

DETERMINING THE LEVEL OF HIGH-SPEED ABILITIES OF YOUNG SOCCER PLAYERS AGED FROM 10 TO 12 YEARS

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Annotation. The problems of high-speed training of young players were considered. Carried out an analytical review of the scientific literature on the specific sources of development and control the speed of the players. The changes of speed training of young players 10-12 years during 2010-2012. The study involved 42 different football game role (forwards, midfielders, defenders) children's football academy "Metalist". Join the results of testing carried out by a system of training SMARTSPEED. On the field, it was found 4 lines wireless gates that automatically tablet computer controlled times taken to run the distance. It was found that with the increase in training time performance speed was significantly different compared to the previous year by 15 m intervals running from the scene, 30 yards from the scene, and 30 m on the move. Recommended directions for planning the preparation of young players for the development of high-speed qualities.

Keywords: young footballers, control testing, high-speed quality roles.

Introduction

At present, development of football depends not only on perfection of match tactic structure, basing on objective abilities of players and adversary's force, but also on ability to built training process so that in short period of time to achieve maximally possible level of team players' preparedness [2, 3, 4, 6].

Football is characterized by players' high motion activity, mainly of dynamic character, and by non-uniformity of physical loads and arrhythmic alternation of work and rest [1, 5, 7, 9]. Actions with ball and motions on field (run, walking) are manifestations of quickness abilities in football. Quickness, accuracy and timeliness of certain tactic task's fulfillment in match depend on how effective are football player's supporting motor system and motion abilities. Football player's quickness is main factor, which determines efficiency of competition activity [1, 3, 5, 6, 8].

Alongside with it, no other quality can be of the same importance as quickness abilities by many-side character of their manifestations. Especially it should be considered with training of junior sportsmen. For players of all roles it is important to quickly run short distances in the field, sharply change direction of run, sharply stop, to be able to choose required moment for acceleration (sudden sharp increasing of running speed), etc. However, specialists have no single opinion concerning specificities of development of football players' starting and distance quickness [3, 4, 5, 9, 11].

It would be erroneous to consider the most important football player's quickness ability only his speed of moving on field, without paying attention to the quickness of technical elements' fulfillment.

The problem of quickness ability's development was studied by M.A. Golik, A.B. Abdula, I.V. Azarova, V.V. Variushyn, V.V. Shalenko, T.F. Terentyev, but the works, devoted to development of junior, 10-12 years old, football players' quickness abilities, are insufficient. It determined the urgency of the present research.

The present work was carried out as per list of scientific topics of priority and developments for 2013-2015 of Kharkiv academy of physical culture, approved by Academic Senate of HEE № 8, 2012 by subject 2.3. "Scientific-methodic principles of perfection of sportsmen's training system in football, considering specificities of competition activity" (state registration No. 011U001722) and initiative topic of scientific and research works' plan of football and hockey department of Kharkiv state academy of physical culture for 2011-2015 by subject 2.6. "Optimizing of training process of football players of different qualification" (state registration No. 011U003127).

Purpose, tasks of the work, material and methods

The purpose of the research is to determine the level of quickness abilities of junior, 10-12 years old, football players.

The tasks of the research:

1. On the base of analysis of scientific-methodic literature to study up-to-date state of the problem of quickness' development of junior football players.
2. Determination of quickness level of junior, 10-12 years old, football players.
3. Carry out comparative analysis of football players' quickness abilities' indicators, considering their roles.

The methods of the research: analysis of special scientific-methodic literature, instrumental method of indicators' registration (system SMARTSPEED), methods of mathematical statistic processing of data.

Organization of the research. During two years (2010-2012) with one year-interval, we carried out testing of quickness abilities of 42 junior football players (year of birth-2000), of different football roles, who were trained during 2 years in football group CFA "Metalist", Kharkiv.

Registration of testing results was carried out with the help of training system. In the field we installed 4 lines of wireless dates, which automatically controlled time of distance running with tablet computer.

