

**METHODOLOGY FOR DEVELOPING FLEXIBILITY IN 7-8 YEAR OLD
GYMNASTICIANS**

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Abstract: The article discusses the scientific and theoretical foundations of the process of developing flexibility in 7-8-year-old gymnasts, age-specific anatomical and physiological characteristics, and issues of improving effective training methods. The study analyzes the results of a weekly training program, a step-by-step methodology, and pedagogical experiments aimed at developing flexibility. The proposed methodology has practical significance in that it significantly improves the physical fitness of young gymnasts.

Keywords: flexibility, sports gymnastics, 7–8-year-old children, physical qualities, static stretching, dynamic stretching, joint mobility, muscle elasticity, pedagogical experiment, technical training, physical development, methodology, functional indicators.

ENTRANCE

At the modern stage of development of sports, the increasing competition in the world sports arena increases the need for scientific substantiation and improvement of the process of training athletes. In particular, in complex sports such as gymnastics, which require high coordination, accuracy, muscle elasticity and a wide range of motion, the formation of the correct methodological approach from childhood is an important factor determining the future sporting achievements of young athletes. The current trends in the development of the global sports system show that the development of effective technologies for the formation and development of flexibility in the training of young athletes is a prerequisite not only for increasing the level of physical fitness, but also for reducing the risk of injuries and improving technical skills.

In gymnastics, flexibility is considered not only a physical quality, but also an adaptive indicator that determines the functional ability of an athlete to move. Studies show that insufficient development of flexibility significantly hinders the correct performance of gymnastic elements such as bending, turning, jumping, maintaining balance. Limited range of motion of muscles and joints can lead to technical errors, overstrain, and the risk of injury. Therefore, the scientific substantiation of the development of flexibility for 7-8-year-old gymnasts engaged in the initial training stage is considered an urgent pedagogical and sporting issue.

The importance of developing flexibility for children aged 7-8.

This age period is considered the most active period of physiological formation of the musculoskeletal system, high joint mobility, and the central nervous system - the period of variability and mastery. The natural flexibility potential of the pre-adolescent period creates a solid foundation for the subsequent easy mastery of complex technical elements. In the practice of leading countries in gymnastics, acrobatics and highly coordinated sports, this age is defined as the “golden age” of developing flexibility. Therefore, it is of particular importance to scientifically substantiate the methodological process aimed at developing flexibility at the age of 7-8, standardize loads, systematize static-dynamic stretching exercises, and teach complex movements in simplified versions.

A number of resolutions of the President of the Republic of Uzbekistan aimed at reforming the sports education system and accelerating the training of highly qualified athletes in Olympic and Paralympic sports (PQ-5279, PQ-449, PQ-127, PF-5924, etc.) emphasize the need to train

competitive personnel in artistic gymnastics. In addition, the adoption of regulatory documents on the norms of equipment and inventory, training loads, and medical supervision requirements for students engaged in state sports educational institutions creates a solid legal basis for the modernization of the training system for young gymnasts.

These reforms have put on the agenda tasks such as bringing the educational process in sports schools and specialized gymnastics departments into line with international standards, relying on modern training methods, organizing training in a person-oriented manner, and scientifically substantiating age-specific loads. Based on this, scientific research on improving the methodology for developing flexibility in 7-8-year-old gymnasts is distinguished by its practical and theoretical significance.

This scientific research is aimed at improving the methodology for developing flexibility in 7-8-year-old gymnasts engaged in the initial training stage, and its methodology is based on the principles of complex scientific-methodological approaches, consistent organization of experimental and test work, and multifactorial assessment of the quality of flexibility. The methodological foundations of the research are built on the combination of the theory of physical education, age physiology, sports training methodology, the laws of the development of movement qualities, and scientific and statistical analysis methods.

Methodology : The research design was carried out on the basis of a three-stage system: initial diagnostics, introduction of the experimental method, final evaluation and comparison. Each of these stages was aimed at in-depth study of the anatomical and physiological characteristics, level of psychological readiness and dynamics of physical development of 7-8-year-old children, and a systematic analysis of the factors influencing the formation of their flexibility was carried out. Children engaged in primary training groups in sports gymnastics were involved as the object of the study, and they were divided into control and experimental groups. The control group was engaged in the traditional training program, while the experimental group used the improved flexibility methodology.

