Star Excursion Balance Test Performance Varies by Sport in Healthy Division I Collegiate Athletes.

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Abstract

STUDY DESIGN: Cross-sectional.

OBJECTIVES: To describe performance and asymmetry on the Star Excursion Balance Test (SEBT) by sex and sport, and to determine if differences exist within a collegiate athlete population.

BACKGROUND: Performance on the SEBT may differ between sexes and levels of competition, though the results of previous studies have been inconsistent. Investigation of performance and asymmetry differences between sports is limited. Sex- and sport-specific reference values likely need to be determined to best assess SEBT performance.

METHODS: Performance on the SEBT was retrospectively reviewed in 393 healthy National Collegiate Athletic Association Division I collegiate athletes from 8 sports. Means, standard deviations, and 95% confidence intervals were calculated for all variables. Normalized reach distance (percent limb length) and asymmetry between limbs were compared for the anterior (ANT), posterolateral (PL), and posteromedial (PM) directions and for the composite (COMP) score using a 2-way analysis of variance (ANOVA) of sex by sport, and a 1-way ANOVA to separately compare sports within each sex.

RESULTS: Average normalized reach distance ranged from 62% to 69%, 84% to 97%, and 99% to 113% in the ANT, PL, and PM directions, respectively, and from 82% to 92% in the COMP score. Normalized asymmetry ranged from 3% to 4%, 5% to 8%, and 5% to 6% in the ANT, PL, and PM directions, respectively. A significant sex-by-sport interaction ($P = .039$) was observed in the ANT direction, with a sex effect for soccer players ($P<.001$; men less than women). Significant differences were observed in the PL and PM directions and in the COMP score among women's teams, with women's ice hockey players reaching the farthest (COMP, 90.0%). Among men's teams, significant differences were observed in all directions and in the COMP score. Men's ice hockey players (COMP, 91.9%) and wrestlers achieved the farthest distances (COMP, 88.8%).

CONCLUSION: Performance on the SEBT varies by team, with a difference between sexes also present for soccer. Performance on the SEBT and potential injury risk should be interpreted within the context of the athlete's sport.

KEYWORDS: dynamic balance; neuromuscular control; postural control; reach distance; sport-specific performance