

<sup>1</sup>Sautov R.T.<sup>a</sup>, <sup>2</sup>Tyshchenko V.A.

<sup>1</sup>Kazakh Academy of Sport and Tourism, Almaty, Kazakhstan

<sup>2</sup>Zaporizhzhia National University, Zaporizhzhia, Ukraine

## CHANGE OF PHYSICAL FITNESS INDICATORS OF SOCCER PLAYERS AT THE STAGE OF PRELIMINARY BASIC TRAINING

Sautov Rakhmet Tyulimbayevich, Tyshchenko Valeria Alekseevna

### Change of physical fitness indicators of soccer players at the stage of preliminary basic training

**Abstract.** The article presents the research materials confirming the features of the influence of the process of stage-by-stage training of football technique and tactics elements on the dynamics of physical fitness indicators of football team players. The results of the study showed that the conjugate impact technique contributes to a greater extent to improving physical fitness indicators, which are the basic basis for the development of basic and special physical qualities that are most important in football. It was found that the results of the subjects of the first experimental group exceeded the results of the subjects of the second experimental-control group in the following indicators: speed, agility, speed strength, flexibility, abdominal strength. The accuracy of the increased indicators of the first experimental group was noticeable by the end of the third and fourth stages of training, during the period of time when a smooth transition from visible stabilization of motor skills to their further improvement is carried out, but already in a competitive game. Differences in changes in the indicators of the experimental and experimental-control groups of subjects according to such indicators as general endurance and wrist flexor strength were insignificant at all main stages of training.

**Key words:** soccer, general preparatory period of training, technique and tactics of the game, physical qualities, conjugate method.

Саутов Рахмет Тюлимбаевич, Тищенко Валерия Алексеевна

### Футболшылардың алдын ала базалық даярлық кезеңіндегі дене даярлығы көрсеткіштерінің өзгеруі

**Аңдатпа.** Мақалада футбол ойынының техникасы мен тактикасының элементтерін кезең-кезеңімен үйрету процесіндегі футбол командасындағы жаңадан бастап жатқан ойыншыларының дене даярлығы көрсеткіштерінің динамикасына әсерінің ерекшеліктерін растайтын зерттеу материалдары келтірілген. Зерттеу нәтижелері ойын техникасы мен тактикасының негізгі элементтерін үйретуде қолданылатын біріктірілген әсер ету әдісінің мағыналы негіздері футбол сияқты спорттық ойынның ең маңызды негізгі және арнайы дене қасиеттерін дамытудың негізі болып табылатын және дене даярлық көрсеткіштерін арттыруға көбірек ықпал ететінін көрсетті. Атап айтқанда, бірінші тәжірибелік-эксперименттік топтың субъектілерінің нәтижелері шапшаңдық, ептілік, шапшаңдық күші, икемділік, құрсақ тығыршығы сияқты көрсеткіштер бойынша екінші тәжірибелік-бақылау тобының субъектілеріне қарағанда жоғары екендігі анықталды. Бұл ретте бірінші тәжірибелік топтың көрсеткіштерінің мұндай өсуінің дұрыстығы үйретудің үшінші және төртінші кезеңдерінің соңына қарай ерекше байқалады; яғни жарыс ойыны кезіндегі уақыт аралығында қозғалыс дағдылары көрінетін тұрақтандырудан оларды одан ері жетілдіруге тегіс көшу жүзеге асырылады. Үйретудің барлық негізгі кезеңдерінде жалпы төзімділік пен қол иілгіш күштері сияқты көрсеткіштер бойынша субъектілердің тәжірибелік-эксперименттік және тәжірибелік-бақылау топтарының көрсеткіштерінің өзгеруіндегі айырмашылықтар шамалы болды.

