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The relationship between the effectiveness of performing technical elements and indicators of static and dynamic balance in young acrobats 6-7 years old

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Abstract

Purpose: to determine the relationship between the performance of basic elements and indicators of static and dynamic balance in the training process of young acrobats 6-7 years.

Material and methods. The study involved 16 young acrobats at the stage of initial training (age 6-7 years). All parents of the participants gave written consent for the participation of children in the study. The study involved testing the technique of performing basic elements of sports acrobatics and assessing the static and dynamic balance of young athletes. The relationship between (swallow, shoulder blade, forward squat, wheel (sideways overturning), bridges) and static and dynamic equilibrium tests was determined. Spearman's rank correlation coefficient method was used as a method of statistical analysis.

Results. It is established that the largest relationship between the performance of basic elements and static balance in the basic exercises of young acrobats have: Romberg's test with the elements "Swallow", "Stand on the shoulders", "Bridge"; Biryuk test with elements "Swallow", "Wheel", "Bridge"; balance "Swallow" with elements "Swallow", "Wheel"; static equilibrium test with the elements "Swallow", "Rack on the shoulders", "Rolling forward with a squat", "Wheel". Reliable values of the correlation coefficient were established between the tests of dynamic balance and the basic elements of sports acrobatics in young athletes 6-7 years, namely: "Swallow", "Flip forward with a squat", "Wheel" and "Bridge". The analysis of special tests of static and dynamic balance in mastering the basic elements of acrobatics at the first stage of long-term training makes it possible to use them to determine the level of coordination capabilities of young athletes and further improve the use of acrobatic exercises.

Conclusions. A reliable relationship between the performance of basic exercises and indicators of static and dynamic balance in young acrobats at the initial stage of training. It is shown that the level of static and dynamic balance is of great importance for the assimilation and improvement of basic elements of technology by young acrobats 6-7 years. Static and dynamic balance tests can be used to individually build training programs and young acrobats. It is shown that sports acrobatics is a significant means of developing the balance of children 6-7 years.

Key words: young acrobats, primary education, basic elements, tests

Анотація

Черних Т., Мулик В., Мулик К., Скалій О., Островський А., Скалій Т. Взаємозв'язок між ефективністю виконання технічних елементів і показниками статичної та динамічної рівноваги у юних акробатів 6-7 років

Мета: визначити взаємозв'язок між показниками техніки виконання базових елементів та показниками статичної і динамічної рівноваги в тренувальному процесі юних акробатів 6-7 років.

Матеріал і методи. У дослідженні брало участь 16 юних акробатів на етапі початкової підготовки (вік 6-7 років). Всі батьки учасників дали письмову згоду на участь дітей в дослідженні. Дослідження передбачало проведення тестування з техніки виконання базових елементів спортивної акробатики та оцінки статичної та динамічної рівноваги юних спортсменів. Було визначено взаємозв'язок між (ластівка, стійка на лопатках, перекид вперед з упору присівши, колесо (переворот боком), міст) та тестів статичної й динамічної рівноваги. В якості методів статистичного аналізу застосовувався метод коефіцієнту рангової кореляції Спірмена.

Результати. Встановлено, що найбільший взаємозв'язок між показниками техніки виконання базових елементів та показниками статичної рівноваги у базових вправах юних акробатів мають: проба Ромберга з елементами «Ластівка», «Стійка на лопатках», «Міст»; проба Бірюк з елементами «Ластівка», «Колесо», «Міст»; рівновага «Ластівка» з елементами «Ластівка», «Колесо»; тест статичної рівноваги з елементами «Ластівка», «Стійка на лопатках», «Перекид вперед з упору присівши», «Колесо». Достовірні значення коефіцієнту кореляції встановлено між тестами динамічної рівноваги і базовими елементами спортивної акробатики у юних спортсменів 6-7 років, а саме: «Ластівка», «Перекид вперед з упору присівши», «Колесо» та «Міст». Проведений аналіз спеціальних тестів статичної і динамічної рівноваги при засвоєнні базових елементів акробатики на першому етапі багаторічної підготовки дає можливість використовувати їх для визначення рівня координаційних можливостей юних спортсменів та подальшого удосконалення у використанні зв'язок акробатичних вправ.

