

ORIGINAL RESEARCH

THE RELATIONSHIP BETWEEN TRUNK ENDURANCE PLANK TESTS AND ATHLETIC PERFORMANCE TESTS IN ADOLESCENT SOCCER PLAYERS

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ABSTRACT

Background: Although it is believed that trunk function is important for athletic performance, few researchers have demonstrated a significant relationship between the trunk function and athletic performance. Recently, the prone plank and side plank tests have been used to assess trunk function.

Purpose: The purpose of this study was to investigate the relationships between trunk endurance plank tests and athletic performance tests, including whether there is a relationship between long distance running and trunk endurance plank tests in adolescent male soccer players.

Study design: Cross sectional study design.

Methods: Fifty-five adolescent male soccer players performed prone and side plank tests and seven performance tests: the Cooper test, the Yo-Yo intermittent recovery test, the step 50 agility test, a 30-m sprint test, a vertical countermovement jump, a standing five-step jump, and a rebound jump. The relationships between each individual plank test, the combined score of both plank tests, and performance tests were analyzed using the Pearson correlation coefficient.

Results: The combined score of plank tests was highly correlated with the Yo-Yo intermittent recovery test ($r = 0.710$, $p < 0.001$), and was moderately correlated with the Cooper test ($r = 0.567$, $p < 0.001$). Poor correlation was observed between the prone plank test and step 50 agility test ($r = -0.436$, $p = 0.001$) and no significant correlations were observed between plank tests and jump performance tests.

Conclusions: The results suggest that trunk endurance plank tests are positively correlated with the Yo-Yo intermittent recovery test, the Cooper test, and the step 50 agility test.

Level of Evidence: Level 2

Keywords: Agility, core strength, jump, long distance running, prone plank

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