

EFFECTIVE MEANS AND METHODS FOR DEVELOPING FLEXIBILITY QUALITIES IN SPORTS GYMNASTICS

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Abstract. This article analyzes effective tools and methods for developing flexibility in artistic gymnastics. Flexibility is an important physical quality that determines a gymnast's joint mobility, the elasticity of the musculoskeletal system, and the ability to perform movements with a wide range of motion. In artistic gymnastics, the correct, aesthetic, and safe execution of complex technical elements depends on sufficient mobility of the shoulder girdle, spine, hip, and knee joints. The research results show that the regular use of flexibility exercises-dynamic stretching during the preparatory part of training and static and active stretching during the final part-helps improve joint mobility, perform technical elements with a greater range of motion, and reduce the risk of injury. Purposeful development of flexibility is an essential condition for improving the special physical and technical preparedness of young gymnasts.

Keywords: artistic gymnastics, flexibility, joint mobility, stretching exercises, static stretching, dynamic stretching, active stretching, muscle elasticity, young gymnasts, technical preparation, injury prevention.

Аннотация. В данной статье анализируются эффективные средства и методы развития гибкости в спортивной гимнастике. Гибкость является важным физическим качеством, определяющим подвижность суставов гимнаста, эластичность опорно-двигательного аппарата и способность выполнять движения с большой амплитудой. В спортивной гимнастике правильное, эстетичное и безопасное выполнение сложных технических элементов зависит от достаточной подвижности плечевого пояса, позвоночника, тазобедренных и коленных суставов. Результаты исследования показывают, что регулярное применение упражнений на гибкость — динамической растяжки в подготовительной части тренировки, а статической и активной растяжки в заключительной части — способствует улучшению подвижности суставов, выполнению технических элементов с большей амплитудой движений и снижению риска травматизма.

Целенаправленное развитие гибкости является необходимым условием повышения специальной физической и технической подготовленности юных гимнастов.

Ключевые слова: спортивная гимнастика, гибкость, подвижность суставов, упражнения на растяжку, статическая растяжка, динамическая растяжка, активная растяжка, эластичность мышц, юные гимнасты, техническая подготовленность, профилактика травматизма.

Introduction. Artistic gymnastics is one of the sports that requires complex coordination movements, a high level of physical fitness, and technical mastery. The quality of gymnastic performance directly depends on the athlete's level of development in strength, speed-strength abilities, balance, coordination, and flexibility. Among these qualities, flexibility occupies a special place because it enables athletes to perform movements with a wide range of motion, freely, and with correct technique.

Flexibility is determined by joint mobility, the elasticity of muscles and tendons, and the functional condition of the neuromuscular system. In artistic gymnastics, the mobility of the shoulder girdle, spine, hip, knee, and ankle joints is of great importance in mastering complex technical elements.

For example, when performing bridges, splits, jumps, turns, and acrobatic exercises, sufficient flexibility increases the athlete's range of motion and helps prevent technical errors.

The development of flexibility in young gymnasts should be systematically organized from the initial stages of training. This is because, during childhood and adolescence, the musculoskeletal system is relatively adaptable, and there is a greater potential for effectively improving joint mobility.

However, incorrect or excessive exercise may negatively affect the musculoskeletal system. Therefore, it is important to plan stretching exercises according to the athlete's age, individual abilities, and level of preparedness.

In artistic gymnastics, flexibility is developed through static, dynamic, active, and partner-assisted stretching exercises. The purposeful application of these methods during different parts of a training session helps prepare the muscles for activity, expand the range of motion, and improve recovery processes.

Therefore, the scientific and methodological study of effective tools and methods for developing flexibility in artistic gymnastics is one of the relevant issues in modern sports training.

Purpose of the Study: To identify effective tools and methods for developing flexibility in young athletes engaged in artistic gymnastics, adapt them to the training process, and develop practical and methodological recommendations.

Objectives of the Study: The objectives of this study are to examine the theoretical and practical significance of flexibility in artistic gymnastics; identify the factors influencing flexibility development in young gymnasts; select effective stretching exercises and methodological techniques; develop procedures for their purposeful application in the training process; and evaluate the effects of flexibility exercises on athletes' physical and technical preparedness.

This study proposes a comprehensive methodological approach aimed at developing flexibility in young artistic gymnasts. Within this approach, exercises designed to improve the mobility of the shoulder girdle, spine, hip, knee, and ankle joints are selected in accordance with the technical characteristics of gymnastic elements.

