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Differences in physical fitness and technical-tactical performance in elite, sub-elite, and non-elite youth male soccer players

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INTRODUCTION:

Successful match performance depends on the interaction of physical, psychosocial, technical and tactical qualities [1]. Such characteristics influence the players selection by the coaches (i.e. elite vs. non-elite players) in the youth categories. [2, 3]. The primary aim of the current study was to examine the differences in physical fitness between elite, sub-elite and non-elite youth male soccer players. The secondary aim was to investigate the association between physical fitness and technical-tactical performance.

METHODS:

Two-hundred forty-three young male soccer players (16-17 years) participated in this study. The physical fitness parameters assessed included cardiorespiratory fitness (VAMEVAL test), countermovement jump test (CMJ), 10 and 40 m sprints, and the Illinois agility test. Skinfolds measurement was used to estimate body fat. Technical and tactical data were recorded during a competitive soccer match using a multicamera, semiautomatic optical tracking system (InStat Fitness, InStat Limited, Limerick, Republic of Ireland). The InStat index was considered an index of technical-tactical performance.

RESULTS:

Body fat percentage was significantly higher in the non-elite players compared to the sub-elite and elite players. Between groups differences were observed in the VAMEVAL test CMJ, 10 m sprint and agility, with the elite players demonstrating superior performance in all the tests compared to the sub-elite and the non-elite players. Also, the elite and sub-elite players had faster 40m sprints than the non-elite players. Technical-tactical performance (as expressed by the InStat index) was significantly better in the elite group compared to the sub-elite and the non-elite players (216.8 ± 28.4 vs 170.5 ± 20.6 vs 154.9 ± 31.5 ; $p < 0.050$). A moderate correlation was found between the InStat index and 10m sprint ($r = -0.578$, $p < 0.001$), and strong correlations were found between the InStat index and CMJ ($r = 0.616$, $p < 0.001$), 40m sprint ($r = -0.610$, $p < 0.001$), agility ($r = -0.669$, $p < 0.001$) and cardiorespiratory fitness ($r = 0.609$, $p < 0.001$).

CONCLUSION:

Elite youth soccer players performed significantly better in the physical fitness and technical-tactical performance compared to their sub-elite and non-elite peers. Moreover, physical fitness parameters correlated with technical-tactical performance during competitive matches. Taking all into account, physical fitness in youth soccer players should receive special attention as this appears to affect both technical and tactical performance.

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Topic: Coaching

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