Results of the research

Modern stage of football development is characterized by intensification of football players’ motion activity, by expansion of their match actions’ range. Football match includes various motion actions, which to the largest extent depend on quickness abilities.

To determine the level of quickness abilities we applied 15 m and 30m running from the spot and from walking (fw) from position “high start”.

Quickness abilities’ indicators are presented in table 1. In this table one can see that all tested showed improvement of quickness abilities with ageing of sportsman. For example, analysis of 15 m running’s from spot mean indicators of all lines’ players (except goalkeeper) showed that there are confident differences between indicators of 10 and 11 years old players,; between 10 and 12 years old and between 11 and 12 years old players ($t_{1,2}=10.25$; $t_{1,3}=17.67$; $t_{2,3}=7.42$; $p<0.001$) (see table 1).

Table1

Comparative analysis of quickness level indicators of 10-12 years old football players

Nos.	Control exercise (test)	Sportsmen’s age (years)			Statistic significance					
		X±m			t _{1,2}	t _{2,3}	t _{1,3}	p _{1,2}	p _{2,3}	p _{1,3}
		X ₁ ±m ₁	X ₂ ±m ₂	X ₃ ±m ₃						
1.	15 m run from the spot, sec.	3.0 ±0.02	2.71 ±0.02	2.5 ±0.02	10.25	17.67	7.42	<0.001	<0.001	<0.001
2.	15 m run from walking, sec.	2.38 ±0.03	2.31 ±0.03	2.27 ±0.04	1.64	2.2	0.8	>0.05	<0.05	>0.05
3.	30 m run from the spot, sec.	5.37 ±0.046	5.2 ±0.042	5.0 ±0.041	2.72	6	3.4	<0.05	<0.001	<0.05
4.	30 m run from walking, sec.	4.89 ±0.047	4.67 ±0.044	4.45 ±0.048	3.41	6.54	3.37	<0.05	<0.001	<0.05

The obtained indicators of 15 m run from walk permit to affirm than 10 years old boys have confidently worse results of quickness abilities in comparison with their results at 12 years age by 0.11 sec. ($t= 2.2$; $p>0.05$). Between indicators of testing at 10 and 11 years age and at 11 and 12 years age differences are not significant and confident (see table 1).

The fulfilled analysis of 30 meters run from the spot and from walk showed that these indicators also have trend to improvement with football players’ ageing (see table 1). For example, comparison of indicators of 30 meters run from the spot and from walk stated confident differences between indicators of boys in every testing ($t=2.72$; $t=3.4$, $p<0.05$; $t=6.0$, $p<0.001$ and $t=3.41$; $p<0.05$; $t=3.37$, $p<0.05$; $t=6.54$, $p<0.001$, accordingly) (see table 1).

