

THE PHYSICAL AND MOTOR DEVELOPMENT OF 9-YEAR-OLD CHILDREN ATTENDING FOOTBALL CLASSES IN "FOOTBALL SCHOOL FOR CHILDREN"

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Annotation. *Purpose:* The purpose of the study was to determine the physical development and physical fitness of the boys at the age of 9 years old attending football classes. *Material:* The study covered 12 boys at 9 years old attending football classes in "Football school for children" in Jabłonowo Pomorskie. The assessment of the physical development was conducted by examining height and body weight and, on this basis, the somatic built indicator was calculated according to Rohrer index. To evaluate physical fitness, the Physical Fitness Index by Zuchor was used. *Results:* The studied exceed with height and weight their peers from the Kujawsko-Pomorskie Voivodeship. The level of physical fitness of the studied boys aged 9 years old did not show much diversity. *Conclusions:* The results improvement was not observed in most physical fitness tests.

Keywords: physical, development, fitness, football, children.

Introduction

The vast majority of the researchers accept physical fitness as the major feature of physical health [1, 2].

Technical progress and related automation and mechanization processes contribute to the partial elimination of muscle. This affects the increase in risk by reducing the overall physical fitness.

In order to counteract the factors it is necessary to responsibly promote the benefits of motor activity, as well as encourage (especially children and young people) to participate actively in selected outdoor sport. The basics of physical culture are involved during the physical education classes in elementary school, where the fundamental task is to develop and raise the level of physical fitness. In order to verify the effects of a teacher of physical education classes, tests on the development of physical fitness of children and adolescents are used.

The purpose of the study was to determine the physical development and physical fitness of the boys at the age of 9 years old attending football classes.

Materials and methods.

The study covered 12 boys at 9 years old attending football classes in "Football school for children" in Jabłonowo Pomorskie. Sport classes took place twice a week and lasted 60 min. In school the studied performed a program of physical education in terms of 3 classes a week with a focus on the evolution of overall physical fitness. Prior to the study all children were considered to be healthy by a school nurse.

Assessment of the physical development was conducted by examining height and body weight and, on this basis, the somatic built indicator was calculated according to Rohrer, index specified by the ratio of weight to height. The classification of this indicator indicates the degree of slenderness [4].

$$Mb \times 100/P^3$$

Mb - body weight, gram;

P – height, centimeter.

Using the typologies of Kretschmer according to the scale given by E. Curtis it was assumed that the individuals have a building depending on the indicator:

± - 1.28 representing the leposomatic type;

-1.29 -1.48 representing the athletic type;

- 1.49 - ± representing the pycnic type.

The height of the body was measured with antropometer, and body weight was measured with medical scale.

To evaluate physical fitness, 5 samples of the Physical Fitness Index by Zuchor were used.

- speed test (quick run for 10 seconds with high lifting of knees and clapping under raised leg (number of claps),

- jumping test (long jump from the place - the distance is measured by the jumper with his/her own feet. The result will be rounded: less than half a foot down, more - up),

- arms strength test (overhang with straight arms, overhang on one hand),

- flexibility test (slope in front),

- abdominal muscles strength test (lifting legs just above the floor and making "cross scissors", as long as it is possible.

Prior to starting the tests, the children were informed in detail about doing the exercises, and immediately prior to doing it, the coach did 15-minute warm-up.

The measurement of physical development was carried out once (in December 2012). The first physical fitness test was carried out in December 2012, and the second in March 2013.

In order to balance the results of the tests, the basic statistical methods were used.

The carried out analysis of the results showed that the greatest height, and body weight has K.K. (respectively 149 cm, 49.8 kg). The lowest belongs to M.G. (134 cm), while weight of K.P. (29.2 kg). (tab. 1) The largest slenderness belongs to Ł.G. (1.17), and the lowest to K.N. (1,58) (tab. 1). The analysis showed that the leptosomatic type belongs to three, the athletic type - five, while the pycnic type - four boys.