Висновки. Визначено достовірний взаємозв'язок між показниками техніки виконання базових вправ та показниками статичної та динамічної рівноваги у юних акробатів на початковому етапі підготовки. Показано, що рівень статичної та динамічної рівноваги має велике значення для засвоєння та удосконалення базових елементів техніки юними акробатами 6-7 років. Тести на статичну та динамічну рівновагу можуть бути застосовані для індивідуальної побудови програм тренувань та юних акробатів. Показано, що спортивна акробатика є значущим засобом розвитку рівноваги дітей 6-7 років.

Ключові слова: юні акробати, початкове навчання, базові елементи, тести

Аннотация

Черных Т., Мулик В., Мулик Е., Скалий А., Островский А., Скалий Т. Взаимосвязь между эффективностью выполнения технических элементов и показателями статического и динамического равновесия у юных акробатов 6-7 лет

Цель: определить взаимосвязь между показателями техники выполнения базовых элементов и показателями статической и динамической равновесия в тренировочном процессе юных акробатов 6-7 лет.

Материал и методы. В исследовании принимало участие 16 юных акробатов на этапе начальной подготовки (возраст 6-7 лет). Все родители участников дали письменное согласие на участие детей в исследовании. Исследование предусматривало проведение тестирования по технике выполнения базовых элементов спортивной акробатике и оценки статической и динамической равновесия юных спортсменов. Было определено взаимосвязь между (ласточка, стойка на лопатках, кувырок вперед из упора присев, колесо (переворот боком), городов) и тестов статической и динамической равновесия. В качестве методов статистического анализа применялся метод коэффициента ранговой корреляции Спирмена.

Результаты. Установлено, что наибольший взаимосвязь между показателями техники выполнения базовых элементов и показателями статического равновесия в базовых упражнениях юных акробатов имеют: проба Ромберга с элементами «Ласточка», «Стойка на лопатках», «Мост»; проба Бирюк с элементами «Ласточка», «Колесо», «Мост»; равновесие «Ласточка» с элементами «Ласточка», «Колесо»; тест статического равновесия с элементами «Ласточка», «Стойка на лопатках», «Кувырок вперед из упора присев», «Колесо». Достоверные значения коэффициента корреляции установлено между тестами динамического равновесия и базовыми элементами спортивной акробатике у юных спортсменов 6-7 лет, а именно: «Ласточка», «Кувырок вперед из упора присев», «Колесо» и «Мост». Проведенный анализ специальных тестов статической и динамической равновесия при усвоении базовых элементов акробатики на первом этапе многолетней подготовки дает возможность использовать их для определения уровня координационных возможностей юных спортсменов и дальнейшего совершенствования в использовании связей акробатических упражнений.

Выводы. Определены достоверная взаимосвязь между показателями техники выполнения базовых упражнений и показателями статической и динамической равновесия у юных акробатов на начальном этапе подготовки. Показано, что уровень статической и динамической равновесия имеет большое значение для усвоения и совершенствования базовых элементов техники юными акробатами 6-7 лет. Тесты на статическую и динамическую равновесие могут быть использованы для индивидуального построения программ тренировок и юных акробатов. Показано, что спортивная акробатика является значимым средством развития равновесия детей 6-7 лет.

Ключевые слова: юные акробаты, начальное обучение, базовые элементы, тесты

Introduction

Currently, there are several approaches to the methodology of teaching complex coordination exercises, the main of which is the use of holistic and separate methods that depend on the complexity of the exercises [1, 2]. Along with this, there is a statement [3, 4] that the mastery of the technique of individual elements depends on the level of development of motor skills that ensure their implementation. Therefore, you should pay attention to the motor skills that are inherent in performing each basic acrobatic exercise.

At the beginning of mastering an element of technique, you need to show "dexterity", ie the implementation of each element that is learned, because in the process of execution there are difficulties of various kinds associated with the violation of the structure of movements and efforts to be overcome. Over time, when forming a skill, when in general the structure of movements is mastered, it is already a question of coordination of movements, which provides: regulation of dynamic and spatio-temporal parameters of movements; static and dynamic equilibrium; rhythmic movements; orientation in space and time; intramuscular and intermuscular coordination; changes in the direction of movement and motor program of action [5]. The structure of coordination actions presented by Platonov [6] and other scientists [7, 8] is fully inherent in sports acrobatics, but also needs to be supplemented with regard to the basic performance of the exercise in the interaction of the athlete and the support area (treadmill and mother) and unsupported performance exercises.

