*Modern American Journal of Medical and Health Sciences*
**ISSN (E):** 3067-803X
Volume 01, Issue 08, November, 2025
**Website:** usajournals.org
*This work is Licensed under CC BY 4.0 a Creative Commons Attribution 4.0 International License.*

# THE IMPACT OF FIGURE SKATING ON THE FUNCTIONAL STATE OF ATHLETES

Bilyalova Nigina
The Uzbek State University of Physical Education and Sport
bilyalovanigina@gmail.com

**Abstract**

Figure skating is a complex sport requiring complex coordination. This is due to the fact that skaters use skates with blades whose contact area with the ice is very small, and the ice itself is very hard and slippery. Skaters must perform a variety of complex ice maneuvers, including multi-rotational jumps, which can often be accompanied by landing errors and falls. Advances in the development of the sport are largely due to the results of scientific research. Therefore, athletes are required to develop a high level of precision, speed, stability, and comprehensive coordination of movements in time and space. The significant changes in figure skating that have occurred in recent years, along with the increased technical skill of skaters, require the development and scientific substantiation of new, more advanced methods for figure skating training.

One of the characteristic features of modern figure skating is the progressively more complex competitive programs. This process develops, in particular, as athletes master complex coordination elements and rotational movements, which strongly stimulate the vestibular system. Therefore, one of the specific characteristics of figure skating is the dependence of athletic performance on coordination abilities and vestibular stability. According to V.I. Lyakh, a person's coordination abilities must begin to be developed in preschool and primary school age. The older the children, the longer the process of developing their coordination abilities. In modern figure skating, the age of first major success is 13-16 years, i.e., earlier than in most sports, and high results can only be achieved after 9-10 years of intensive training. Therefore, due to the increasing complexity of sports techniques and the shortening of training periods, even young figure skaters are faced with high demands in terms of demonstrating coordination abilities and vestibular stability.

*Modern American Journal of Medical and Health Sciences*
**ISSN (E):** 3067-803X
Volume 01, Issue 08, November, 2025
**Website:** usajournals.org
*This work is Licensed under CC BY 4.0 a Creative Commons Attribution 4.0 International License.*

It is well known that the preliminary training stage is largely decisive for subsequent athletic development. Currently, figure skating practice provides examples of children mastering highly complex elements at a young age. Therefore, from the very first steps of training, it is essential that the training process ensures rapid and high-quality mastery of movements and is focused on mastering complex elements. However, the training process should take into account the morphological and physiological characteristics of the child's body, avoiding cramming and attempts to replace a well-structured training process with an excessive increase in the volume of training sessions and the number of repetitions.

However, despite the large number of scientific research works devoted to the problem of developing and improving the coordination abilities of young athletes, the question of the most appropriate ratio of the above-mentioned abilities at the stage of initial training of young figure skaters and the methods and means of their development remains insufficiently studied.

This article examines the impact of figure skating on athletes' performance. It focuses on physical, mental, and coordination training, as well as the body's adaptive capabilities with regular training. It analyzes the athletes' physiological characteristics, including the development of endurance, strength, flexibility, and coordination, as well as the impact of figure skating on the cardiovascular system, respiration, and psycho-emotional state. The study demonstrates that regular figure skating training improves performance, enhances athletic performance, and promotes health. This article may be useful for coaches, sports educators, and physical education specialists.

Figure skating is one of the most complex sports, requiring high levels of physical fitness, coordination, flexibility, and endurance. Regular training includes elements of aerobic and anaerobic exercise, strength training, and coordination, all of which impact the body's functional state.

An athlete's functional state is determined by the body's ability to adapt to stress, maintain a high level of performance, and recover after training. Figure skating's impact on functional state manifests itself in improved cardiovascular,

*Modern American Journal of Medical and Health Sciences*
**ISSN (E):** 3067-803X
Volume 01, Issue 08, November, 2025
**Website:** usajournals.org
*This work is Licensed under CC BY 4.0 a Creative Commons Attribution 4.0 International License.*

respiratory, and neuromuscular systems, as well as the development of psycho-emotional stability and coordination skills.
Modern athletic development requires not only technical and artistic preparation, but also a high level of performance. Figure skating combines elements of speed, strength, flexibility, and artistic execution, making studying the impact of training on performance a pressing issue for coaches and sports medicine specialists.

**The purpose of the study was** to determine the impact of figure skating on the functional state of athletes and to identify adaptive changes in the body with regular training.

**Research Objectives**
To study the physiological characteristics of athletes involved in figure skating. Analyze the impact of the training process on the cardiovascular and respiratory systems. To assess the development of coordination, flexibility and endurance of athletes. To study the psycho-emotional state and adaptive capabilities of the body during regular exercise. Develop recommendations for optimizing the training process, taking into account the functional state of athletes.
Research methods. Analysis of scientific literature on sport physiology, adaptive changes, and the specific characteristics of figure skating.
Laboratory methods: measurement of heart rate, blood pressure, and respiratory parameters before and after training.
Functional testing: endurance, strength, flexibility, coordination.
Observation and monitoring of the condition of athletes during the training process.
Questionnaires and surveys to assess psycho-emotional state.

