ABSTRACT

Purpose/Background: There are a few studies investigating the reproducibility of the Upper Quarter Y Balance Test (YBT-UQ) in adults. However, no study has determined test-retest reliability and the minimal detectable change of the YBT-UQ in adolescents from different age cohorts. The aim of the present study was to establish test-retest reliability and minimal detectable change of the YBT-UQ in a sample of healthy adolescents.

Methods: In a school setting, 111 students (59 female, 52 male) aged 12-17 years performed the YBT-UQ twice, separated by one week. Normalized maximal reach distances (% arm length) for all three directions (i.e., medial, inferolateral, superolateral) and the composite score were used as outcome measures. Intra-class correlation coefficient (ICC3,1) and standard error of measurement (SEM) were calculated to assess both relative and absolute test-retest reliability. In addition, the minimal detectable change (MDC95%), an index that is defined as the minimal amount of change in performance that falls outside the measurement error or performance changes due to variability was determined.

Results: Irrespective of age cohort, reach arm, and reach direction, the measure of relative reliability ranged from "moderate-to-good" to "excellent" ICC values and the proxy of absolute reliability was rather small (i.e., SEM ≤ 7.6%). The MDC95% needed to identify relevant effects in repeated measurements of the YBT-UQ performance ranged between 4.8% and 21.1%, depending on age, reach arm, and reach direction.

Conclusions: The detected values imply that the YBT-UQ is a reliable field test that can be used to detect changes of upper quarter mobility/stability in healthy adolescents aged 12-17 years.

Level of Evidence: 2b

Key Words: adolescent, motor control, movement system, practical relevance, reproducibility, school setting, upper quarter mobility/stability

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