Insufficient level of individual motor quality during exercise can be a factor limiting the effectiveness of motor actions. Thus, dexterity, as well as coordination of movements, significantly depends on motor (motor, muscular) memory, which is due to the properties of the central nervous system to memorize movements and perform them [9, 10].

The results of research [11–13] have been confirmed that sports acrobatics is a complex coordination sport. Competitive activity in sports acrobatics is associated with maintaining balance and rotation of the body with and without support. Sports acrobatics contains various technical elements: supports, racks, flights, throws, landings. The current level of achievements in sports acrobatics makes higher demands on the training of young athletes. As there is a significant rejuvenation of national teams in acrobatics, children begin to engage in acrobatics at an early age (6-7 years) and after 3-4 years participate in competitions of various levels. The

process of rapid change and rejuvenation of groups of initial training in sports acrobatics and the constant increase in the complexity of acrobatic exercises requires the latest approaches to the process of training athletes in the initial stages [11–13].

At the initial stage first of all mastering of structure of movements (both in static poses, and in dynamics of performance), and structure of efforts at the kept poses is required. Only after mastering the individual components of special poses is it possible to move to a dynamic effort during the performance, first of individual exercises, and then in combination. Therefore, there is a need to determine motor actions and motor qualities (due to individual muscle groups), as well as the level of their manifestation when performing a particular exercise.

Purpose: to determine the relationship between the performance of the basic elements and the indicators of static and dynamic balance in the training process of young acrobats 6-7 years.

Material and methods

Participants

The study involved 16 young acrobats at the stage of initial training, engaged in a comprehensive children's sports school №6 Slobidsky district of Kharkiv. The age of athletes was 6.5 ± 0.13 years. All parents of the participants gave written consent for the participation of children in the study.

The study was conducted in accordance with the WMA Declaration of Helsinki - Ethical Principles for Medical Research with Human Participation, 2013. The study protocol was approved by the Ethics Committee of the Kharkiv State Academy of Physical Culture. (The research was conducted in compliance with WMA Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects, 2013. The study protocol was approved by the Ethical Committee of Kharkov State Academy of Physical Culture).

Procedure

The study involved testing a set of basic exercises of sports acrobatics and assessing the static and dynamic balance of young athletes. The study also identified the relationship between the use of basic exercises and static and dynamic balance tests.

The test battery consisted of 5 basic exercises of sports acrobatics, the technique of which was determined by expert evaluation on a 10-point scale, which is given in table. 1.

Table 1

Criteria for evaluating the technique of performing basic elements of sports acrobatics

Points	Evaluation criteria
10	the exercise is performed without errors, with emphasis on each element of movement
9	the exercise is performed without errors, but one of the elements is indistinctly marked
8	the exercise is performed without errors, but several elements are indistinctly marked
7	the exercise is performed correctly, but there is an error that does not affect the structure of the movement
6	the exercise is done mostly correctly, but there are a few minor mistakes that somewhat distort the structure of the movement
5	the exercise is generally done correctly, but there is a gross error that distorts the structure of the movement
4	the exercise is mostly performed, but with a failure to perform in the cycle, stopping the movement and subsequent continuation
3	the exercise is performed with stops, comprehension of errors and subsequent reproduction
2	the structure of the exercise is completely broken, only some elements of the technique are performed in one of the cycles
1	the child cannot perform the exercise

Swallow. Starting position on one leg, the other set back 90 °, torso tilted forward, arms to the sides.

Rack on the shoulders. From the starting position lying on your back, hands down, palms on the floor, lift your legs and pelvis up. With the legs stretched up, focus your hands under your back. The rack on the shoulder blades can be performed from the stop by squatting backwards, from the saddle with straight legs by rolling backwards.

Rolling forward with a squat. Squatting from the stop, push off with your feet, bend your arms, tilt your head to your chest, leaning on your shoulders, grab your shins, group up and roll over.

Wheel (turn sideways). From the main rack lift the right leg to the side, arms to the sides. Put the right foot and, pushing off, make a swing with the left foot. Consistently first put the right, then left hand and go through the rack on his hands, legs apart. Get up first on the left, then the right leg. In order not to get out of the plane, put your hands on the line of the legs.