**Түйін сөздер:** футбол, жалпы дайындық кезеңі, ойын техникасы мен тактикасы, дене қасиеттері, біріктірілген әдіс.

Саутов Рахмет Тюлимбаевич, Тищенко Валерия Алексеевна

### Изменения показателей физической подготовленности футболистов на этапе предварительной базовой подготовки

**Аннотация.** В статье представлены материалы исследования, подтверждающие особенности влияния процесса поэтапного обучения элементам техники и тактики игры в футбол на динамику показателей физической подготовленности начинающих игроков футбольной команды. Результаты исследования показали, что содержательные основы методики сопряженного воздействия, использованной при обучении основным элементам техники и тактики игры, в большей мере способствуют повышению показателей физической подготовленности, которые являются базовой основой развития как основных, так и специальных физических качеств, наиболее важных в таком игровом виде спорта, как футбол. В частности, было выявлено, что результаты испытуемых первой

опытно-экспериментальной группы оказались выше, чем у испытуемых второй опытно-контрольной группы, такие как быстрота, ловкость, скоростная сила, гибкость, сила брюшного пресса. При этом достоверность такого повышения показателей первой опытной группы особенно заметно к концу третьего и четвертого этапов обучения, то есть в тот промежуток времени, когда осуществляется плавный переход от видимой стабилизации двигательных навыков к дальнейшему их совершенствованию, но уже в соревновательной игре. Различия в изменении показателей опытно-экспериментальной и опытно-контрольной групп испытуемых по данным таких показателей, как общая выносливость и силы сгибателей рук, были незначительны на протяжении всех основных этапов обучения.

**Ключевые слова:** футбол, общий подготовительный период тренировок, техника и тактика игры, физические качества, сопряженный метод.

**Introduction.** In the conditions of teaching certain physical exercises at the initial stage of sports training, especially in the desire to master and consolidate the technical side of this or that type of competitive exercises, the effectiveness of the influence of the methodological order of training is assessed by the external, aesthetic appeal of practising this or that type of selected sport. It means quite visible changes in external, anatomical signs of physical development of the body [1-3]. This is in the first place; in the second place, the objective side of the “effectiveness” of such development is evaluated. And this efficiency, in itself, is perceived by others as physical fitness, i.e. in the form of “visible ability” of a pupil to further master more complex motor actions [4-7]. For this reason, progressive changes in the indicators of physical fitness and physical development, should initially be felt by the student himself; and not only in relation to the somatic signs of the body, but also “deposited” in his thinking as significant successes in the dynamics of mastering the desired exercises; of course, if there is a motivated content of the training process [8-11]. For only on the basis of such “feeling” is possible further successful development of such special physical qualities as speed, agility, endurance [12-14].

**The aim of the study is** to research the dynamics of physical fitness indicators of novice soccer players of the team during the period of step-by-step training in soccer skills.

#### **Study objectives:**

- to compare the features of changes in the indicators of physical preparedness of novice soccer players at different stages of the general preparatory period of training in a comparative study of the effectiveness of the use of two types of methods of teaching skills in soccer - the method of conjugate influence and traditional (separate) teaching methods;

- substantiate the need for in-depth training of the basic elements of technique and tactics of this sports game, in particular, didactic significance of education of the main physical qualities of the students in the conditions of application of the method of conjugate influence.

**Materials and methods.** The players of the KIFS (Kazast International Football School) soccer school

took part in the training experiment. Two experienced groups of subjects, future players of the soccer team with a total of 46 people, were recruited from among the 50 who were engaged in the random sampling method.

The experiment involved young male soccer players aged 12 to 14 years old studying at the KIFS soccer school located in Almaty, Kazakhstan. The study was conducted over a six-month period, from January to June 2024, and included four training stages. Each stage lasted six weeks, which ensured a gradual development and assessment of physical fitness indicators.

In the first experimental group, numbering 24 soccer players, the trainings were conducted on the basis of using the method of conjugate influence in the technology of training, contributing to the successful solution of such pedagogical tasks as:

- 1) to provide a unified interaction of physical training with nominal technical and tactical training; that is, in the training of novice soccer players the following sequence of types of training was determined: a) combining types of physical and tactical training; b) combining types of physical, technical and tactical training (through the rational planning of training, control and competitive games along the way at each stage of the training process);

- 2) to promote the development of special physical qualities against the background of the very process of studying and mastering, firstly, the technique of ball possession; secondly, in the process of mastering the techniques of group and individual tactical actions.

