

# ORIGINAL RESEARCH

## THE DYNAMIC LEAP AND BALANCE TEST (DLBT): A TEST-RETEST RELIABILITY STUDY

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### ABSTRACT

**Background:** There is a need for new clinical assessment tools to test dynamic balance during typical functional movements. Common methods for assessing dynamic balance, such as the Star Excursion Balance Test, which requires controlled movement of body segments over an unchanged base of support, may not be an adequate measure for testing typical functional movements that involve controlled movement of body segments along with a change in base of support.

**Purpose/hypothesis:** The purpose of this study was to determine the reliability of the Dynamic Leap and Balance Test (DLBT) by assessing its test-retest reliability. It was hypothesized that there would be no statistically significant differences between testing days in time taken to complete the test.

**Study Design:** Reliability study

**Methods:** Thirty healthy college aged individuals participated in this study. Participants performed a series of leaps in a prescribed sequence, unique to the DLBT test. Time required by the participants to complete the 20-leap task was the dependent variable. Subjects leaped back and forth from peripheral to central targets alternating weight bearing from one leg to the other. Participants landed on the central target with the tested limb and were required to stabilize for two seconds before leaping to the next target. Stability was based upon qualitative measures similar to Balance Error Scoring System. Each assessment was comprised of three trials and performed on two days with a separation of at least six days.

**Results:** Two-way mixed ANOVA was used to analyze the differences in time to complete the sequence between the three trial averages of the two testing sessions. Intraclass Correlation Coefficient (ICC<sub>3,1</sub>) was used to establish between session test-retest reliability of the test trial averages. Significance was set *a priori* at  $p \leq 0.05$ . No significant differences ( $p > 0.05$ ) were detected between the two testing sessions. The ICC was 0.93 with a 95% confidence interval from 0.84 to 0.96.

**Conclusion:** This test is a cost-effective, easy to administer and clinically relevant novel measure for assessing dynamic balance that has excellent test-retest reliability.

**Clinical relevance:** As a new measure of dynamic balance, the DLBT has the potential to be a cost-effective, challenging and functional tool for clinicians.

**Keywords:** clinical test, functional performance, postural control.

**Level of Evidence:** 2b

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