Bridge. Performed by leaning back from a standing position with legs apart and constantly stretching his arms to the support. It is possible to perform this element from a supine position. Simultaneously bending the legs and arms and placing them on the support, and then straightening them, perform the position of the cities.

The test battery for static and dynamic equilibrium assessment consisted of 5 samples.

Romberg's test is complicated: vertical posture of the body of the hand forward, feet on one line "heel-toe" - 10 s with open and 10 s with closed eyes. Allows you to assess the quality of coordination of the vertical position of the body, the level of

neuromuscular activity. Stability time (s) was estimated.

Biryuk test: vertical body posture with closed feet standing on tiptoes, arms up, eyes closed. Allows you to assess the level of formation of the skill of maintaining body balance in difficult conditions. The time (c) of maintaining the position of the body was recorded.

Equilibrium "swallow": standing on one leg, the other set back 90 °, torso tilted forward, arms to the sides, eyes closed. The time (c) of preservation of a pose was fixed.

Static equilibrium: standing on one leg, the other bent, and her heel touching the knee joint, the whole foot pressed to the shin of the supporting leg. Small fluctuations in the torso were not taken into account. The time (c) of preservation of a pose was fixed.

Dynamic equilibrium: stepping on the spot, young athletes performed 10 turns on the spot (360°) with simultaneous tilts of the head (30-35 °). Then you need to walk a 5-meter distance. The deviation from a straight line in centimeters (cm) was estimated.

Statistical analysis

Experimental data were processed using conventional methods of mathematical statistics [10]. When evaluating the technique of basic exercises of sports acrobatics and assessing the static and dynamic balance of young athletes, we used statistical indicators such as: arithmetic mean ($\bar{x}$), standard deviation (S) and coefficient of variation (V), the normality of the distribution of differences was determined by using the Chi-Square test.

Correlation analysis was used to determine the presence or absence of a relationship between the studied indicators. Because the analysis of correlation fields showed a monotonic nonlinear relationship between the indicators, we used the Spearman rank correlation coefficient (r), which allowed us to determine the degree of relationship between the data that do not comply with the law of normal distribution.

Mathematical data processing was performed using research programs Microsoft Excell's Data Analysis and SPSS-17.

Results

For successful mastering by athletes of basic exercises of sports acrobatics at a stage of initial preparation along with working off of technical actions it is necessary to pay attention and performance of special exercises for improvement of systems of an organism which are responsible for balance of a body of athletes. Increasing the ability of athletes to maintain body balance will significantly improve the efficiency of the training process of athletes.

Initially, the test scores were checked for compliance with the normal distribution of the Chi-Square test. It was determined that all indicators of testing of the analyzed sample of athletes correspond to the normal distribution ($p > 0.05$) in terms of asymptomatic significance and significance in the Monte Carlo test (table 2).

The basis of all types of acrobatics at the initial stage of training is the individual mastery of the basic elements of technology: swallow, stand on the shoulders, rolling forward with a squat, wheel (sideways turn), bridges. Our research identified preparatory exercises for learning individual elements, and established their correlation with psychophysiological indicators, the results of which are shown in table 3. Along with this, it was very important to establish the relationship (ie effectiveness) of each exercise for learning basic elements of technology. It was taken into account that for the effective use of the basic elements, special preparatory exercises must correspond to them in the structure of movements, the structure of efforts and the formation of a unified functional system to ensure its implementation.

Table 2

The results of the test "Chi-Square" for compliance with the normal distribution of testing indicators of young acrobats 6-7 years

Indexes	Chi-Square	df	Asymp. Sig.	Monte Carlo Sig.
Swallow, points	4.077	15	0.538	0.601a
Rack on the shoulders, points	3.024	15	0.576	0.614a
Rolling forward with a squat, points	3.566	15	0.438	0.501a
Wheel (turn sideways), points	3.671	15	0.685	0.734a
Bridge, points	4.012	15	0.512	0.618a
The Romberg test is complicated, s	8.236	15	0.314	0.457a
Sample "Biryuk", s	4.047	15	0.219	0.325a
Equilibrium "Swallow", s	16.582	15	0.453	0.541a
Static equilibrium, s	7.363	15	0.671	0.712a
Dynamic equilibrium, cm	7.482	15	0.218	0.315a

