

THE MODIFIED STAR EXCURSION BALANCE AND Y-BALANCE TEST RESULTS DIFFER WHEN ASSESSING PHYSICALLY ACTIVE HEALTHY ADOLESCENT FEMALES

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ABSTRACT

Background: The modified Star Excursion Balance Test (mSEBT) and Y-Balance Test (YBT) are two common methods for clinical assessment of dynamic balance. Clinicians often use only one of these test methods and one outcome factor when screening for lower extremity injury risk. Dynamic balance scores are known to vary by age, sex and sport. The physically active adolescent female is at high risk for sustaining lower extremity injuries, specifically to the anterior cruciate ligament (ACL). Thus clarity regarding the use of dynamic balance testing results in adolescent females is important. To date, no studies have directly compared the various outcome factors between these two dynamic balance tests for this population.

Purpose: To determine if there was an association between the mSEBT and YBT scores for measured reach distances, calculated composite score and side-to-side limb asymmetry in the ANT direction in physically active healthy adolescent females.

Study Design: Cross-sectional study.

Methods: Twenty-five healthy, physically active female adolescents (mean age, 14.0 ± 1.3 years) participated. Reach distances, a composite score and side-to-side limb asymmetry for the mSEBT and YBT, for each limb, were compared and examined for correlation.

Results: There were significant differences and moderate to excellent relationships between the measured reach directions between the mSEBT and the YBT. Injury risk classification, based on limb asymmetry in the anterior reach direction, differed between the tests. However, the calculated composite scores from the two tests did not differ.

Conclusions: Performance scores on a particular reach direction should not be used interchangeably between the mSEBT and YBT in physically active adolescent females, and should not be compared to previously reported values for other populations.

Level of Evidence: Level 3.

Key Words: dynamic balance; lower extremity; movement system; screening tool.

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