

## Ability of the Functional Movement Screen (FMS) to Predict Injury in NCAA Division II Track and Field Athletes and the Association between the FMS, Eccentric Hip Abduction Strength, and Injury Risk

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### ABSTRACT

A high injury rate is present in the collegiate cross country and track population. Currently no gold standard measurement exists to predict future injury. The FMS and eccentric hip strength are two potential measures to predict future injury risk. **PURPOSE:** To establish if the 100 point FMS and 21 point FMS scores are correlated with injury risk among NCAA Division II cross country and track and field athletes, as well as determine if hip strength is associated with injury risk or FMS score. **METHODS:** This investigation was an exploratory prospective cohort study of eight Division II cross country runners and seven Division II track and field athletes. Two researchers concurrently administered the FMS on the 21 point scale prior to the athletes' respective seasons. The 100 point FMS scale was rated by two physical therapy students and two licensed physical therapists using video recording. Eccentric hip strength was assessed using a handheld dynamometer. Injury incidence was recorded throughout the competitive season. **RESULTS:** A strong positive correlation was found between the 100 point FMS score and injury ( $r = 0.871$ ), as well as a moderate positive correlation between the 21 point FMS score and injury ( $r = 0.611$ ). A strong correlation was found between higher 3 test subset scores and incidence of injury ( $r = 0.754$ ). Finally, a strong correlation was found between the 3 test subset scores and eccentric hip strength in the track and field group as well as the cross country group. **CONCLUSION:** A positive association was found between higher 100 point FMS and 21 point FMS scores and increased risk of injury. Also, an association was found between increased hip strength and higher scores on a 3 test subset of the FMS. No conclusive findings can be made associating increased hip strength and higher injury risk. However, the current study suggests that higher FMS scores may indicate higher injury risk in this population.