In the second, experimental-control group, numbering 22 soccer players, training was based on the use of standard, “separate” teaching methodology: the main attention was paid to mastering only individual elements of technique and tactics of the game, with the aim of holistic, correct execution of them: these elements with and without the ball were learned out of connection with the development of physical fitness indicators, and therefore out of connection with the development of basic and special physical qualities. Reproductive level of learning was motivated: by instruction, by example: to master first individual details, and then the whole

structure of each technical and tactical element and only typical ways of correcting errors.

In each of the indicated experimental groups, at the end of the first stage of training, and then dynamically - at the end of the second, third and fourth stages of the general preparatory period of training, the following control exercises were used in order to assess the state of the following motor qualities:

- speed qualities - running at a distance of 100 meters;
- agility (coordination of integral motor actions) - shuttle run;
- speed-strength - long jump from a place;
- arm flexor strength - pull-up in hanging on hands with a grip from above;
- general endurance - running at a distance of 3000 meters;
- strength of the abdominal press - exercise in pairs: lifting the torso from the starting position lying on the back with bent legs at the knees for 30 seconds;
- flexibility - mobility of the bone and ligament apparatus of the spinal column. Testing procedure: initial position - sitting on the floor, straightened legs separated by 30 cm; tilting the torso, reach forward folded hands of straightened arms as far from the legs as possible. Determination of the visual "density of inclination" of the torso to the legs: measuring the distance from the heels of the feet to the end of the bones of the fingers of the folded hands.

During the experiment, regular medical monitoring of the participants was conducted to monitor their

health. Medical monitoring included measuring heart rate and blood pressure, as well as general medical examinations before and after each stage. These measures ensured the safety of the participants and allowed for the timely detection of possible negative effects of training loads on their bodies.

**Results.** It is known that the basis of "physiological health" engaged in any sport is the consistency of such indicators as: physical development; physical fitness; readiness of physiological functions of the body to perform the available amount of physical activity [14]. The purpose of our study was to study and evaluate the dynamics of changes in physical fitness indicators of youth soccer team in the structure of stage-by-stage training of technique and tactics of the game, that is, in the conditions of initial formation, stabilization, consolidation, as well as at the stage of preliminary basic training of elements of technique and tactics of playing soccer.

When conducting a comparative analysis of the test results of the subjects of the first and second experimental control groups, which were obtained in the general preparatory period of their training, the following features were identified.

The results of the control test "100m run", reflecting the level of development of speed qualities, in both experimental groups of subjects during all three stages of training, did not differ significantly from each other: the running time in the first experimental group varied within  $13.2 \pm 0.36 - 13.8 \pm 0.41$  seconds, and in the second experimental group - within  $14.2 \pm 1.6 - 14.9 \pm 1.9$  seconds (table 1).

Table 1 - Changes in physical fitness indicators of novice soccer players of the soccer team at the stages of the general preparatory period of training

| Indicators                                     | Indicators of the first (I) and second (III) experimental groups ( $\bar{x} \pm m$ ) |            |                         |            |                        |            |                         |            |
|--|--|------------|-------------------------|------------|------------------------|------------|-------------------------|------------|
|  | End of the first stage   |            | End of the second stage |            | End of the third stage |            | End of the fourth stage |            |
|  | I<br>n=24  | II<br>n=22 | I<br>n=24               | II<br>n=22 | I<br>n=24              | II<br>n=22 | I<br>n=24               | II<br>n=22 |
| Running 100 m, s                               | 13,8± 0,41   | 14,2± 1,6  | 14,6± 0,61              | 14,9± 1,9  | 13,2±0,14              | 14,8± 0,42 | 13,2±0,36*              | 14,9± 0,47 |
| Shuttle run, s                                 | 8,9± 0,62  | 9,2± 0,78  | 8,4± 0,68               | 8,9± 0,15  | 7,8±0,12*              | 9,7± 0,11  | 7,6 ±0,11*              | 10,9± 0,14 |
| Long jump from a place, cm                     | 191,5± 2,15  | 186,2± ,51 | 192,6±1,95              | 189,4± 1,9 | 193,2±1,9*             | 182,5± 3,6 | 195,6±4,1*              | 180,5± 3,9 |
| Strength (pull-up in hanging on hands, number) | 7,0± 1,71  | 7,0± 1,22  | 6,0± 1,39               | 7,2± 1,41  | 8,8± 1,41              | 6,4± 1,27  | 8,9± 1,21               | 6,5± 0,86  |
| Running 3000m, min: s                          | 15:5± 0,8  | 16:6± 0,61 | 13:8± 0,18              | 14:4± 2,6  | 13:8± 0,5              | 14:2± 1,4  | 13:9± 0,63              | 14:4± 0,81 |

