

Are differences in anthropometric measurements, speed, strength and sport-specific skills evident in young sub-elite soccer players with different skeletal age?

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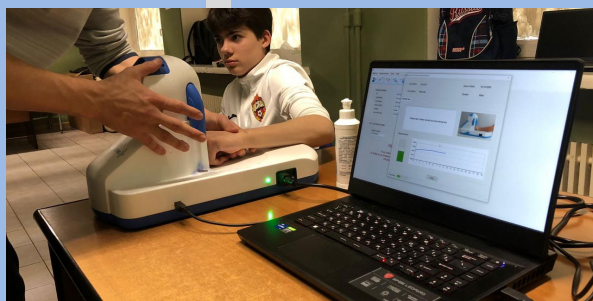
Subjects:

103 youth soccer players from six second division that academies participated in an experimental tournament (age 140 ± 6.8 months, height 150.2 ± 14.2 cm, weight 39.9 ± 12.5 kg, BMI 17.5 ± 3.8 kg/m²).



Intervention:

Anthropometric measurements (height, weight, body mass index), maturity status (Khamis-Roche formula), and skeletal age (BAUSport™ Sonic Bone ultrasound device) were conducted. The physical qualities and sport-specific skill tests consisted of: 5-, 10-, 20- and 30-m sprint, countermovement jump, horizontal jump, agility T-test, change of direction, and football specific dribbling circuit. All study participants were sub-divided into four groups depending on the skeletal age quartile.



Outcome Measures:

The outcome measurements were anthropometric measurements data, skeletal age in months, physical qualities and sport-specific skill tests results



Results:

skeletal age in the study sample ranged from 117 to 175 months (142 ± 12.1 months). Comparison of skeletal age percentile groups showed significant differences in chronological age ($p < 0.001$), height ($p < 0.001$), weight ($p < 0.001$) and BMI ($p = 0.008$). However, participants with the youngest skeletal age did not differ from more mature peers in terms of speed, strength and sport-specific skills ($p < 0.05$). A significant difference was only reported in the horizontal jump between the 2nd and 4th quartile ($p = 0.004$).



Conclusions:

A team may consist of young players whose skeletal age significantly differs by more than 30 months. However, compared to more mature players, less mature youth soccer players differ in stature and weight but are equal in speed and strength qualities. Thus, it is likely that the presence of other qualities, namely technical and tactical, contribute to soccer success allowing less mature young players to compete with larger peers and remain within academy systems



Parameters	0,25	0,5	0,75	1
height	143,92	148,27	153,35	156,72
weight	35,49	37,68	41,74	44,8
chronological age	140,73	139	140	138,36
skeletal age	129,63	138,93	148,23	154,55
sprint 5 meters	1,249	1,241	1,258	1,253
sprint 10 meters	2,116	2,121	2,136	2,136
sprint 20 meters	3,674	3,681	3,711	3,7
sprint 30 meters	5,197	5,205	5,239	5,236
CMJ vertical jump	28,7	28	26,8	27,9
BJ horizontal jump	175,78	177,79	177,61	176,91
dribbling	10,4	10,6	10,8	10,9
running with a change of direction	8,4	8,6	8,6	8,6
T-test	9,8	10	10	10