Abstract

High Level of Sit-and-Reach Flexibility Enhances Neuromuscular Explosiveness Performance in Young Elite Soccer Players †

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† Presented at the 9th Greek Conference of Biochemistry and Physiology of Exercise, Thessaloniki, Greece, 18–20 October 2019.
Published: 3 September 2019

Abstract: Aim: Increased hamstring and lower back flexibility may contribute to preventing muscle injuries. However, inconsistencies exist on whether dynamic or static stretching exercises should be routinely used prior to and after training sessions/games to improve performance and ameliorate muscle soreness. No studies so far evaluated whether “poor” or “good” levels of flexibility may influence fitness parameters in elite young soccer players. The purpose, therefore, of the present study was to examine the effect of lower back and hamstring flexibility on several fitness parameters in elite young soccer players. Material & Method: One hundred three young elite soccer players (U15, U17, U19 National team members) were initially evaluated, but only 81 met the cut-off criteria and were included in the statistical analysis. These 81 players were separated into two groups based on their sit-and-reach flexibility score. The players whose score was less than 22 cm were included in the low-flexibility (L-Flex) group (n = 52), and those whose reach score was above 28 cm were included in the high-flexibility (H-Flex) group (n = 29). A comparison of several fitness parameters between groups was performed using unpaired t test. Results: Sit-and-reach flexibility was significantly higher (p < 0.001) in H-Flex (31.5 ± 3 cm) compared with the L-Flex group (18 ± 5 cm). No differences between groups were observed in age, height, body weight, % body fat, maximum speeds (5–30 m), isokinetic parameters, maximum aerobic speed and VO2max (p > 0.05). Countermovement jump (CMJ, p = 0.023) and CMJ with arm-swing (p = 0.005) were significantly better in the H-Flex compared with the L-Flex group. No correlation was observed between mean flexibility score and any other evaluated fitness parameters (p > 0.05). Conclusions: High level of sit-and-reach flexibility may contribute to enhancing neuromuscular explosiveness performance in young elite soccer players. However, the exact mechanism responsible for these results still need to be determined.

Keywords: flexibility; neuromuscular explosiveness; soccer

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