

RELATIONSHIP BETWEEN CORE ENDURANCE AND THE LANDING ERROR SCORING SYSTEM IN YOUTH SOCCER PLAYERS

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INTRODUCTION

- Lower extremity injuries in youth soccer players have been related to poor landing mechanics.
- Dynamic core stability is needed to control lower extremity motion and decreases risk if lower extremity injury.
- Understanding this relationship using screening methods that are readily accessible to clinicians is necessary as participation and injuries in youth soccer programs continues to rise.

PURPOSE

To investigate the relationship between core endurance and the Landing Error Scoring System (LESS) in youth Soccer Players.

METHODS

PARTICIPANTS

- One Hundred and ninety-two youth soccer players (M 108, F 84, 11.9±1.0yrs, 153.2±11.1cm, 43.2±8.8kg) participated.

JUMP LANDING (JL)

- Participants jumped from a 30-cm high box, to a marker set 50% of their height away from the box, and rebounded for maximum vertical height
- 2D kinematics were collected during three trials of a 30cm drop jump landing and were scored using automated LESS scoring system (PhysiMax Technologies Ltd. Tel Aviv, Israel).



Figure 1. Jump landing task

METHODS

ASSESSMENT OF CORE ENDURANCE

- Core Endurance was assessed using a validated sport-specific endurance plank test, with eight stages, until exhaustion. (Tong, 2013)

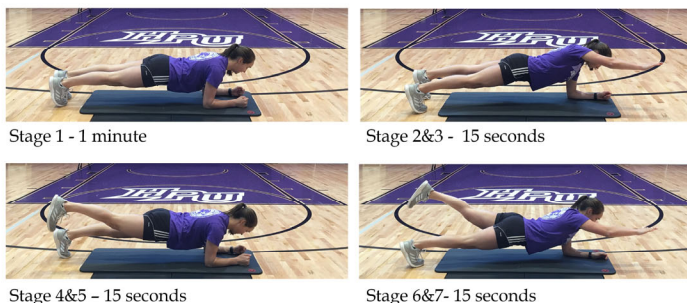


Figure 2. Plank Progression Stages

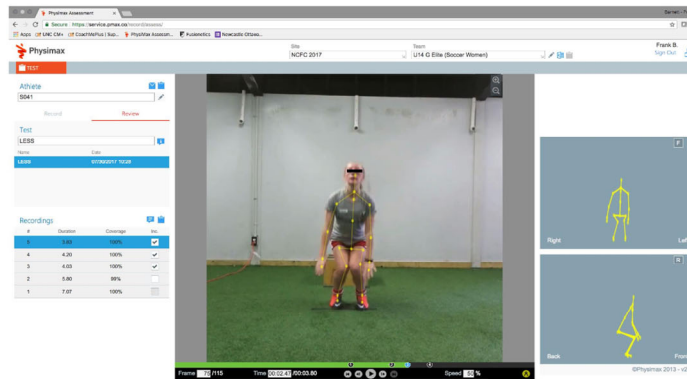


Figure 3. PhysiMax LESS Scoring System

DATA REDUCTION & ANALYSES

- Separate Pearson correlations (r) examined the relationship between time to exhaustion during the plank test and total LESS scores for males and females.

RESULTS

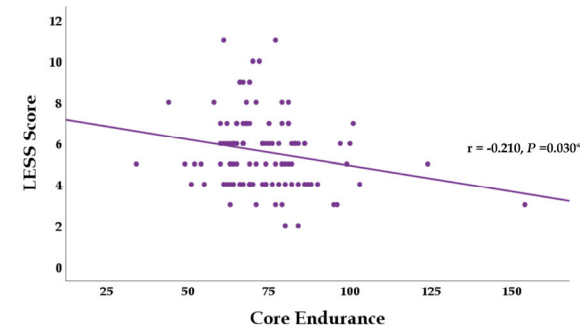


Figure 4. Relationship between Core Endurance and LESS Score in Male Athletes

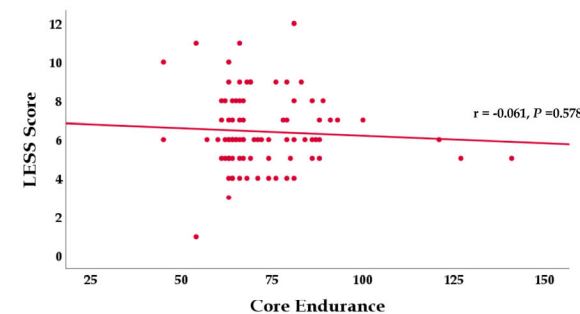


Figure 5. Relationship between Core Endurance and LESS Score in Female Athletes

SUMMARY AND CONCLUSIONS

- Decreased core endurance was negatively correlated to increased LESS Scores in male, but not in female, youth soccer players.
- Prevention programs should incorporate core endurance exercises to improve at-risk landing patterns in youth male athletes.
- More work is needed to identify modifiable factors that increase risk of injury in female athletes.