|   |           |            |            |            |            |           |             |            |
|---|-----------|------------|------------|------------|------------|-----------|-------------|------------|
| Abdominal press*<br>(number)  | 14,6± 1,2 | 13,2± 1,64 | 14,2± 0,62 | 15,7± 1,26 | 16,8± 1,2* | 13,5± 0,7 | 17,9± 0,8 * | 13,2± 0,71 |
| Flexibility**(cm)   | 8,9± 1,6  | 7,9± 0,9   | 8,7± 1,8   | 8,9± 1,12  | 8,6± 1,22  | 6,4± 0,16 | 9,8±0,56*   | 6, ±0,21   |
| Note: * - abdominal press (test exercise in pairs): lifting the trunk from the starting position lying on the back with legs bent at the knees (number in 30 seconds);<br>** - flexibility - starting position sitting on the floor, legs straightened, feet separated by 30 cm: torso tilt to the legs, stretching straightened arms between the legs forward - distance from the heels to the end of the fingers of the folded hands.<br>♦ - differences between the indicators of the first experimental and the second experimental-control groups are statistically significant ( $P \leq 0, 05$ ) |           |            |            |            |            |           |             |            |

By the end of the fourth stage of training, the running time for this distance, in the first experimental group fluctuated at the level of  $13.2 \pm 0.36$ , and in the second experimental group -  $14.9 \pm 0.47$  s. That is, in the first experimental group, at this stage of training, the indicators were higher than in the second group by almost 13% (table 1).

The results of the control test "shuttle run", which evaluates the level of agility development (coordination of integral motor actions), in the first experimental group of subjects were higher than in the second experimental group. It is especially noticeable on the data of the end of the third and fourth stages of training. In particular, by the end of the third stage of training the subjects of the first experimental group performed this test task on average for  $7.8 \pm 0.12$  s, and by the end of the fourth stage - for  $7.6 \pm 0.11$  s (Table 1). At the same time, against the background of the same stages of training, the results of the second experimental group were lower and averaged  $9.7 \pm 0.11$  and  $10.9 \pm 0.1$  s. This means that during the third and fourth stages of training the performance of the first experimental group remained higher than that of the second group by more than 24 - 43% (table 1).

The results of the control test "long jump from a place", evaluating the development of speed strength, both in the first and in the second experimental groups of subjects differed little from the beginning of the first to the end of the second stages of training; a significant difference in the results was observed by the end of the third and fourth stages of training; by the end of the third stage, this indicator of physical quality in the first experimental group on average reached the level of  $193.2 \pm 1.9$  cm, and in the second -  $182.5 \pm 3.6$  cm; by the end of the fourth stage of training in the first experimental group it reached the level of  $195.6$  cm. So the index of this physical quality in the first experimental group was significantly higher than in the second experimental group - by more than 5-7% (table 1).

In the control test "pull-up in hanging", evaluating the strength of arm flexors, there were no significant

differences between the results of the first and second experimental groups. In particular, the average number of pull-ups during all the main stages of training did not exceed: in the first experimental group -  $6.0 \pm 1.39$  and  $8.9 \pm 1.21$  times; in the second -  $6.4 \pm 1.27$  and  $7.2 \pm 1.41$  times (table 1).