Note: a. Based on 10000 sampled tables with starting seed 299883525

Table 3

Indicators of technique of performing basic elements of sports acrobatics and the level of static and dynamic balance of young acrobats (n = 16)

Tests	$\bar{x}$	S	V
Swallow, points	6.2	0.91	15%
Rack on the shoulders, points	5.1	0.89	17%
Rolling forward with a squat, points	5.2	1.11	21%
Wheel (turn sideways), points	5.0	0.97	19%
Bridge, points	5.4	0.96	18%
The Romberg test is complicated, s	14.4	1.09	8%
Sample "Biryuk", s	5.3	0.81	15%
Equilibrium "Swallow", s	24.4	2.45	10%
Static equilibrium, s	11.4	1.86	16%
Dynamic equilibrium, cm	12.2	3.66	30%

The correlation analysis of the relationship between special exercises and tests that reflect the assessment of static and dynamic balance of young

acrobats in the initial training stage is presented in Table 4.

Table 4

Relationship between indicators of technique of performing basic elements and indicators of static and dynamic balance of young acrobats at the stage of initial training (n = 16)

№	Basic elements	Equilibrium tests				
		The Romberg test is complicated, s	Sample "Biryuk", s	Equilibrium "Swallow", s	Static equilibrium, s	Dynamic equilibrium, cm
1	Swallow, points	0.64	0.68	0.88	0.65	0.65
2	Rack on the shoulders, points	0.48	0.46	0.42	0.51	0.49
3	Rolling forward with a squat, points	0.31	0.40	0.36	0.77	0.75
4	Wheel (turn sideways), points	0.42	0.58	0.57	0.61	0.64
5	Bridge, points	0.48	0.51	0.42	0.51	0.56

Analyzing the results of the correlation, to determine the level of manifestation of qualities during the exercise, the swallow should be used as tests of static equilibrium, the coefficients of which were: Romberg test ($r = 0.64$), Biryuk test ($r = 0.68$), equilibrium "swallow" ($r = 0.88$), tests of static ($r = 0.65$) and dynamic ($r = 0.65$) equilibrium.

The stand on the shoulders with support under the waist involves getting out of the supine position due to motor actions with the feet in the position of the stand on the shoulders (ie the exercise consists of both dynamic movement and static holding of the stand) has the highest correlation with the static balance test ($r = 0.51$), which is divided into the time of readiness to perform the test and the

time of fixation of equilibrium and stabilization of stability.

Performing the exercise roll forward from the stop squatting has 2 components: the first - from a standing position, arms up - through the stop standing bent forward forward from a supine position, arms up; the second - from the stop squatting - roll forward in grouping in the position of the stop squatting. This exercise has a dynamic nature of execution, which does not involve static fixation of the position. Therefore, the quality of performance significantly correlates with tests of static ($r = 0.77$) and dynamic ($r = 0.75$) equilibrium.

Wheel exercise has a dynamic nature of performance, which requires additional (advanced) use of preparatory exercises related to reaching the

vertical position of the body and fixing the standing position (with the support of a trainer, leaning against a wall, etc.), and the provisions that apply when performing predominantly dynamic equilibrium ($r = 0.64$). Along with this, the average level of correlation of the exercise of the wheel, associated with static equilibrium performance Biryuk ($r = 0.58$), balance "swallow" ($r = 0.57$) and static balance test ($r = 0.61$).

The urban exercise also involves two stages of assimilation. Simplified involves from a supine position, arms up - bridge (legs straighten), return to the position of the legs apart, arms out to the side.

A more complex (basic) option is performed from a standing position, arms up, slowly tilt back (with the support of the coach) and accept the position of the cities. The assessment of static equilibrium is determined by using the Biryuk test and the static equilibrium test ($r = 0.51$), while the indicators of dynamic equilibrium during the execution of the bridge have more significant correlation indicators ($r = 0.56$).

Discussion

As far as we know, our study is one of the first in terms of determining the impact of static and dynamic equilibrium on the quality of performance of technical elements by young acrobats 6-7 years. We found a reliable relationship between the performance of basic exercises and the indicators of statistical and dynamic balance in young acrobats at the initial stage of training. Thus, the goal set in this study was achieved. In addition, the analysis of special tests of static and dynamic balance in mastering the basic elements of acrobatics in the first stage of long-term training makes it possible to use them to determine the level of coordination capabilities of young athletes and further improve the use of acrobatic exercises.

