



Improvement of speed and strength qualities of football players at the stage of sports specialization

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Abstract

Objective of the study was to develop test tasks that determine the level of speed and strength qualities of young football players.

Methods and structure of the study. Two groups of football players took part in the pedagogical experiment: 12–13 and 14 years old. Data analysis was carried out using intragroup and intergroup indicators. The evaluation coefficient made it possible to compare the statistical set of measurement results of various physical quantities in their corresponding physical units.

Results and conclusions. The proposed test tasks allow us to identify the level of development of speed-strength qualities. To increase the effectiveness of the educational and training process, focused on the development of speed and strength qualities, it is necessary to differentiate physical activity based on taking into account the individual characteristics of football players aged 12-14 years.

Keywords: *speed-strength abilities, dynamics, football players at the stage of sports specialization, control and assessment of speed-strength abilities.*

Introduction. The main problem of developing the speed-strength qualities of football players is the need for an optimal ratio of speed and strength exercises used in the educational and training process, using various means, which are determined taking into account the age characteristics of those involved.

Analysis of scientific and methodological literature shows that the opinions of various authors in assessing the sensitive period of development of speed-strength qualities of football players approximately coincide, and the most favorable age range is from 11 to 13 years.

This age period is characterized by intensive development of almost all physical qualities and is therefore favorable for practicing various sports. However, it is at this age that the maximum improvement in performance is observed, especially in the development of such physical qualities as speed, strength and agility, as well as technical elements are quickly and firmly absorbed, and the tactical thinking of young football players develops.

Considering that the development of speed-

strength qualities in later years slows down, due to the age-related characteristics of the psychophysiological development of the body, the age of 11-13 years is the most favorable and therefore during this period it is necessary to competently plan the educational and training process with the predominant use of physical activity focused on development of the previously listed physical qualities of football players.

A fairly convincing example, as confirmation of what was said earlier, are the results of the study by O.B. Lapshin, where the work clearly shows the main sensitive periods of development of physical qualities of speed and strength, a significant increase in indicators of which is noted already at the age of twelve, provides indicators of changes in the development of speed-strength qualities of football players of two age groups, which were determined using test tasks (control exercises) at the beginning and after the end of the school year [3].

Speed qualities in modern football are, in our opinion, the most important. A team's successful play is only possible if its players are ahead of the opposing



players, gaining time and space from them. A significant influence on the level of development of speed, as well as other physical qualities, is exerted by the intensity of physical activity at an early age, since it is known that in two children with the same speed abilities, the level of development of speed in adulthood is usually higher. who were more active in childhood [4]. In addition, training, which includes improving the technique of movements and improving the rhythmic characteristics of the performed physical exercises of elementary and complex forms of manifestation of speed qualities, has a significant impact on the development of speed-strength qualities.

Objective of the study was to develop test tasks that determine the level of speed and strength qualities of young football players.

Methods and structure of the study. The age period of 12–14 years considered in the study (the stage of sports specialization) is the most optimal in the development of speed-strength qualities, since, to a greater extent, their changes occur against the background of a significant restructuring of the basic functional systems of the youth body. It is necessary to take into account that at the age of 12–15 years, the levels of development of speed-strength qualities up to 75% depend on the weight and height parameters of the body [1, 2].

In pedagogical practice, control exercises are most often used to assess the levels of development of speed-strength qualities: standing long jump and shuttle run 6x20 meters. However, they do not allow

us to assess the level of their development to the required extent. In our opinion, this requires a set of test tasks that will allow us to objectively assess the level of development of speed-strength qualities of the main muscle groups, carry out a differentiated approach to the development of these abilities, and also increase the technical preparedness of football players.

Two groups of football players took part in the pedagogical experiment: 12–13 and 14 years old. The generated block of test tasks made it possible to differentiate individual achievements in terms of development of speed-strength qualities of young football players. Data analysis was carried out using intra-group and intergroup indicators. The evaluation coefficient made it possible to compare the statistical set of measurement results of various physical quantities in their corresponding physical units. Significance of the estimation coefficient: 0–10% – small; 11–20% – average; >20% – large.

Results of the study and discussion. Analysis of individual differences in the development of speed-strength abilities are observed in the following tests: flexion and extension of the arms, while lying down; jumping on a pedestal 40 cm high; pushing a medicine ball from the shoulder with your strongest hand (see table).

The smallest values of the shift values in the age range of 12–13 years were noted in the tests: lifting the body from a position lying on the back and deflection in a lying position on the stomach from 12 to 14%.

Dynamics of changes in indicators of development of speed-strength qualities of young men at the stage of sports specialization in different age periods

Test assignment	12- 13 years old		14 years	
	Beginning of the school year	End of the school year	Beginning of the school year	End of the school year
Standing long jump (m)	18	20	13	15
Standing jump (cm)	24	22	17	20
Pull-ups on a high bar (number of times)	19	20	17	18
Bending and extending the arms while lying down (number of times)	34	31	29	32
Fast run from a high start at 30 (m/s)	19	17	20	17
Relay race 6x20 (m\s)	24	20	26	25
Body deflection in a prone position (number of times)	14	16	15	13
Raising the body from a position lying on your back (number of times)	13	12	13	14
Jumping on a pedestal 40 cm high (number of times)	30	28	27	31
Pushing a medicine ball from the shoulder with your strongest arm (m)	27	28	23	25



The results obtained in tests related to overcoming the resistance of one's own body weight are the highest. At the age of 14 years, the highest indicators were found in control exercises 4 and 9, and the lowest in control exercises 1 and 3. In the test results using 7 and 8 control exercises, after the end of the school year compared to its beginning, a negative trend in indicators was recorded.

In our opinion, minor multidirectional changes in test results using 4, 9, 7 and 8 control exercises, along with the natural process of development of the muscles involved in performing these exercises and, accordingly, an increase in muscle mass, can also be explained by the predominant use of physical activity in the educational process, focused on the development of these muscle groups.

Conclusions. The proposed test tasks allow us to identify the level of development of speed-strength qualities. To increase the effectiveness of the educational and training process, focused on the development of speed and strength qualities, it is necessary

to differentiate physical activity based on taking into account the individual characteristics of football players aged 12-14 years.

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