Fuelling the youth athlete: insights from the academy soccer player

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The main nutritional challenge for the youth athlete is to ensure sufficient energy availability to promote growth and maturation, meet the energetic demands of training and competition and reduce the risk of injury. This presentation will place this challenge in context by drawing upon our applied research experiences of fuelling academy soccer players from the English Premier League (EPL). The weekly training load completed by players progressively increases as they transition through the academy pathway, and players may experience similar absolute loading patterns (e.g. total distance covered) as adult EPL players (1), albeit at a time when they are not yet biologically mature. To support such high training volumes alongside the energetic cost of growth and maturation (2), it is becoming increasingly recognised that nutrition should be a key component of an academy player's developmental programme. Indeed, as demonstrated from the gold standard doubly water method, individual players across the academy pathway (i.e., from U12 to U18) may present with an absolute total daily energy expenditure (i.e., 3000 – 5000 kcal.day^{-1}) that is comparable to (or exceeds) adult EPL players (3). In addition, academy players (within the U13 age group) typically expend 500-750 kcal.d^{-1} more than age matched players playing at "grassroots" standard (4). Despite such high training volumes and energetic demands, it is often reported that academy players "under-fuel", especially in relation to the acute period before, during and after training sessions (5). Although the negative outcomes associated with under-fuelling are often considered from a performance perspective, a more concerning outcome for adolescent athletes is the potential impact upon growth and maturation with a specific risk to skeletal structures. This is of critical importance for academy soccer players given the prevalence of growth-related injuries (to the knee, lower back, sacrum and pelvis) during periods of peak height velocity, as reported in academy players from England, Europe and South America (6). Unpublished observations from our group also demonstrate that training with reduced carbohydrate (CHO) availability increases bone resorption in academy players (Stables et al., in review). In using a qualitative methodology to explore the nutrition culture within the academy environment (Carney et al., in review), both players and stakeholders (e.g. parents, coaches etc) report an apparent lack of understanding and awareness on the role of nutrition in influencing player development, especially in relation to growth, maturation and reducing injury risk. Players also highlighted the influence of their parents on their dietary behaviours whilst parents, in turn, called for targeted education (as opposed to 'googling') to better support their sons. Notably, both players and stakeholders perceived that the daily schedule of an academy soccer player presents as 'too busy to eat', especially in relation to before school, and before and after training. When taken together, our data demonstrate the necessity for the co-creation of player and stakeholder specific nutrition education programmes that may serve as an initial step towards positively impacting the nutrition culture and service provision (7) associated with the academy soccer environment.

References

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