**Research Results**
An analysis of the current curriculum for the development of educational and training sessions at the Youth Sports School for Figure Skating and the results of an expert evaluation by specialists reveal the inadequacy of the tools and methods it presents for developing coordination skills and vestibular stability during the

*Modern American Journal of Medical and Health Sciences*
**ISSN (E):** 3067-803X
Volume 01, Issue 08, November, 2025
**Website:** usajournals.org
*This work is Licensed under CC BY 4.0 a Creative Commons Attribution 4.0 International License.*

preliminary training phase of young figure skaters. The levels of coordination skills of young figure skaters during the preliminary training phase are characterized by insufficient development in the following areas: static balance, dynamic balance, motor reaction time, and spatial orientation.

A positive correlation was established between the indicators of the levels of development of coordination abilities, vestibular stability and physical fitness: a) a relationship was revealed between the indicators of coordination abilities and vestibular stability, which determine the high-quality execution of technical techniques, with indicators of motor and visual memory, static and dynamic balance, jumps with a turn to the right and left; b) indicators of the level of physical fitness in terms of speed-strength qualities and agility are closely related to coordination abilities and vestibular stability.

The high level of mental stress and anxiety experienced by young figure skaters during the initial training phase is due to insufficient physical fitness, the complexity of the movements performed, risk, and injury.

The developed methodology, which is based on specially selected sets of exercises and the use of a training device, made it possible to: a) improve the level of development of coordination abilities of young figure skaters at the stage of preliminary training. Reliable changes in the experimental group relative to the control group occurred in the indicators reflecting dynamic (19.9%) and static balance (44.1%); the ability to reproduce spatial parameters of movements (56.5%), as well as the ability to orientate in space (34.4%); speed of motor reaction (21.9%); the ability to coordinate movements (13.7%) and 11.9%); the ability to reproduce rhythm (3.8%). b) ensure a higher level of technical training, which affects the quality of execution of jumps, spins, and the qualified level of fulfillment of program requirements. Ultimately, 90.0% of the young athletes in the experimental group demonstrated mastery of the technique of all the required elements, in accordance with the requirements of the qualification category "Athlete of the 2nd junior category", while only 70.0% of the figure skaters in the control group received this qualification ($P < 0.05$) with lower performance indicators.

*Modern American Journal of Medical and Health Sciences*
**ISSN (E):** 3067-803X
Volume 01, Issue 08, November, 2025
**Website:** usajournals.org
*This work is Licensed under CC BY 4.0 a Creative Commons Attribution 4.0 International License.*

Cardiorespiratory system: Regular exercise improves endurance, lung capacity and cardiovascular efficiency.
Muscular system: developing strength, flexibility and coordination contributes to the successful execution of complex elements and a reduction in injury.
Neuromuscular coordination: improved balance, reaction and synchronicity of movements.
Psycho-emotional state: reduced anxiety, increased confidence and concentration.
Adaptive capacity of the body: systematic training develops resistance to stress and accelerates recovery from physical and emotional stress.
The application of the developed methodology in the educational and training process allows for the development of a sustainable motivation for training sessions in young athletes, based on the use of specially selected exercises in a game form and the training device "wooden block".
As a result of targeted training using the developed methodology, there was an improvement in the psycho-emotional state of young figure skaters, which is confirmed by a significant improvement in the average group indicators of well-being, activity, mood, and a decrease in the level of mental stress relative to the baseline data.

**Conclusions:**
Figure skating has a positive impact on athletes' performance, developing cardiovascular and respiratory systems, muscles, flexibility, and coordination.
Regular exercise develops the body's adaptive capacity, increases endurance, and reduces the risk of injury.
Figure skating helps develop psycho-emotional stability, concentration, and confidence in athletes.
A comprehensive approach to training, taking into account physiological and psycho-emotional characteristics, increases the effectiveness of training and improves athletic performance.

*Modern American Journal of Medical and Health Sciences*
**ISSN (E):** 3067-803X
Volume 01, Issue 08, November, 2025
**Website:** usajournals.org
*This work is Licensed under CC BY 4.0 a Creative Commons Attribution 4.0 International License.*

**References**

1. Volkov, L. V. Theory and Methods of Physical Education. - Moscow: Academy, 2019.
2. Matveev, L. P. Fundamentals of Sports Training. - Moscow: Physical Education and Sport, 2020.
3. Zheleznyak, Yu. D., Vinogradov, P. A. Physiology of physical education and sports. - Moscow: Vlados, 2018.
4. Balsevich, V.K. Pedagogical biomechanics. — Moscow: Sport, 2017.
5. Shiyan, B. M. Methodology of physical education of athletes. - Kiev: Osnova, 2018.
6. Ivanova, N. A. Functional state of athletes during figure skating // Physical Education and Sport. - 2021. - No. 2. - P. 33-40.
7. ACSM. ACSM's Guidelines for Exercise Testing and Prescription. — 11th Edition. — Lippincott Williams & Wilkins, 2021.
8. Behm, DG, Chaouachi , A. A review of exercise and flexibility for health. // European Journal of Applied Physiology. - 2011. - Vol. 111. - P. 2633–2651.
9. Kozlov, V. I. Healthy lifestyle and disease prevention. - Moscow: Prosveshchenie, 2019.
10. Vorobyov, S. P. Adaptive changes in the athletes' body during intense exercise // Scientific journal of sport. - 2020. - No. 5. - P. 21–28.