Table 1

The results of physical development of boys at the age of 9 years old.

No.	Studied parameters	Studied pupils											
		D.M.	K.N.	M.W.	M.G.	K.K.	Ł.G.	K.P.	N.L.	P.N.	K.M.	M.B.	S.M.
1.	Height of the body (cm)	139	138	145	134	149	145	135	142	138	141	137	140
2.	Body weight (kg)	39.9	41.7	44.3	29.9	49.8	35.9	29.2	41.5	35.9	39.2	39.4	38.9
3.	Rohrer index.	1.49	1.58	1.45	1.24	1.5	1.17	1.19	1.44	1.35	1.39	1.53	1.41

On the basis of table 2 it can be seen that the average height and weight and Rohrer index amounted to respectively 140,25 kg, 38.6 kg and 1,39.

Table 2

Numeric characteristics of height and weight, the result of somatic bult according to Rohrer index.

No.	Studied statistical	Volumes parameters	the studied 9 years old (n-12)
1.	Height of the body (cm)	M	140.25
		Min	134
		Max	149
2.	Body weight (kg)	M	38.6
		Min	29.2
		Max	49.8
3.	Rohrer index.	M	1.39
		Min	1.17
		Max	1.58

The basis for movement abilities in sport is the proper fit of the beneficial somatic features and functional movement apparatus, as well as other systems and mental features [6].

The results of the first stage of the study (December 2012) showed that in the first sample the best result was obtained by N.L. (33 claps), and the weakest result was obtained by S.M. (27 claps) (tab. 3). The next test of long jump - the best results was obtained by M.W. (8 feet), and the weakest was obtained by M.B. (5 feet). In the third test the best result was obtained by M.G., K.K., K.P., keeping up hanging with one hand for 10 seconds, while the others overhang for 10 seconds, but with both straight hands. In the next test the best exercising student touched the ground with all fingers of both hands (Ł.G.); the weakest result was obtained by five boys - touching the toes with the fingers of both hands. In the last test - abdominal muscles strength, "cross scissors" was done for the longest period of time by N. L. (for 43 seconds), and the shortest time was taken by P.N. (2 seconds).

Table 3

Physical fitness index by K. Zuchora – studies of December 2012.

No	Samples	the studied												
		D.M.	K.N.	M.W.	M.G.	K.K.	Ł.G.	K.P.	N.L.	P.N.	K.M.	M.B.	S.M.	
1.	Speed (number of claps)	30	31	33	29	28	32	29	33	30	31	30	27	
2.	Jumping (number of feet)	6	6	8	6	6	7	6	6	7	7	5	6	
3.	Strength of straight arms	10	10	10	10	10	10	10	10	10	10	10	10	

	hands (s)												
	Overhang on one hand (s)				10	10		10					
4.	Flexibility (slope in front)	2	3	3	2	3	4	2	3	2	2	3	3
5.	Abdominal muscle strength (s)	28	23	13	15	20	12	13	43	9	24	28	15

The results of the second stage of the study (March 2013) showed that in the first sample the best result was obtained by N.L., M.W. (34), and the weakest result was obtained by K.K. (28 claps) (tab. 4). The next sample of long jump - the best results was obtained by M.W. (8 feet), and the weakest was obtained by D.M. (5 feet). In the third test the best result was obtained by M.G., K.K., Ł.G., K.P., keeping up hanging with one hand for 10 seconds, while the others overhang for 10 seconds, but with both straight hands. The greatest flexibility was demonstrated by Ł.G. in the following sample (touched the ground with all fingers of both hands), the weakest (touching toes with fingers) - D.M. and K.M. In the test - abdominal muscles strength, "cross scissors" was done for the longest period of time by N. L. (for 44 seconds), and the shortest time was taken by P.N. (11 seconds).

Table 4

Physical fitness index by K. Zuchora – studies of March 2013.

