

Original Article

Association of body composition and nutrient intake with physical fitness among young female lacrosse players: a preliminary cross-sectional study

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ABSTRACT

【Aim】

This study aimed to investigate the association of body composition and nutrient intake with physical fitness test performance of female lacrosse players for establishing strategies to improve their athletic performance.

【Methods】

We assessed the body composition (bioelectrical impedance method), endurance (Yo-Yo Test), agility (10 m × 5 shuttle run), and instantaneous power (vertical jump) of 18 adult female lacrosse club A-team players. We also measured their nutrient and energy intake required for one day of team training and two days of individual athletic training by recording their weight and photographs recording.

【Results】

Median weight and body fat values were 56.7 kg and 22.4%, respectively. Body fat percentage positively correlated with the shuttle run ($r = 0.56$, $p = 0.01$) and negatively correlated with the vertical jump ($r = -0.56$, $p = 0.02$) records. Median values for energy, protein, and carbohydrate intakes were 2,072 kcal, 72.5 g (1.3 g/kg body weight/day), and 300.3 g (5.2 g/kg body weight/day), respectively. The carbohydrate-energy ratio on the day of individual training positively correlated with the Yo-Yo Test record ($r = 0.50$, $p = 0.03$) and negatively correlated with the shuttle run record ($r = -0.67$, $p < 0.01$).

【Conclusion】

An association between body fat percentage, carbohydrate-energy ratio, and physical fitness was observed among the female lacrosse players. However, longitudinal and intervention studies are warranted in the future to assess the causal relationships between these variables.

Keywords: female lacrosse player, physical fitness, body fat percentage, carbohydrate-energy ratio, sports nutrition