



The Value of Postural Stability in the Technical Training of Young Soccer Players between the ages of 7 to 10 Years

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Abstract

The study aims to demonstrate the significance of postural stability development as the foundation for coordination skills in raising the technical preparedness of young football players aged 7 to 10. The comparative methodology, educational observations, control tests, pedagogical tests, and biomechanical methods (namely, the optokinetic test, a stability test, and a test for isometric contraction of the leg muscles) were used.

Football players aged 7-10 have already formed all the main mechanisms of movement control; however, the level of their development still needs to be improved for a quick change of postures and movements in a game situation. Working on the development of postural stability in young football players during the training process allows them to achieve the following results: a rapid change in the structure and direction of motor actions, an increase in the stability of the regulatory mechanisms of body balance, and also increase the rate of formation of new motor patterns, which facilitates the process of technical training of athletes.

A high degree of postural stability not only aids in the quicker and better mastery of technical football elements but also speeds up the use of those elements in game situations. This is a crucial factor in the athletic success of football players between the ages of 7 and 10, both as individuals and as a team.

According to the study results, the most favourable period for the development of postural stability in young football players is the period of ontogenesis from 8 to 9 years.

Keywords: postural stability, coordination abilities, technical training, technique, sialography, competitive activity.

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Introduction

It is impossible to train young athletes—including football players—no matter what their sport of choice is without designing the training program to attain a high degree of physical development across the board, with coordination skills emerging as the most important among them. At the same time, within the framework of the technical training of young football players aged 7-10, special attention should be paid to the

development of their coordination features, in the structure of which it is postural stability that comes to the fore, which, within the framework of the dissertation research, must be considered as the ability of football players to maintain a stable body position by maintaining pressure, following the indicators of the area of support.



Postural stability is the basis of all coordination abilities of athletes since a high level of development of this quality helps maintain balance, quickly restore body position when it changes, and maintain stability during the performance of certain technical elements. The ability of athletes to perform certain movements directly depends on the level of development of postural stability, especially in football, the specificity of which is determined by the need to perform a large number of technical elements in conditions of a rapid change in body posture and the importance of its rapid recovery.

Materials and methods

The comparative methodology, educational observations, control tests, pedagogical tests, and biomechanical methods (namely, the optokinetic test, a stability test, and a test for isometric contraction of the leg muscles) were used.

The study involved 30 young football players aged 7-10 playing football in elementary training groups. All participants in the experiment are boys.

Literature Review

For young football players aged 7 to 10, maintaining postural stability is crucial to success on the field. Football is a technical and tactically difficult sport; thus, athletes may frequently be required to execute intricate coordination actions. This is only possible with a suitable level of postural stability development.

Physiological measurements are one of the individual characteristics that greatly influence the achievement of higher levels in all sports and sporting events, and the components of the physical structure of a footballer play an important and fundamental role in the selection and selection of talented people and then in progress and development level with the help of appropriate training programs [3].

One of the most important conditions in the implementation of the system of physical education of children in the period of ontogenesis from 7 to 10 years is the knowledge of their personal qualities, physical and mental health, the resistance of the nervous system to various types of irritations, endurance, interests and capabilities. In this regard, the analysis of the

physiological characteristics of the development of young football players in the period of ontogenesis from 7 to 10 years is of particular importance.

The building blocks of movement culture are established throughout the first seven to ten years of life. During this time, children also successfully master new, previously untried exercises and activities and gain knowledge in physical education. Children have such a strong grasp of movement mechanics that they may pick up new motor skills like football without more training. [3].

During 7-10 years of life, the foundations of the culture of movements are laid, mastered new, previously unknown exercises and actions, and knowledge in the field of physical education. The ability of children to master the technique of movements is so great that many new motor skills are mastered without special instruction.

Let's analyze the developmental features of postural stability in young football players. It is important to note that all operations without which a motor action is impossible (for example, programming a movement, planning it, or directly performing it) is performed with the involvement of different levels of the central nervous system and is called dynamic subordination. Let's reveal the essence of this concept. In other words, the coordination of movements is a complex process, for the completion of which it is necessary to carry out a large number of operations, from programming the action itself at the lower level of the central nervous system to the realization of the body's stability at the higher levels. Postural stability stands out from this position in the structure of coordination abilities, serving as a basis for these movements.

M.V. Khodzhieva, in her study, paid special attention to the fact that children in the period of ontogenesis from 7 to 10 years old have significant differences in time indicators (primarily latent) of various kinds of motor reactions.[5]. The researcher explained this trend by showing that certain age-related tendencies of motor analyzers develop extremely slowly. In football training, this manifests itself, first of all, in the lack of formation of fine differentiated movements, as well as in a low level of postural stability, which, in turn, leads



to the fact that football players are not yet able to fully maintain a sense of balance, which, in turn, leads to the imperfection of their technical readiness and insufficiently high results in a real game.