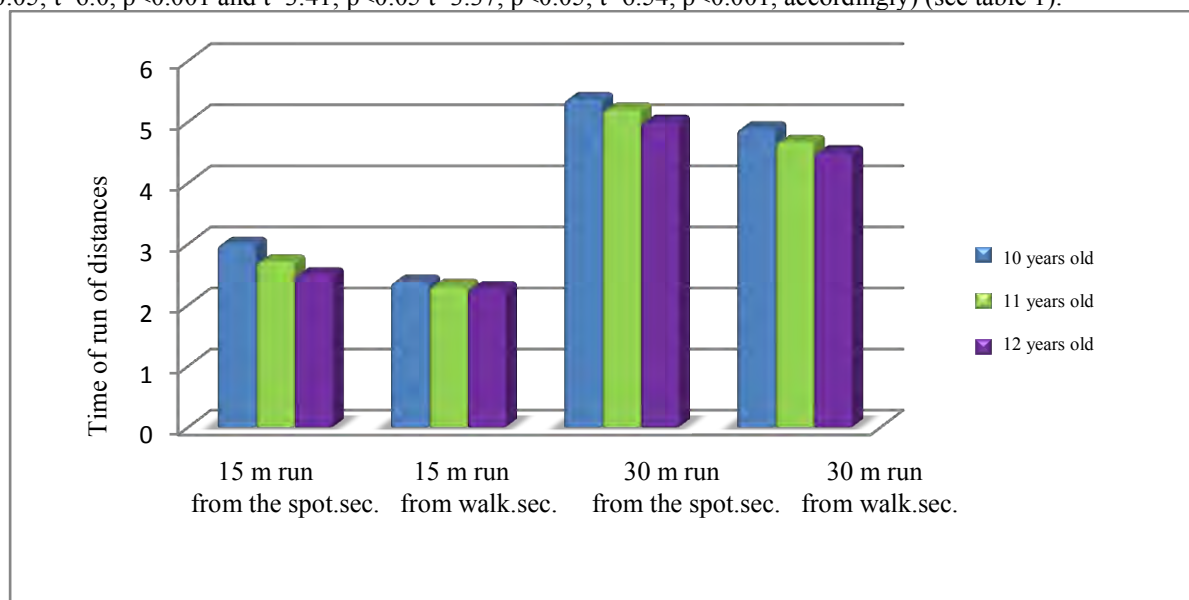


Fig.1. Comparative analysis of 10-12 years old football players’ quickness level (seconds)

Comparative analysis of 10-12 years old football players’ quickness level in 15 meters run from the spot, considering their football roles also showed confident differences between indicators of forwards in every testing (at the age of 10, 11 and 12 years old) ($t_{1,2}=6.94$; $p<0.001$, $t_{2,3}=6.3$; $p<0.001$, $t_{1,3}=13.64$; $p<0.001$, accordingly) (see table 2). It should be noted that in 15 meters run from walk confident differences were observed only in forwards’ indicators of 10 and 12 years old ($t_{1,3}= 2.29$; $p<0.05$), in other tests confident differences between forwards’ indicators were not found. The obtained forwards’ indicators in 30 meters run from the spot witness about presence of confident differences between results of all testing in different ages ($t_{1,2}= 3.89$; $t_{2,3}= 4.77$; $t_{1,3}=5.86$; $p>0.001$) (see table 2). In 30 meters run

from walk we found confident differences between forwards' indicators at 10 and 11 years old age and between forwards' indicators at 10 and 12 years old age ($t_{1,2}= 5.37$; $t_{1,3}= 6.5$; $p>0.001$), between indicators of forwards at 11 and 12 years old age confident differences were not found (see table 2).

Table 2

Comparative analysis of quickness level indicators of 10-12 years old football players of different roles

№ 3/x	Control exercise (test)	Sportsmen's age (years):			Statistic significance					
		10 (n=14)	11 (n=14)	12 (n=14)	$t_{1,2}$	$t_{2,3}$	$t_{1,3}$	$p_{1,2}$	$p_{2,3}$	$p_{1,3}$
		$X1\pm m1$	$X2\pm m2$	$X3\pm m3$						
Forwards										
1.	15 m run from the spot, sec.	2.95±0,035	2.63±0,03	2.4±0,02	6.94	6.3	13.64	<0.001	<0.001	<0.001
2.	15 m run from walking, sec.	2.35±0,035	2.29±0,036	2.25±0,026	1.29	0.9	2.29	>0.05	>0.05	<0.05
3.	30 m run from the spot, sec.	5.24±0,065	4.98±0,015	4.82±0,03	3.89	4.77	5.86	<0.05	<0.001	<0.001
4.	30 m run from walking, sec.	4.83±0,05	4.45±0,05	4.37±0,05	5.37	1.31	6.5	<0.001	>0.05	<0.001
Halfbacks										
1.	15 m run from the spot, sec.	3.03±0.031	2.78±0.03	2.56±0.03	5.79	5.1	10.89	<0.001	<0.001	<0.001
2.	15 m run from walking, sec.	2.4±0.028	2.3±0.032	2.26±0.028	2.35	0.94	3.53	<0.05	>0.05	<0.05
3.	30 m run from the spot, sec.	5.44±0.054	5.24±0.029	5.25±0.019	3.26	9.03	9.08	<0.05	<0.001	<0.001
4.	30 m run from walking, sec.	4.88±0.04	4.65±0.029	4.46±0.03	4.65	4.5	8.4	<0.001	<0.001	<0.001
Fullbacks										
1.	15 m run from the spot, sec.	3.05±0.067	2.72±0.03	2.57±0.03	4.49	3.53	6.53	<0.001	<0.05	<0.001
2.	15 m run from walking, sec.	2.4±0.057	2.33±0.031	2.29±0.031	1.07	0.9	1.69	>0.05	>0.05	>0.05
3.	30 m run from the spot, sec.	5.48±0.011	5.25±0.019	5.15±0.018	10.4	3.82	15.64	<0.001	<0.05	<0.001
4.	30 m run from walking, sec.	4.96±0.05	4.92±0.06	4.54±0.074	0.51	3.98	4.7	>0.05	<0.05	<0.001

