
ORIGINAL RESEARCH

RELATIONSHIPS BETWEEN FUNCTIONAL MOVEMENT TESTS AND PERFORMANCE TESTS IN YOUNG ELITE MALE BASKETBALL PLAYERS

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ABSTRACT

Purpose/Background: Sprinting and jumping are two common and important components of high-level sport performance. The weight-bearing dorsiflexion test (WB-DF) and Star Excursion Balance Test (SEBT) are tools developed to identify athletes at risk for lower extremity injury and may be related to running and jumping performance among athletes. The purposes of the present study were: 1) to identify any relationships between functional movement tests (WB-DF and SEBT) and performance tests (jumping, sprinting and changing direction); 2) to examine any relationships between asymmetries in functional movements and performance tests.

Study Design: Descriptive cohort study.

Methods: Fifteen elite male basketball players (age: 15.4 ± 0.9 years) were assessed during a three-week period to determine the reliability of functional screening tools and performance tests and to examine the relationships between these tests. Relative (intraclass correlation coefficient) and absolute (coefficient of variation) reliability were used to assess the reproducibility of the tests.

Results: Significant correlations were detected between certain functional movement tests and performance tests. Both left and right excursion composite scores related to slower performance times in sprint testing, demonstrating that greater dynamic reach relates to decreased quickness and acceleration among these elite basketball athletes. The various relationships between dynamic functional movement testing, speed, and jump performance provide guidance for the strength and conditioning professional when conducting and evaluating data in an effort to improve performance and reduce risk of injury.

Conclusions: The results of the present study suggest that these functional and performance tests do not measure the same components of human movement, and could be paired as outcome measures for the clinical and sport assessment of lower extremity function.

Level of Evidence: 2b

Keywords: Vertical jump, sprinting speed, sports performance, functional testing

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Conflict of interest

Dr. Marín declared a potential conflict of interest as he has patent pending for LegMotion and OctoBalance systems.

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