Recent scientific studies suggest that regular physical activity of the child, even at the recreational level, can be a significant contribution to the development of physical qualities and, above all, balance [14 – 16]. Also, many authors study the development of balance in children through the introduction of special coordination exercises [17, 18]. One of the areas of research is to study the influence of basic elements of technology on static and dynamic equilibrium in acrobatics [19]. At the same time, there are studies that report differences in body position when performing basic exercises in young athletes of different ages [20, 21]. We found the influence of the level of static and dynamic equilibrium on the quality of basic elements of

technique in young acrobats 6-7 years. These are relatively new facts, as far as we know. In addition, data were confirmed [21, 22] on the high impact of acrobatics on the development of balance in children 6-7 years.

At the initial stage of training, sports selection is aimed at highlighting the qualities and indicators that determine success in this sport. An important place is occupied by the selection of tests and samples that allow you to assess these qualities. Thus, a set of psychophysiological tests is used to predict success in various types of martial arts. In different types of struggle they include coordination of movements, and in shock martial arts - the speed of reaction to different types of stimuli [22].

Physical development is a leading factor in assessing the condition of athletes, forecasting the growth of sportsmanship and analysis of the effectiveness of training. Different indices can be used for this. The use of a battery of specific and nonspecific indices for the analysis of features of physical development of martial arts athletes is substantiated. indices allow us to assess the specific impact of training on the body of athletes. Simplicity, informativeness, validity and availability of indices allow to recommend their use in monitoring the functional state of athletes [23].

The problem of assessing the technique of performing any competitive exercise is a priority in any type of sports and professional activities [24, 25]. Its essence is that it is necessary not just to determine the movement of the body or its individual biokinematic components, but to carry out these actions with minimal energy costs.

We have considered this problem and its solution on the example of determining the level of mastering the basic elements of acrobatics at the initial stage of the training process using static and dynamic equilibrium tests. It is known that the basis of all types of acrobatics is the individual assimilation of the basic elements of such exercises as: "swallow", standing on the shoulders, rolling forward with a squat, bridges. One of the tasks of our study was to establish a correlation between the use of each exercise to master the technique of basic elements. Therefore, in the training process, it is advisable to use special training exercises, which should correspond to the structure of movement, the structure of efforts and mechanisms of formation of a unified functional system that ensures their implementation.

The solution of the tasks facing the athlete is carried out by performing certain movements related to the practical implementation of free motor actions, which are performed in accordance with the tasks of sports and the rules of competition. The main task of

the process of learning the technique of movements involves the development of effective methods that meet training plans and take into account the objectives of the lesson, information about the morphological structure of the organism, the laws of its functioning in development.

In this regard, our research has made it possible to determine the most effective for the use of various exercises through static and dynamic balance tests, which are most consistent with the basic exercises of novice athletes in sports acrobatics.

Conclusions

1. It is established that the largest relationship between the performance of basic elements and indicators of static balance in the basic exercises of young acrobats have: Romberg's test with the elements "Swallow", "Stand on the shoulders", "Bridge"; Biryuk test with elements "Swallow", "Wheel", "Bridge"; balance "Swallow" with elements "Swallow", "Wheel"; static equilibrium test with the elements "Swallow", "Rack on the shoulders", "Rolling forward with a squat", "Wheel". Reliable values of the correlation coefficient were established between the tests of dynamic balance and the basic elements of sports acrobatics in young athletes 6-7 years, namely: "Swallow", "Flip forward with a squat", "Wheel" and "Bridge". The analysis of special tests of static and

dynamic balance in mastering the basic elements of acrobatics at the first stage of long-term training makes it possible to use them to determine the level of coordination capabilities of young athletes and further improve the use of acrobatic exercises.

2. The reliable interrelation between indicators of technique of performance of basic exercises and indicators of static and dynamic balance at young acrobats at an initial stage of preparation is defined. It is shown that the level of static and dynamic balance is of great importance for the assimilation and improvement of basic elements of technology by young acrobats 6-7 years. Static and dynamic balance tests can be used to individually build training programs and young acrobats. It is shown that sports acrobatics is a significant means of developing the balance of children 6-7 years.

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Conflict of interest

The authors declare that there is no conflict of interest

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