ORIGINAL RESEARCH

INTERRATER AND TEST-RETEST RELIABILITY OF THE Y BALANCE TEST IN HEALTHY, EARLY ADOLESCENT FEMALE ATHLETES

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ABSTRACT

Background: Adolescence is the stage of development marked by peak rates of skeletal growth resulting in impaired dynamic postural control and increased injury risk, especially in female athletes. Reliable tests of dynamic postural control are needed to help identify athletes with balance deficits and assess changes in limb function after injury.

Purpose: To estimate the interrater and test-retest (intrarater) reliability of the Y-Balance Test in a group of early adolescent females over a one-month period when administered by novice raters.

Methods: Twenty-five early adolescent females (mean age 12.7 ± 0.6 years) participated. Two physical therapy student raters, randomly selected from a pool of five, simultaneously assessed each subject's performance on the Y-Balance Test and were blinded to each other's results. Twenty-one subjects returned for a second session (mean 32.3 ± 9.6 days) and were assessed by the same two raters, blinded to previous measurements. Maximum and normalized reach distances and composite scores of the right and left limbs were collected. Intraclass correlation coefficients (ICC) were calculated for between rater and between session agreement. Measurement error and minimal detectable change values were calculated for clinical interpretation.

Results: Interrater reliability was excellent for all reach directions and composite scores of the right limb (ICC 0.973-0.998) and left limb (ICC 0.960-0.999) except for the day 1 left anterior reach which was good (ICC 0.811). Test-retest reliability were moderate to excellent for the right limb (ICC 0.681- 0.908) and moderate to good for left limb (ICC 0.714 - 0.811). Minimal detectable change values for the right and left limbs ranged between 2.02-3.62% and 2.77-3.63%, respectively.

Conclusions: The Y-Balance Test is a reliable tool to assess dynamic balance in early adolescent females and may be utilized in a clinical setting to monitor function over a one-month time interval. Between rater differences were mainly attributed to disparities in subjective test requirements and not quantitative measures of reach distance.

Level of Evidence: Level 2

Key Terms: adolescent female, dynamic balance, movement system, reliability, Y-Balance Test

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