Football is distinguished by a changeable power of labour, coupled with ongoing changes in the structure and direction of motor activities, as well as by situational variability and a lack of time, according to A.I. Tabakov [4]. All of this contributes to the development of fatigue, which in situational sports primarily affects a decline in postural stability, specifically vestibular stability, a breach of the differentiation of fine movements, and an imbalance between the speed of motor reactions and the regulation mechanisms.

Modern researchers have been developing the problem of finding the most effective method for increasing the level of technical preparedness of athletes for many years, but there is yet to be a universal one up to the present time. In particular, although experts have a common opinion on what exercises should be systematically offered to athletes to improve their skills, there are still disagreements regarding organizing physical training classes.

As noted by Omar Muhammad Ali, at the age of 7-10, it is of particular importance to developing a base of motor patterns, which will gradually move to specific motor abilities through systematic training. In particular, this applies to general kinetic abilities, especially the ability to coordinate and the ability to move together[2].

Young football players are actively growing and developing from head to toe. Individual organ and functional system growth and development rates are still high, although slightly slower than in earlier ages. Unevenness and undulation are distinctive aspects of the body's growth in youngsters aged 7 to 10.

During this period, the mobility of the spine and the shoulder and hip joints increases most intensively in young football players. The muscular system still needs to be better developed. The ratio of muscle mass to total body weight in this age period is about 1/4. In athletes of 7-10 years old, muscles develop unevenly: first,

the muscles of the trunk, lower extremities and shoulder girdle, and later, small muscles.

Football instruction for kids aged 7 to 10 starts with a separate study of technique, first the attack method and then the defence technique. This does not imply that you must first study every attack tactic before learning every defence tactic. After mastering one or two attack strategies, moving on to the equivalent counter-methods is important.

During the execution of techniques, there is an active development of autokinetic and statistical reflexes due to the need to quickly change the position of the body in space and return to its original position (for example, the transition from running across the field to stopping with the ball), which contributes to the improvement of postural stability[1].

Almost no separate studies of the qualification dynamics of postural stability of young football players in the ontogenesis interval from 7 to 10 years have been conducted to date, even though all contemporary researchers note a significant positive impact of football training on the level of development of physical qualities in young athletes. During the analysis of Russian and foreign sources, we found that in kids who consistently play football, certain coordination skills (in throwing for accuracy and distance, in sports-playing motor actions) are improved quite quickly, which, in turn, helps to improve their postural stability[1].

At the same time, according to the results of separate studies, the constant attendance of football training sessions by children aged 7-10 years increases the value of this indicator by almost 2 times, compared with the results of peers who do not play sports. In addition, studying athletes of the main technical elements shows the greatest efficiency in developing postural stability.

Results

The development of the ability to retain this characteristic in junior football players based on the chosen methods and techniques was assessed to determine the significance of the development of postural stability in the technical training of football players. Table 1 presents the findings.

Test	7 years	8 years	9 years	10 years
Standing on one leg while holding the ball on the foot of the other, min.	0.45±0.7	0.72±0.8	0.9±0.1	1.5±0.6
Turns on the gymnastic bench, times	5.14±0.2	8.7±1.4	13±0.1	14.3±0.3
Optokinetic test, deviation (in degrees)	7.5±0.1	17.8±0.5	12±0.1	5±0.1
Stability test, sec.	6.6±0.6	17.4±0.2	23.2±0.8	27.1±0.2
Test for isometric contraction of leg muscles, score	0.33±0.2	0.85±0.7	2.5±0.7	3.4±0.4

Table 1 (Table 1). The results of assessing the development of the ability to maintain postural stability of football players

These indicators can be taken into account by football coaches in the initial training groups as part of developing programs to improve the level of technical preparedness of juniors.

Discussion

The study found that the phase of ontogenesis between the ages of 8 and 9 is the most advantageous for developing postural stability in young football players. Holding a static load with one's legs is called isometric leg contraction. At this age, athletes also tend to have high rates of isometric leg contraction, a relatively high level of stability, and good indicators of balance function when considering the influence of optokinetic nystagmus brought on by movements along a screen with black and white stripes.

Therefore, 7-10-year-old football players have already formed all the main mechanisms of movement control. However, the level of their development needs to be improved for a quick change of postures and movements in a game situation. Working on the development of postural stability in young football players during the training process allows them to achieve the following results: a rapid change in the structure and direction of motor actions, an increase in the stability of the regulatory mechanisms of body balance and also increase in the rate of formation of new motor patterns, which facilitates the process of technical training of athletes.

Conclusion

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The study's findings make it clear that having a high level of postural stability aids in learning football's technical elements more quickly and effectively and using them more quickly in actual game situations. This is a crucial factor in the athletic success of individual football players aged 7 to 10 and their teams.

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