ABSTRACT

Background: Strong evidence supports the use of the FIFA 11+ injury risk reduction warm-up program among soccer players, but few studies have investigated its impact on physical performance and movement control in athletes younger than 12 years of age, or the athletes' opinions of participating in the program.

Purpose: The primary purpose of this study was to measure the impact of the FIFA 11+ program on movement control [Landing Error Scoring System (LESS) and Y-Balance test (YBT)], agility, vertical jump (VJ) height, and trunk muscle endurance compared to a standard warm-up in pre-teen female athletes over one indoor soccer season. A secondary purpose was to assess the athletes' tolerance and enjoyment of the program.

Study Design: Cluster randomized controlled trial.

Methods: All six teams in the U10 and U11 female divisions of a developmental-level soccer club were cluster randomized to the FIFA 11+ program intervention group or the control group. Participants in the control group continued with a coach-determined warm-up for the duration of a five-month indoor soccer season. Pre- and post-season participants underwent physical testing using the agility T-test, Belt Mat vertical jump (VJ), and static plank tests; and two measures of neuromuscular control (LESS, YBT). Following the soccer season, the athletes in the intervention group also completed a bespoke Tolerance and Enjoyment questionnaire.

Results: The 11+ group (n=25) increased their mean static plank hold time by 26.1 ± 38.5 seconds compared to the control group (n=18), who only increased by 2.1 ± 37.1 seconds (p=0.047). For all athletes, there were improvements in mean LESS score (0.6 ± 1.3, p=0.003), and T-test time (0.4 ± 0.7, p=0.001); however, YBT scores worsened by approximately 2% from pre- to postseason. No differences were found for VJ. Athletes tolerated the program well, but the majority described the enjoyment of completing the program as moderately low.

Conclusion: This study suggests that the 11+ program may improve some aspects of physical performance in 9-11 year-old female soccer players, but the low enthusiasm for the program could have longer term adherence implications.

Level of Evidence: 2b

Key Words: female athletes, FIFA 11+, injury prevention, movement system, physical performance

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