The analysis of scientific and methodological literature played an important role in creating the theoretical foundations of the methodology. Scientific views on the physiological mechanisms of flexibility, joint mobility, muscle elasticity, and the functioning of the neuromuscular system, as well as research by domestic and foreign scientists, were deeply studied. Information on static, dynamic, active and passive stretching exercises aimed at expanding the range of motion, their impact on the level of flexibility with age served as the basis for the formation of the methodology. Also, the existing scientific experience on the system of tests used to assess flexibility, their practical effectiveness, level of accuracy, and suitability for age groups was considered.

Pedagogical observation was an important part of the study, and during the training process, children's general behavior, level of mastery, exercise technique, muscle stretch response, movement coordination, and the rate of mastery of technical methods were regularly recorded. Observations also made it possible to assess the adequacy of the content and load level of the exercises in the experimental program to the physiological capabilities of the children.

Anthropometric measurements (height, body weight, body proportions) were used to determine the dynamics of children's physical development and factors affecting their adaptive potential. During the physiological assessment, pulsometry, respiratory rate, and spirometric parameters were measured. These data were important for the correct distribution of training loads, compliance with safety principles, and prevention of overexertion. In particular, the level of adaptation of the cardiovascular system to the load was evaluated as an important indicator in the development of flexibility.

Pedagogical testing was used as the main diagnostic task to identify real changes in flexibility. The system of tests included parameters such as measuring the amplitude of joint movements, assessing the depth of back flexion, flexibility of the joints of the arms and legs, the degree of forward bending of the body, and the duration of maintaining a static position. The test results allowed for systematic monitoring of the effectiveness of training.

During the pedagogical experiment, an 8-week improved training program was introduced for the experimental group. The program consisted of the following stages: general warm-up exercises for 5-7 minutes; static stretching exercises for 10-15 minutes; dynamic stretching exercises for 10 minutes; in the main part - simplified versions of such elements as backbends, bridges, handstands, side rotations; in the final part, muscle relaxation and recovery exercises were performed. The volume and loads of the exercises were gradually increased in accordance with the age, gender, individual development rate and functional capabilities of the children. The main principles of the program were safety, gradualness, individualization, progressive increase in load, and focus on recovery.

For mathematical and statistical processing of the research results, the methods of calculating average values, standard deviation, analysis of variance, t-test, ANOVA and growth percentages were used. These methods allowed to confirm the scientific validity and effectiveness of the proposed methodology with clear statistical evidence. In particular, the levels of statistical significance (p-values) served as an important indicator in determining the differences between the experimental and control groups.

The main principles of the methodology - systematicity, sequence, age-appropriateness, individualization, reliance on functional adaptation, safety and continuous pedagogical monitoring - ensured that the practical results of the study were highly reliable. The development of flexibility through an integrative approach not only expanded the range of motion of muscles and joints, but also significantly improved the technical training, coordination, psychological stability and overall physical fitness of young gymnasts.

Results: The results of the study showed that the improved methodology aimed at developing flexibility in 7-8-year-old gymnasts has high efficiency in pedagogical practice. The data obtained on the basis of the initial diagnostics, experimental training and final evaluation stages confirmed significant changes in the general physical development of young gymnasts, muscle elasticity, joint mobility and elements of technical training.

First of all, the results of the initial diagnostic tests showed that the flexibility indicators of most 7-8-year-old gymnasts were average, and the amplitude of back bending, flexibility of the hip and leg joints, range of motion of the shoulder joints, and stability in the ability to maintain a static position were insufficient. It was also found that functional indicators (pulsometry, respiratory rate, speed of muscle reactions), although within the physiological norms for their age, did not reach the optimal level necessary for performing complex technical elements.

After the weekly training program proposed in the experimental phase was implemented, flexibility parameters improved significantly. Static stretching exercises helped to increase joint mobility, while dynamic stretching exercises served to rapidly develop the amplitude of movement. As a result of the gradual mastery of simplified versions of elements such as the bridge position, back bend, side rotation (cartwheel), and handstand, the children's technical training improved, muscle elasticity and joint flexibility significantly increased.

In the experimental group, the greatest changes were observed in the depth of backbend, range of motion of the shoulder and knee joints, and in the forward bend tests. An average improvement of 20-30% was noted, which clearly demonstrates the effectiveness of the improved methodology. Due to the increased flexibility of the hip and knee joints, the quality of

performing complex technical elements also changed - the accuracy, smoothness and stability of movements during the exercises increased.

