Motion analysis of U11 to U16 elite English Premier League Academy Players

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Match analysis of elite and non-elite youth soccer players has been conducted in different countries using a Global Positioning System (GPS) and such data could be used in the talent identification and development process. This study examined: 1) the distances and speeds covered during match play for U11 to U16 English Premier League Academy players; 2) the differences in match performance between retained and released players; and 3) the effect of calculating speed zones in different ways when analysing match performance. Eighty-one English Premier League Academy players (10 to 16 years old), competed in 11-a-side matches, were analysed using a 1 Hz GPS (SPI Elite, GPSport, Australia) with three speed zones (absolute, squad, individual). The players who were retained in the Academy for more than two seasons after the season in which the match analysis was completed were categorised as the retained group and players released from the Academy within two seasons or less after the season in which the match analysis took place were categorised as the released group.

For the absolute speed zone, the “flying” 5 m sprint speed of the fastest player in this study (7.5 m·s⁻¹) was used to create one set of speed zones that subsequently were used to categorise all the players’ performances. For the squad speed zone, five speed zones specific to each squad were calculated based on a mean of “flying” 5 m sprint speed for each age group. For the individual speed zone, speed zones specific to each player were calculated based on each individual’s “flying” 5 m sprint speed. Total match running distance increased with age from ~5700 m·h⁻¹ (U11) to ~6700 m·h⁻¹ (U15) (p < 0.01). Using the absolute speed zones it was possible to discern differences in high intensity (> 6.0 m·s⁻¹) distance covered with age (U11: 29 m·h⁻¹, U16: 164 m·h⁻¹, p < 0.01). Using the squad speed zones it was possible to discern differences between retained and released players in the U11/U12s (retained vs. released: moderate speed running = 949 ± 141 m·h⁻¹ vs. 827 ± 109 m·h⁻¹, p < 0.05) and in the U15/U16s (retained vs. released: walking = 1267 ± 284 m·match⁻¹ vs. 1041 ± 209 m·match⁻¹, jogging = 2524 ± 418 m·match⁻¹ vs. 2169 ± 510 m·match⁻¹, low speed running = 2319 ± 430 m·match⁻¹ vs. 1933 ± 522 m·match⁻¹, p < 0.05 for all). In conclusion, total match running distance and high speed running distance improve with age and match running performance distinguishes retained and released groups in an Academy. Moreover, the development in match running distance with age was best detected with absolute speed zone and the differences in match running performance between retained and released groups were best demonstrated with squad speed zone.

References