

Sprint performance of elite young soccer players

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Introduction

- Soccer is art and effort. It's characterized by the effort intermittence, where the low and the moderate intensity are frequently interrupted by the high intensity efforts. But it is, above all, a sport where the ability to control the ball is based on the excellent physical capacities. The skill evaluation is subjective and difficult to analyze, but the physical effort can be evaluated .

Description of the activities

- During a competitive match a player covers approximately 10 Km, from which 8 to 18% are top speed [1]. An international midfielder covers 10.8 Km, with a range of 9 to 14 Km, and 0.7% are high speed (21 Km/h) and 0.4% are top speed (30 Km/h) [6]. 50% of the actions of player last 1 to 3 sec, but in the pressing soccer 12% of the actions take 10 sec to cover distances of 40-50 m [4].

Methods and Material

- 82 young healthy soccer players
 - a) Junior C (n=33) -- 12-14 years of age
 - b) Junior B (n=23) -- 15-16 years of age
 - c) Junior A (n=26) -- 17-19 years of age.
- 4 to 6 weekly workouts (90-120 minutes)
- 1 official game / week
- Players of F. C. Porto

Methods and Material

- 3 pairs of photo-electric cells, connected to 2 digital watches, placed at 0 m, 10 m, 30 m.
- 5 sprints with 90 seconds rest in between
- Surface to sprint: lawn football pitch
- Weather conditions: sunny, dry and pleasant temperature
- Height measured barefoot and weight with a digital scale (Seca Alpha)

Results

Group	Age (years)	Height (cm)	Weight(Kg)
Junior C	13.4±0.6	161.1±9.0	54.2±9.8
B - C	2.6 1) 3)	11.5 1) 3)	14.4 1) 3)
Junior B	16.0±0.5	172.6±4.6	68.6±6.4
A - B	2.2 2)	2.1 2)	2.4 2)
Junior A	18.2±0.5	174.7±5.0	71.0±3.9

p<0.05 : 1) C and B; 2) A and B; 3) C and A.

Results

Group / time	10m (secs)	30m (secs)
C (12-14 y)	1.655 ± 0.105	4.604 ± 0.297
B - C	-0.279 1) 3)	-0.710 1) 3)
B (15-16 y)	1.376 ± 0.075	3.894 ± 0.179
A - B	-0.023 2)	-0.089 2)
A (17-19 y)	1.353 ± 0.078	3.805 ± 0.136
p<0.05: 1) B and C; 2) A and B; 3) A and C.		

Results

Player	Speed	at 10 m	at 30 m	last 20 m
Goalkeeper		7.596±0.565	7.970±0.399	8.179±0.345
Outside Defender		7.757±0.422	7.975±0.168	8.095±0.030
Central Back		7.193±0.159	7.824±0.171	8.183±0.181
Wide Player		7.423±0.267	7.935±0.233	8.222±0.256
Center Midfielder		7.413±0.497	7.896±0.271	8.170±0.166
Forward		7.296±0.384	7.844±0.308	8.154±0.305

Group A (n=26)

Conclusions

1. The junior C group was the slowest ($p < 0.05$) and the junior A group was the fastest
2. The differences of the speed averages between group B and C was much more bigger than the differences between the group A and the group B
3. On general, the goalkeepers were the slowest and the forwards were the fastest
4. The top speed was achieved on the final 20 m
5. Maturation might justify the differences

References

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