No	Samples	the studied											
		D.M	K.N	M.W	M.G	K.K	Ł.G	K.P	N.L	P.N	K.M	M.B	S.M
1.	Speed (number of claps)	31	31	34	30	28	31	29	34	30	31	31	29
2.	Jumping (number of feet)	5	6	8	6	7	7	6	6	7	7	6	6
3.	Strength of straight arms hands (s)	10	10	10	10	10	10	10	10	10	10	10	10
	Overhang on one hand (s)				10	10	10	10					
4.	Flexibility (slope in front)	2	3	3	3	3	4	3	3	3	2	3	3
5.	Abdominal muscle strength (s)	27	24	14	16	19	13	14	44	11	24	27	17

The assessment of physical fitness involved the standards, which were used for the study that uses the five physical fitness test (tab. 5) differ from those that belong in the course of carrying out six tests of physical fitness by K. Zuchora.

Table 5

Assessment of physical fitness in points

Age of the studied	Assessment of physical fitness (points)					
	Minimum	Sufficient	Good	Very good	High	Outstanding
9-10 years	5	9	12	15	18	21

By comparing the test results of both stages, it must be said that young footballers improved their results in the part of the carried out tests (tab. 6), for example in speed test S.M. improved by 6.9%, but there are also boys, who deteriorated their effects, e.g. in the long jump from the place, 16.3%, there are also those, who did not improve. In the first stage of the study the greatest number of points was obtained by two boys (13 points), M.W. and Ł.G. (level - good). While at least five exercisers (10 points - sufficient level). In the second stage of the study (March, 2013), the best result was obtained by Ł.G. (14 points - good level), and the least, reaching the average level, D.M. (9 points).

Table 6

Quantitative and qualitative assessment of physical fitness – the study of March 2013.

No.	Samples	the studied											
		D.M.	K.N.	M.W.	M.G.	K.K	Ł.G	K.P.	N.L	P.N	K.M.	M.B.	S.M.
1.	Speed (point)	4	4	4	4	3	4	3	4	4	4	4	3

2.	Jumping (point)	1	2	4	2	3	3	2	2	3	3	2	2
3.	Strength of straight (point)	1	1	1	2	2	2	2	1	1	1	1	1
4.	Flexibility (point)	2	3	3	3	3	4	3	3	3	2	3	3
5.	Abdominal muscle strength	1	1	1	1	1	1	1	2	1	1	1	1
The number of obtained points		9	11	13	12	12	14	11	12	12	11	11	10
Assessment of fitness		satisf a ctory	satisf a ctory	good	goo d	goo d	goo d	satisf a ctory	goo d	goo d	satisf a ctory	satisf a ctory	satisf a ctory

Discussion

The topic related to the dynamics of development of the somatic characteristics and physical fitness was taken by many researchers [7, 8, 9, and 10].

Measurement of motor characteristics in the sense of a stand alone is impractical because each motor activity is a component of many mutually conditional physiological functions of the body [11, 13, 14, 15]. Accurate and reliable tests are necessary in the course of the conscious management of physical development of children and adolescents, because it makes it easier to control the methods and means of action.

By comparing the results of physical development test of the group of 9-year-old children with the studies of M. Napierała (2008), it can be noted that the studied footballers exceed their peers from the Kujawsko-Pomorskie Voivodeship in height and weight (Napierała 2008 respectively 137,45 cm and 33,21 kg).

The studied children improved their results in the majority of tests; however, the deterioration of the results was seen as well. The test to measure the arms strength was the most difficult. Only 3 boys in the first stage of the study overhang with one hand for 10 seconds, and in March the test was completed correctly by 4 exercisers.

Conclusions

- The level of physical fitness of the studied boys aged 9 years old did not show much diversity.
- Most of the tests of physical fitness did not observe the results improvement.
- There are cases of deterioration of test results, however, more young players improved.

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