According to the data of performing the control test "abdominal press", evaluating the functional essence of abdominal muscles, there were revealed non-significant differences between the results of the studied groups from the beginning of the first to the end of the second stage of training: the number of trunk lifts, during the mentioned stages, did not exceed: in the first experimental group -  $14.6 \pm 1.2$  and  $14.2 \pm 0.62$  times; in the second -  $13.2 \pm 1.64$  and  $15.7 \pm 1.26$  times. Significant differences were observed by the end of the third and fourth stages of training; in particular, by the end of the third stage of training, the subjects of the first experimental group performed this test exercise on average  $16.8 \pm 1.2$ , and by the end of the fourth stage -  $17.9 \pm 0.8$  times; the subjects of the second experimental group, at the same stages of training, performed the same task on average no more than  $13.5 \pm 0.70$  and  $13.2 \pm 0.71$  times (table 1).

The use of the author's method did not have a negative impact on the health of the participants, both in the first and second groups. The medical monitoring and analysis of health indicators confirmed the safety of the training methods used. Participants in both groups demonstrated stable physiological indicators corresponding to age and physical norms at all stages of the study.

**Discussions.** It is known that when teaching technical and tactical elements of a particular sports game, all the applied exercises are divided into several types [1, p. 2675]:

Training exercises, which include: a) general physical training exercises (GTP), designed for the development of basic physical qualities (quickness, agility, strength, endurance, flexibility); b) special physical training exercises (SPT), designed for the

development of special physical qualities; c) specially - preparatory; d) underwater exercises.

The main means of physical fitness, mostly contributing to the development of basic physical qualities include such natural motor skills as walking, jumping, running, exercises with the use of weights, mobile sports games, dosed loads performed on simulators, exercises borrowed from various sports.

To the main means of SPT, mostly contributing to the development of necessary physical qualities for this sport include: competitive exercises, performed in light conditions and in a gentle mode; exercises used as underpinning, preparatory.

Competitive exercises include motor actions that form the basis of the technique and tactics of the game in defense and offense.

Special preparatory exercises include combinations of motor actions with a different structure of coordination complexity, contributing to the holistic perception of the studied exercise.

The underwater exercises include motor actions simplified in terms of coordination, contributing to the separate study of the details of a technical technique or tactical action.

Technical training in sports games provides for the mastering of sports technique taking into account the improvement of its indicators such as: efficiency, effectiveness, stability, variability, economy. Therefore, the main means of technical training are: elements of each competitive exercise; combinations of competitive exercises; imitation exercises; exercises of related sports.

Tactical training in sports games provides: consolidation of known norms and general provisions of sports tactics in sports games; study of private provisions of soccer tactics; study of tactical techniques used by masters of the game; consolidation and updating of already mastered tactical skills; search for opportunities to update private techniques of soccer tactics (defensive, offensive tactics; tactics of individual and team actions, etc.).

In our research, the known stages of teaching soccer skills, as well as in other sports, also provided characteristic goals that contribute to the solution of specific pedagogical tasks [2, p. 136; 6, p. 2227; 8, p. 483].

The main goal of the first stage of training - familiarization with technical and tactical techniques of the game; the main task: the acquisition of experience of motor actions, increasing the indicators of basic physical qualities, to optimize the indicators of special physical qualities necessary for this sports game; formation of an idea of the game techniques; modeling of basic techniques in the conditions of a two-way training game.

The main goal of the second stage of training is learning and stabilization of technical techniques and tactical actions. The main tasks included clarification and perception of the studied technique as a whole, mastering it as a special motor skill.

The main goal of the third stage of training - improvement of technical techniques; tactics of using each of them in the conditions of realization of training games. The main tasks included improving the details of technical elements of the game reception.

The main goal of the fourth, in-depth stage of training - development of sustainable skills of the game; evaluation of the effectiveness of the use of technical techniques and tactical actions in the conditions of implementation of competitive games. Among the main tasks included the formation and manifestation of integrated skills, that is, the manifestation of sustainable skills for the merged execution of technical and tactical techniques of the game.

The use of the method of conjugate influence, along with the use of other, already known, methods of training in soccer as game and competitive methods, contributed to a rational combination of these goals and objectives, which clearly reflected in the improvement of interaction between technical and tactical training with coordination and physical training.

