

COMPARISON OF LATERAL ABDOMINAL MUSCLE THICKNESS IN YOUNG MALE SOCCER PLAYERS WITH AND WITHOUT LOW BACK PAIN

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ABSTRACT

Background: While researchers have investigated low back pain (LBP) and its association with the thickness of trunk muscles in the general population, few articles have studied this relationship in athletes.

Hypothesis/Purpose: To compare the lateral abdominal muscle thickness and other possible functional risk factors in young soccer players with and without LBP.

Study Design: Cross-sectional study

Methods: Thirty young male soccer players, with and without LBP, from the Premier League participated in this study. The thicknesses of the external oblique, internal oblique and transversus abdominis muscles were measured via musculoskeletal ultrasound imaging, bilaterally. In addition, hamstring flexibility, lumbar spine flexion range of motion, and trunk extensor muscle endurance were measured and were compared in those with and without the history of LBP.

Results: The mean age of the subjects was 17.4 (+/- 1.1) years. There was no statistically significant difference between groups ($p > 0.05$). Subjects with a history of LBP during their lifetime of sports participation (sports life), within the prior year, and within the prior month had statistically significant lower external oblique muscle thickness bilaterally ($p < 0.05$). Subjects with a sports life history of LBP had lower internal oblique muscle thickness on both sides ($p < 0.05$). Moreover, those with a sports life history of LBP had significantly less hamstring flexibility than the non-LBP group on the dominant limb ($p < 0.05$).

Conclusion: In this sample group of young soccer players, abdominal muscle ultrasound measurements were different between players with and without LBP. Further longitudinal studies are needed to evaluate the role of these muscles as LBP risk factor for soccer players.

Levels of Evidence: 3a

Key Words: External oblique; Internal oblique; Low back pain; Soccer; Transversus abdominis; youth athletes

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Acknowledgment: This study was supported by Tehran University of Medical Sciences.

Conflicts of interest: The authors have no conflicts of interest to declare.

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