a scale of 1-3. Strength was assessed for trunk flexion/extension, trunk rotation, hip abduction/adduction, knee flexion/extension, and pectoralis major, with the latter two included due to their potential influence during the DS and TSP, respectively. Scores on the three screens were summed to form a composite score (COMP). Two ordinal logistic regression equations were calculated with COMP as the outcome variable. After predictors were eliminated to avoid multicollinearity, the first equation included both core strength variables (trunk rotation, and hip abduction/adduction) and accessory strength variables (knee flexion and pectoralis major) as predictors. To compare the relative amount of variance explained without the accessory strength variables, the second equation only contained core strength variables. **RESULTS:** The first model was insignificant in predicting COMP ( $p=.053$ ); however, the model fit was good (Pearson's Chi-Square= $118.80$ ,  $p=.385$ ; Nagelkerke's R-Squared= $.311$ ). The second model was significant in predicting COMP ( $p=.017$ ). The model fit was good (Pearson's Chi Square= $126.96$ ,  $p=.249$ ) and the relative amount of variance was similar to the full model (Nagelkerke's R-Squared= $.295$ ). **CONCLUSION:** Overall performance on the three core stability screens is predicted by core strength, even when accounting for other strength variables. While more investigation is needed, the DS, TSP, and RS, collectively, appear to be a good assessment of overall core strength.

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