In addition, this methodology also provides for the rational use of such means as GPT, SPT, as well as preparatory and training exercises: "separately" or in their combination. Especially to maintain the optimal level of development of basic and special physical qualities.

Increase in the indices of basic physical qualities in the subjects of the first experimental group, at the second stage of training, when there is a systematic stabilization of details of technical techniques and tactical actions occurred through the use of underwater exercises in various combinations. As it is known, different kinds of motor actions are selected as underpinning exercises, which are less complex in terms of coordination and, therefore, are often performed for a longer period of time.

Significant progressive changes in the speed indicators of the subjects of the first experimental group were also observed by the end of the third stage of training, namely, at the stage of improving skills; agility - by the end of the third and fourth stages of training, namely, at the stages of in-depth training of game skills and improvement. The same changes were also observed in the speed-strength indicator by the end of the fourth stage of training. Consequently, at the stages of improvement and in-depth training of technical techniques, as well as tactics of their rational use, was carried out: firstly, in game situations,

especially in training games; secondly, mastering the details of the game technique and the development of stable-integrated skills of the game was carried out against the background of the use of preparatory and leading exercises, most often used at the third stage of training, that is, at the stage of improvement of motor skills. The increase in such special physical qualities as speed, agility and speed-strength qualities, in this same group, which are more noticeable at the fourth stage of training, i.e. at the advanced training stage, can be associated with the rational use of preparatory and imitation exercises that contribute to the development of coordination endurance.

The comparative growth of such indicators of physical qualities as speed, agility, speed-force, flexibility in the same subjects of the first experimental group, by the end of the fourth, in-depth mastering of skills, indicates the fact that out of all the variety of exercises, inherent to OFP and SPP, the complexes of exercises, promoting the development of such special qualities as speed, agility, had a significant efficiency. This was promoted by the long-term and continuously

integrated performance of not only speed, but also speed-force exercises, especially in the conditions of “conjugated”, combined performance of speed-force and tactical exercises of a soccer player.

### Conclusions.

1. In soccer, when using the conjugate impact method, there is an integrated use of general preparatory, special and underwater exercises, which helps maintain the optimal level of development of such special physical qualities as general endurance, agility and speed-strength qualities.

2. The method of conjugate influence in soccer promotes the interaction of physical training with the nominal technical and tactical training, especially when teaching beginner soccer players: the combination of types of physical and tactical training; the combination of types of physical, technical and tactical training; the consistency of such associations have a positive impact on the dynamics of development of basic physical qualities, especially at the stages of improvement and in-depth mastering of elements of technique and tactics of the game in soccer.