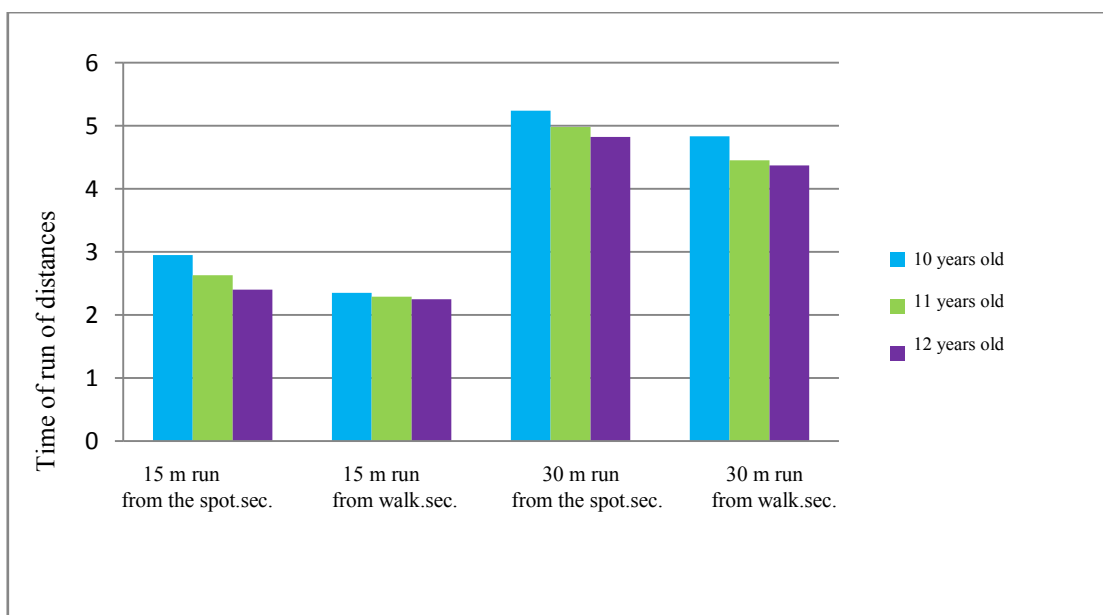


Fig.2. Change of quickness level's indicators of 10-12 years old football players' quickness level (seconds)

Analysis of quickness level's indicators of halfbacks witness that in 15 and 30 meters run from the spot and 30 meters run from walk there are confident differences between all tests' results during two years ($t_{1,2}=5.79$; $t_{2,3}= 5.1$; t

$t_{1,3} = 10.89$; $p > 0.001$; $t_{1,2} = 3.26$; $p > 0.05$; $t_{2,3} = 9.03$; $t_{1,2} = 9.08$; $p > 0.001$; $t_{1,2} = 4.65$; $t_{2,3} = 4.5$; $t_{1,2} = 8.4$; $p > 0.001$, correspondingly) (see table). In 15 meter run from walk confident differences were found between results of halfbacks at 10 and 11 years old age and 10 and 12 years old age ($t_{1,2} = 2.35$; $t_{1,3} = 3.53$; $p > 0.05$), While between indicators of 11 and 12 years old players there were no confident differences.