The main novelty of the study lies in the differentiated application of flexibility exercises according to the structure of the training session. Specifically, dynamic stretching exercises are recommended in the preparatory part to prepare the muscles for active work; active flexibility exercises are used in the main part to support the performance of gymnastic elements; and static stretching exercises are recommended in the final part to promote muscle relaxation and increase the range of motion.

In addition, a system of exercises was developed based on combining flexibility exercises with core-strengthening and balance exercises to improve joint stability. This approach helps young gymnasts perform large-amplitude movements safely, master technical elements more effectively, and prevent excessive stress on the musculoskeletal system.

Table 1.

Proposed Exercise System for Developing Flexibility

<i>Exercise part</i>	<i>Applied method</i>	<i>Sample exercises</i>	<i>Main direction</i>	<i>Expected effect</i>
Preparatory part	Dynamic tension	Waving the legs forward, sideways, and backward; arm rotation; torso rotation.	Warming up muscles and preparing joints for work	Mobility preparation and reduction of injury risk
Body	Active stretching	Holding the leg high; maintaining shoulder positions; controlling the body in a bent position.	Active flexibility and body control	Performing gymnastic elements at high amplitude
Main body	Strength and flexibility exercises	Holding on the bridge; body exercises; light support positions	Body and joint stability	Increasing safety in high-amplitude movements
Final part	Static elongation	Shpagat; half-shpagat; forward bend; shoulder and thigh muscle stretching	Relaxing muscles and increasing joint mobility	Improve recovery and develop flexibility
Individual training	Partner stretching	Light stretching exercises under the supervision of a trainer or partner	Account for individual limitations	Gradual expansion of the range of motion

The exercise system presented in the table makes it possible to integrate flexibility development into all parts of the training process. The training load should be adjusted according to the athlete's age, level of preparedness, and individual anatomical capabilities. Exercises should be performed gradually and under supervision, without forcing movements through pain.

Scientific Novelty of the Study: This study proposes a comprehensive exercise system aimed at developing flexibility in young athletes engaged in artistic gymnastics. The system includes interconnected exercises designed to improve the mobility of the shoulder girdle, spine, hip, knee, and ankle joints. The exercises are selected with consideration of the technical structure of gymnastic elements and the individual physical abilities of athletes.

The novelty of the study lies in the purposeful distribution of flexibility-development exercises across different parts of the training session: dynamic stretching exercises are used in the preparatory part, active flexibility exercises in the main part, and static stretching exercises in the final part. This sequence helps prepare the muscles for the main workload, increase the range of motion, and improve post-training recovery.

In addition, an approach based on combining flexibility exercises with strength and balance exercises to ensure joint stability is substantiated. This approach helps young gymnasts safely perform large-amplitude movements, reduce technical errors, and prevent excessive stress on the musculoskeletal system.

The study recommends using a set of control exercises to assess flexibility by determining the mobility of the shoulder girdle, spine, and hip joints. This monitoring system makes it possible to track athletes' individual progress over time and adjust training loads accordingly.

Conclusion. The development of flexibility in artistic gymnastics is one of the essential conditions for improving the special physical and technical preparedness of young gymnasts.

Flexibility increases the mobility of the shoulder girdle, spine, hip, knee, and ankle joints, enabling gymnasts to perform technical elements with a greater range of motion, aesthetic quality, and correct technique.

The article substantiates the appropriateness of using dynamic, active, static, and partner-assisted stretching exercises in a comprehensive manner to develop flexibility. The use of dynamic stretching exercises in the preparatory part of the training session prepares the muscles and joints for the main workload. Active flexibility exercises in the main part develop the ability to independently control body position. Static stretching exercises in the final part help relax the muscles, increase the range of motion, and support the recovery process.

The proposed exercise system demonstrates the need to combine flexibility exercises with core-strengthening and balance exercises. This contributes to improved joint stability, safer performance of large-amplitude movements, and a reduced risk of injury. The effectiveness of the methodology depends on planning the exercises according to the age, physical development, level of preparedness, and individual capabilities of young gymnasts.

In conclusion, flexibility development should not be organized as a separate component of training; rather, it should be integrated with all stages of artistic gymnastics preparation. In the future, evaluating the effectiveness of the proposed methodology through pedagogical experiments, specialized control tests, and mathematical-statistical analysis will make it possible to identify optimal methods and training-load standards for developing flexibility in young gymnasts.

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