The Impact of Injury History on Functional Movement Screen and Y Balance Test Performance Outcomes

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Context: The Functional Movement Screen (FMS) and Y Balance Test (YBT) are popular injury prediction screens, but data are limited for use in athletes with injury history. **Objective:** Evaluate impact of injury history on FMS and YBT scores. **Design:** Retrospective cohort. **Setting:** Athletic training facility. **Patients or Other Participants:** 200 Division I athletes [92♀, 108♂, mean age (SD) 20 (1.5) years, BMI (SD) 25.07 (4.50) kg/m$^2$] were screened for study participation (9♂, 3♀ basketball, 4♀ cheer/dance, 73♂ football, 18♀ cross country, 3♀ golf, 29♀ soccer, 18♀ swimming/diving, 5♂, 5♀ tennis, 8♂, 4♀ track/field, 8♀ volleyball athletes). Participants excluded when not in correct attire or currently injured. **Interventions:** Self-reported questionnaire identified musculoskeletal injury/surgery history. Independent t-tests (SPSS 19) calculated association between injury/surgery history and FMS/YBT overall and component scores (Bonferroni correction p < 0.025).

**Main Outcome Measures:** Eligible participants completed FMS/ YBT. The FMS assessed performance of fundamental movements (squat, lunge, hurdle, straight leg raise, shoulder mobility, trunk stability, rotary stability). The YBT assessed dynamic single leg balance while reaching (anterior, posteromedial, and posterolateral). **Results:** 157 FMS (mean14.00 ± 2.00) and 189 YBT (normalized mean 101.00 ±1.00) were collected. Lower overall FMS scores were apparent with history of hip (p = 0.020; injured: 12.94 ± 2.98; uninjured: 14.40 ± 2.27) and hand (p = 0.003; injured: 12.33 ± 2.87; uninjured: 14.41 ± 2.28) injury, but not surgery. Overall YBT scores weren't associated with injury/surgery. Participants with injury/surgery history had lower FMS component performance: hip injury; deep squat (p = 0.018; injured: 1.38 ± 0.89; uninjured: 1.79 ± 0.64), hip surgery; right (p = 0.002; injured: 2.03 ± 0.41) and left (p = 0.002; injured: 1.33 ± 0.57; uninjured: 2.03 ± 0.37) hurdle, right lunge (p = 0.025; injured: 1.33 ± 0.57; uninjured: 2.11 ± 0.59) and right straight leg raise (p < 0.001; injured: 2.00 ± 0.00; uninjured: 2.42 ± 0.70), back/trunk injury; right straight leg raise (p = 0.021; injured: 2.14 ± 0.88; uninjured: 2.47 ± 0.64), shoulder injury; left shoulder (p = 0.002; injured: 1.86 ± 1.04; uninjured: 2.41 ± 0.79), shoulder surgery; left shoulder (p < 0.001; injured: 0.80 ± 0.84; uninjured: 2.36 ± 0.82), hand injury; left shoulder (p = 0.018; injured: 2.42 ± 0.90; uninjured: 2.64 ± 0.70) and higher YBT component performance: back/trunk injury; left posteromedial (p = 0.021; injured: 117.00 ± 8.00 uninjured: 113.00 ± 10.00). **Conclusions:** Injury/surgery history didn't impact overall YBT performance. Injury/surgery history indicated differences in some FMS/YBT components, but not necessarily overall score. Therefore, it may be appropriate to evaluate FMS/YBT component and overall scores in athletes with previous injury/surgery.

**Word Count:** 450