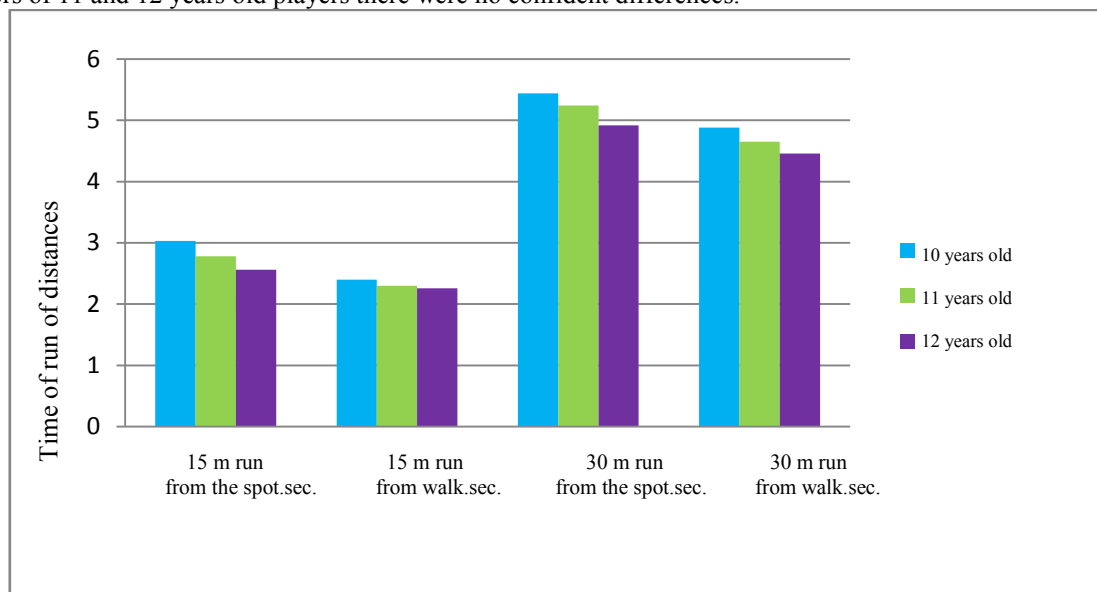


Fig.3. Mean indicators of 10-12 years halfbacks' quickness level

15 meter run indicators of young fullbacks of 10 years old age are confidently lower in comparison with their indicators at 11 and 12 years old age ($t_{1,2} = 4.49$; $t_{1,3} = 6.53$; $p > 0.001$). In its turn, at the age of 11 years old fullbacks had confidently worse indicators of quickness than at 12 years old age ($t_{2,3} = 3.53$; $p > 0.05$) (see table 2). The fulfilled analysis of 15 meters run from walking did not show confident differences between fullbacks in all tests in different age (see table 2).

In test 30 meters run from the spot 12 years old fullbacks had much better indicators, comparing with the same at 10 and 11 years old age ($t_{1,3} = 15.64$; $t_{2,3} = 10.4$; $p > 0.001$). While between indicators of 10 and 11 years old age there were found no confident differences.

Comparing of 30 meters run from walk results showed that 12 years old fullbacks had confidently lower results than the same at 10 and 11 years old age ($t_{1,3} = 4.7$; $t_{2,3} = 3.98$; $p > 0.001$, correspondingly); between their same indicators at 10 and 11 years old age there were no confident differences (see table 2).

