



INTERNATIONAL GRADUATE COLLOQUIUM

# i-SPEAK 2025

SPORTS AND PHYSICAL EXERCISE ASSEMBLY OF KNOWLEDGE SHARING

COLLOQUIUM PROCEEDINGS

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ABSTRACT

# Effects of FIFA 11+ Level 2 Warm-up on Physical Performance Among U-15 Soccer Players

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**Keywords:** FIFA 11+ Level 2, Youth soccer, Agility, Muscular power, Warm-up protocols

## I. INTRODUCTION

Despite widespread use of FIFA 11+ for injury prevention, little is known about the performance-enhancing effects of its Level 2 variant [1]. This study evaluates its impact on agility, core strength, and muscular power in U-15 soccer players, addressing key gaps in youth training research and informing evidence-based warm-up strategies for improved athletic performance [2].

## II. METHODS

This true experimental study involved 22 male U-15 soccer players from PLD Seremban (aged 13–14). Participants completed either a FIFA 11+ Level 2 or a traditional warm-up in a single session. Pre- and post-test comparisons assessed acute effects on agility, core strength, and muscular power using the Illinois Agility Test, 7-Level Sit-Up test, and Vertical Jump, respectively [3][4].

## III. RESULTS AND DISCUSSION

### A. Effects of Warm-Up on Physical Performance

Table I demonstrated that the FIFA 11+ Level 2 warm-up significantly improved vertical jump ( $p = 0.031$ ) and agility performance ( $p = 0.046$ ), while no significant improvement was observed in core strength ( $p = 0.192$ ). These findings are consistent with previous research suggesting that structured neuromuscular warm-up programs like FIFA 11+ can enhance explosive lower-limb power and agility in youth athletes [5][6]. Although absolute gains were modest, the findings suggest the program may acutely enhance specific physical attributes relevant to youth soccer performance.

TABLE I  
PAIRED T-TEST RESULTS (FIFA 11+ LEVEL 2 GROUP)

Assessment	Pre-F11+	Post-F11+	P value
Vertical Jump (cm)	248.15 ± 17.392	250.23 ± 16.349	0.031
7 Level Sit-Up (score)	6.09 ± 0.831	6.36 ± 0.505	0.192
Illinois Agility Test (s)	18.51 ± 0.887	18.5 ± 0.847	0.046

In contrast, Table II demonstrated that the traditional warm-up led to a significant increase only in vertical jump performance ( $p = 0.014$ ), with no observable improvements in core strength or agility. These results highlight the more comprehensive benefit of FIFA 11+ Level 2, likely due to its multifaceted design incorporating plyometrics, dynamic balance, and sport-specific movements [3]. The agility gains in particular may be attributed to the reactive and directional change elements embedded in the FIFA 11+ routines, which mimic actual game demands more closely than general warm-up exercises.

TABLE II  
PAIRED T-TEST RESULTS (NORMAL GROUP)

Assessment	Pre-N	Post-N	P value
Vertical Jump (cm)	252.82 ± 9.850	255.59 ± 10.135	0.014
7 Level Sit-Up (score)	6.00 ± 0.632	6.36 ± 0.924	0.104
Illinois Agility Test (s)	18.90 ± 1.047	18.65 ± 1.152	0.500

### B. Comparison Between Warm-Up Methods

Between-group comparisons in Table III revealed that although effect sizes were small, the FIFA 11+ group consistently outperformed the traditional group in all three metrics, particularly in vertical jump and agility. These subtle yet meaningful improvements support existing evidence that FIFA 11+ enhances functional performance parameters, which are vital for competitive soccer [7]. However, the non-significant difference in core strength suggests that the short-term application of FIFA 11+ Level 2 may not be sufficient to elicit central trunk adaptations, which often require longer intervention durations and focused core training [8].

TABLE III  
INDEPENDENT T-TEST RESULT (FIFA 11+ AND NORMAL GROUP)

Assessment	FIFA 11+	Normal	t(df)	P value
Vertical Jump (cm)	2.078 ± 2.740	2.771 ± 3.101	0.555	0.750
7 Level Sit-Up (score)	0.273 ± 0.674	0.364 ± 0.674	0.323	0.464
Illinois Agility Test (s)	-0.575 ± 0.840	-0.249 1.181	0.747	0.585

#### IV. CONCLUSIONS

Taken together, the findings reinforce the utility of FIFA 11+ Level 2 as a more effective warm-up strategy for promoting acute performance benefits in youth soccer players, particularly in explosive and agility-related movements. Future research should explore longitudinal adaptations and include biomechanical analysis to further elucidate the mechanisms behind these acute gains.

#### ACKNOWLEDGEMENTS

The author would like to express sincere gratitude to all participants and coaches from PLD Seremban for their cooperation and commitment throughout the study. Special thanks are extended to the research assistants and data collectors for their valuable support. Appreciation is also given to the faculty and institutional management for providing access to the facilities and resources necessary for completing this research.

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