### References

- 1 Crisco J.J., Wilcox B.J., Beckwith J.G., Chu J.J., Duhaime A.C., Rowson S., & Greenwald R.M. Head impact exposure in collegiate football players // *Journal of biomechanics*. – 2011. – №44(15). – pp. 2673-2678. <https://doi.org/10.1016/j.jbiomech.2011.08.003>.
- 2 Dzhur O.Y., Sokolova O.V., Tyshchenko V.O., Novytska S.O., Bakanova O.F. An innovative approach to the methodology of improving the physical fitness of football players // *Physical education and sports* – 2021. – №1. – pp. 133-139. <https://doi.org/10.26661/2663-5925-2021-1-19>.
- 3 Joodaki H., Bailey A., Lessley D., Funk J., Sherwood C., & Crandall J. Relative motion between the helmet and the head in football impact test // *Journal of biomechanical engineering* - 2019. - №141(8). <https://doi.org/10.1115/1.4043038>.
- 4 Lebediev S., Zhurid S., Koval S., & Shalenko V. Control of physical and technical readiness of football players at the stage of specialized basic training // *Slobozhanskyi Herald of Science & Sport*. - 2022. - №1(26). – pp. 14-19. <https://doi.org/10.15391/snsv.2022-1.003>.
- 5 Lisenchuk H., Tyshchenko V., Leibo V., & Shekhovtsova K. Directions for improving the technology of current management in football // *Theory and methodology of physical education and sports*. - 2020. - №3. – pp. 31-37.
- 6 Nakonechnyi R., Khimenes K., Antonov S., Pityn M., Zadorozhna O., & Karpa I. Effectiveness of interactive tasks in tactical training of 11-12-year-old football players // *Journal of Physical Education and Sport*. - 2023. - №23(8). – pp. 2220-2229. <https://doi.org/10.7752/jpes.2023.08254>.
- 7 Nikolaenko V.V., Shamardin V.N. *Dolgosrochnaja podgotovka junyh futbolistov* // Put' k uspehu. – Kiev: Sammit–kniga, 2015. – 360 s.
- 8 Paisal P., Samsudin S., Setiawan I., & Rahman A. Development of a shooting training model for football players aged 14-17 years // *Retos: nuevas tendencias en educación física, deporte y recreación*. - 2024. - №59. – pp. 481-489. <https://doi.org/10.47197/retos.v59.108176>.
- 9 Platonov V.N. *Sistema podgotovki sportsmenov v olimpijskih vidah sporta* // Obshhaja teorija i ee prakticheskie prilozhenija: uchebnik (dlja trenerov). – Kiev: Olimp. literatura, 2015, – 680 s.
- 10 Polevoy G. Comprehensive development of physical qualities of football players in the preparatory period // *Retos: nuevas tendencias en educación física, deporte y recreación*. - 2024. - №57. – pp. 172-178. <https://doi.org/10.47197/retos.v57.105912>.
- 11 Riansoi Y., Tongnillpant N., Thammawong S., Ribeiro J., Zacca R., & Chainok P. Follow-Up Weekly Training Distribution and Accumulated Internal Load Effects on Young Football Players' Well-Being, Physical Fitness, and Technical Performance // *Sports*. - 2024. - №12(1). – p. 23. <https://doi.org/10.3390/sports12010023>.
- 12 Silva H., Nakamura F.Y., Beato M., & Marcelino R. Acceleration and deceleration demands during training sessions in football: a systematic review // *Science and Medicine in Football*. - 2023. №7(3). – pp. 198-213. <https://doi.org/10.1080/24733938.2022.2090600>.
- 13 Thomakos P., Spyrou K., Katsikas C., Geladas N. D., & Bogdanis G.C. Effects of concurrent high-intensity and strength training on muscle power and aerobic performance in young soccer players during the pre-season // *Sports*. – 2023. – №11(3). <https://doi.org/10.3390/sports11030059>.

- 14 Tsyupak Y., Tsyupak T., Shvay A., Gnitetsky L., Kovalchuk A., Tsyupak Y. Influence of Employment by Mobile Games on Indicators of Physical and Technical-Tactical Readiness of Young Football Players in the Preparatory Period // Physical Education, Sport and Health Culture in Modern Society. - 2018. - №2(42). – pp. 149–154. <https://doi.org/10.29038/2220-7481-2018-02-149-154>.

|  |   |   |
|--|---|---|
| <p><b>Хат-хабарларға арналған автор<br/>(бірінші автор)</b><br/>Саутов Рахмет Тюлимбаевич – педагогика ғылымдарының магистры, Қазақ спорт және туризм академиясы, Алматы қ., Қазақстан,<br/>e-mail: rakhmet@bk.ru,<br/>ORCID ID: <a href="https://orcid.org/0009-0007-5327-9251">https://orcid.org/0009-0007-5327-9251</a></p> | <p><b>Автор для корреспонденции<br/>(первый автор)</b><br/>Саутов Рахмет Тюлимбаевич – магистр педагогических наук, Казахская академия спорта и туризма, г. Алматы, Казахстан,<br/>e-mail: rakhmet@bk.ru,<br/>ORCID ID: <a href="https://orcid.org/0009-0007-5327-9251">https://orcid.org/0009-0007-5327-9251</a></p> | <p><b>The Author for Correspondence<br/>(The First Author)</b><br/>Sautov Rakhmet – Master of Pedagogical Sciences, Kazakh academy of sport and tourism, Almaty, Kazakhstan,<br/>e-mail: rakhmet@bk.ru,<br/>ORCID ID: <a href="https://orcid.org/0009-0007-5327-9251">https://orcid.org/0009-0007-5327-9251</a></p> |
|--|---|---|