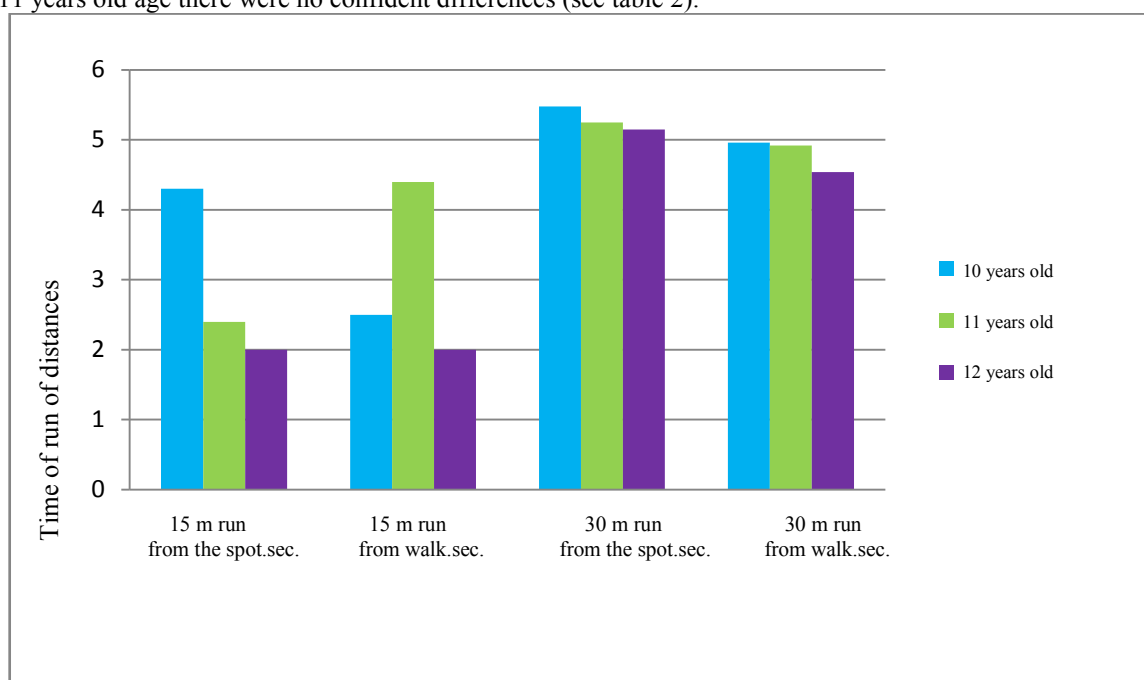


Fig.4. Mean indicators of 10-12 years fullbacks' quickness level

Summary:

1. Analysis of literature sources showed that one of the most important and determining qualities of junior, 10-12 years old, football players' physical condition is their quickness level, both of every separate player and the whole team, because it influences on realization of match elements.

2. In the course of study of quickness abilities we stated that time of 15 and 30 meters running from the spot and 30 meters from walking is confidently improved with ageing.

3. Analysis of quickness level's indicators of 10-12 years old football players, considering their football roles, resulted in the following:

- 10.11 and 12 years old forwards had confidently improved 15 and 30 meters run from the spot indicators and 15 meter run from walking indicators in the age of 10 and 12 years old, as well as 30 meters run from walk between indicators of 10 and 11 years old age and 10 and 12 years old age;

- 10, 11 and 12 years old halfbacks had confidently improved results of all tests, However indicators of 15 meters run from walk were confidently different in age of 10 and 11 years old and 10 and 12 years old;

- fullbacks had confidently lower results in 15 meters run at 10 years old age in comparison with age of 11 and 12 years old. At 12 years old their results in 30 meters run from the spot were confidently better than the same indicators at 10 and 11 years old age.

Further researches will be oriented on revelation of correlation interconnection between technical actions, used by junior football players, and their physical conditions.

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