Positive dynamics were also observed in physiological indicators. During the training, pulsometric analysis showed that the children's cardiovascular system adapted to the load, the respiratory rate stabilized to normal, and the oxygen supply to the muscles improved. This was an important factor in the safe performance of exercises, the prevention of stress, and the mastery of technical elements.

The results of pedagogical observations confirmed a significant increase in the technical training of young gymnasts. Members of the experimental group began to perform technical components such as the correct start and end of exercises, maintaining balance, and controlling body position much more qualitatively than the control group. During the exercises, additional sharp movements, excessive strain on the body decreased, and the risk of injury decreased.

Static stability tests (maintaining a bridge position, maintaining balance in a stretched position) also showed a 15-20% increase in the experimental group. This flexibility indicates not only an increase in the range of joint motion, but also an improvement in the control function of the neuromuscular system.

According to the results of mathematical and statistical analysis, the differences between the experimental and control groups were found to be statistically significant at the $p < 0.05$ level. Thus, the effectiveness of the proposed methodology is not accidental, but the result of consistent training and a scientifically based approach.

The study also found that young gymnasts showed increased interest in training, increased motivation, and strengthened psychological confidence. Stretching exercises enriched with game elements improved the emotional state of the children and contributed to the effective training process.

In general, the improved methodology allowed us to achieve the following results:

- a) 20-30% improvement in flexibility qualities;
- b) increased quality of execution of technical elements;
- c) expansion of the amplitude of movement of the joints;
- d) increased muscle elasticity;
- e) stabilization of functional readiness indicators;
- f) reduced risk of injuries;
- g) increased psychological motivation and self-confidence.

The results obtained show that the improved flexibility methodology developed for 7-8-year-old gymnasts has high practical effectiveness in the process of sports training and serves the comprehensive development of young athletes.

CONCLUSION

The results of the study showed that the improved methodology for developing flexibility in 7-8-year-old gymnasts has high efficiency in practice. Analytical and experimental work confirmed that flexibility is the main physical quality that determines the technical preparation of young gymnasts, and its proper development is the foundation for the safe and effective mastery of complex gymnastic elements.

During the study, a weekly training program aimed at developing flexibility, a set of static and dynamic stretching exercises, a system of gradual training of technical elements, and recovery exercises were systematically introduced. As a result of the use of this methodology, the amplitude of joint movements expanded, muscle elasticity increased, and movement accuracy and coordination improved, which significantly increased the athlete's overall physical fitness.

The results of the experimental group differed sharply from the control group, an increase in flexibility indicators by 20-30%, improved static and dynamic stability, and high-quality execution of technical movements confirm that the improved methodology is scientifically based and practically effective. The stabilization of physiological indicators indicates that the training loads were set in accordance with age and safety principles were strictly observed.

In addition, the enrichment of training with game elements and motivational approaches increased the emotional state of young gymnasts and their interest in training, which served as an additional pedagogical factor for better mastery of the exercises.

Based on the results obtained, the following general conclusions were drawn:

1. The most physiologically favorable period for developing flexibility is at the age of 7-8 , and a scientific and methodological approach adapted to this age provides high efficiency.
2. The improved technique significantly increases joint mobility, muscle elasticity, and technical training , resulting in improved performance of complex gymnastic elements.
3. Combining static and dynamic stretching exercises develops all components of flexibility and reduces the risk of injury.
4. Regular pedagogical observation, testing, and functional assessment allow for monitoring the training process and ensuring an individual approach.
5. Mathematical and statistical analysis confirmed the scientific validity of the methodology and showed that there were significant differences between the results of the experimental group and the control group.
6. The proposed methodology is of practical importance for sports schools and gymnastics departments **and** is an effective pedagogical technology that can be used in the process of training young gymnasts.

Thus, this study offers scientifically based methodological solutions for the comprehensive development of flexibility in 7-8-year-old children engaged in the initial stage of training in gymnastics. The methodology serves to raise not only physical qualities, but also technical, functional, psychological and coordination training to a qualitatively new level. The results obtained will serve as an important methodological basis for further improvement of the process of gymnastics training in the future and modernization of the training system for young athletes.

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