PECULIARITIES OF PERFORMING BALANCE EXERCISES IN COMPLEX MOVEMENT COORDINATION SPORTS

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Abstract
Complex coordination sports require a high degree of balance. Because the quality of mastering the exercise program and achieving high-level results depends on the level of development of balance.

Keywords: Balance exercises, dynamic exercises, rhythmic gymnastics, jumps, exercises in pairs.

Balance exercises are divided into dynamic, static and mixed types, as well as object and object balance. A mixed type of balance includes movements in which the movement ends in a stable static position.

Static exercises are characterized by maintaining a body position for 2-4 seconds, for example, standing on the hands . Dynamic exercises are characterized by keeping the body position in a certain space while performing any movement.

Figure skating is characterized by mixed exercises. Cyclical movements prevail in this. This type of sport has a great impact not only on the development of the movement apparatus, but also on the emotional system of the body. A large number of accelerations and decelerations, bending and rotation, and the complexity of maintaining balance in a small area increase the sensitivity of body movement and position analysis and develop the vestibular apparatus.

Figure skating is characterized by a large number of rotational movements, changes in body position and direction of movement. This puts high demands on the vestibular analyzer.

One of the important tasks at the initial stage of training figure skaters is the formation of stable and reliable balance. Children distinguish the feeling of muscles well, even separate, technically complex exercises (spinning and jumping) are completely available to them.

In a standing position, figure skaters have less head tilt compared to other professional sportsmen. On the ice, highly skilled figure skaters perform simple elements several times even with their eyes closed. This indicates the accuracy of maintaining balance.

In diving and figure skating, the vestibular analyzer plays a very important role. He participates in determining the highest point of flight during the exercise. A jumper must not only know the number of turns, but also clearly distinguish their parts. All this information is conveyed to the brain through the vestibular apparatus, or rather the semicircular canals.

Most jumps are performed from the starting position, which requires a highly developed sense of balance: standing with the back (standing on the edge of the projectile, standing with the back to the water, standing with the support on the front of the heel), as well as jumping on the hands.

Athletes perform handstand jumps only from heights (from heights of 3, 5, 7.5, and 10 meters). But often, even skilled divers do not achieve good results in handstand jumps. The main reason for this is the inability to perform a high-quality ascent to a standing position and the inability to maintain balance during the required time, not less than 3 seconds, according to the competition conditions. (L.Z. Gorokhovsky, 1988).

in rhythmic gymnastics varies dramatically from the simplest (standing on one leg with the other forward) to the more complex (balancing on tiptoes, standing on chest, etc.). (L.A. Karpenko, 2003). They perform a universal task, serve as the basis for mastering extremely complex balances, and are an important condition for the technically accurate performance of many exercises that are not related to balances. A characteristic feature of their execution is the alternation of balances consisting of a short-term stop and an insignificant stop. Therefore, the greatest load falls on the muscle flexors of the heel.

A relatively new structural group of movements are semi-acrobatic exercises. Such exercises include standing on the shoulders, standing on the chest, standing on one hand, standing on two hands, etc. They are usually performed in combination with other movements, turns and jumps.

Exercises in balance are complicated by failure of one of the receptors, expansion or contraction of the support area, performing a complex of exercises. As the athlete's skill level increases, the amount of time he can balance with his eyes closed increases. And at the same time, 42% of errors in highly skilled gymnasts are related to the violation of the quality of balance performance in free exercises.

Handstand is the most important element of sports gymnastics. It can be an independent element, or a connecting link in combinations. Many gymnastic exercises cannot be done without it. (Yu. V. Menkhin).

Maintaining balance is influenced by the level of development of physical qualities, body length and weight, functional condition of analyzers, place of support, position of hands, height at which balance is performed, and other similar factors.

Single-arm exercises performed on a narrow and high support for the task of balance require special skills.

As noted by V.N. Dolinsky, there are different methods of maintaining balance on fixed and moving supports:

- on a rigid support (bruch, solo, free exercises) control is carried out at the expense of active joints located close to the support;
- the control point in the trunk and buttocks plays a key role in controlling stability in the moving support (ring), which forces athletes to implement an additional rigid system.

The average coefficient of stability is higher among the students of the circus school than among the members of the national gymnastics team. Comparative analysis shows that the means of improving the balance function used in the training of circus artists is more effective than the exercises used in gymnastics for the same purpose.

Issues related to maintaining balance during pair group exercises were considered by a large group of experts in sports acrobatics. (V.N. Boloban, V.P.Korkin, G. Ya. Sokolov, A.P. Alyabyshev). The main attention is focused on the study of the factors that ensure the stable balance of partners in such forms of double group acrobatics, but, unfortunately, the issues of teaching and learning effective methods of handstand training and its control have not been clearly analyzed.

One of the requirements for the technical training of acrobats is maintaining stability.

In double-group forms, static standing position, pyramid, support, and speed elements are dominated by exercises related to keeping the last position. Therefore, the performance skills of the partners are directly related to the technical training of the high acrobat.

The main component of the acrobat's work is maintaining balance on supports in various conditions.

The biggest challenge for a top acrobat is mastering hand balance exercises. Technically correct execution of standing postures is characterized by the accuracy of acceptance of the given position and the consistency of recording it for a period of not less than 3 seconds.

According to V.P. Korkin, the lightness and stability of recording depends on three factors: the ability to accurately perceive a given position, to stand firmly in that position, and to be able to maintain balance.

The ability to catch the balance is acquired very slowly and only by repeating the standing postures many times.

Currently, individual training of a top acrobat should include "stand-up" training as one of the parts of special movements training. (G. Ya. Sokolov, A. P. Alyabyshev, 1988, etc.).

"Standing" training is a part of technical training and is a multi-stage process of teaching structured group standing exercises using various training tools. (V.N. Boloban, 1988).

In the initial stage of preparation, the upper partner's insufficient mastery of handstand not only prolongs the period of teaching this element in pairs, but its consequences are also reflected in the technique of mastering the complex and extremely complex exercises of the program and the growth of the athlete's skills.

When standing on the paws, the body takes a vertical position with the head down. The base area will not be very large. The base area consists of the base surface of the pawls and the area between them. In the upper part of the joints, the weight falls on all the muscles of the shoulders and paws. In particular, great pressure is felt on the back and chest muscles. Breathing becomes difficult when doing standing exercises on the paws.

All muscles are involved in keeping the body segments in relation to each other.

Maintaining balance provides postural reflexes that are formed under the influence of receptors of the neck muscles and the vestibular apparatus. They are important during many exercises. Therefore, standing on the paws is easier when tilting the head back. As a result, the tone of the muscles that bend the shoulders increases.

The unusual position of the gymnast's body complicates the work of the cardiovascular system. But as a result of the increase in physical fitness, the effect of this condition on the blood vessels improves. This leads to a decrease in blood flow to the head and upper body.

Summarizing the above, it can be said that performing exercises in the "inverted position" will undoubtedly benefit the body's systems and have a healing effect.

Standing on shovels is one of the most relaxing and restorative exercises for the nervous system. Such exercises regulate human growth and normalize blood circulation.

Standing on the head. When performing this exercise, the brain is supplied with blood. This improves mental ability, eyesight, hearing, has a positive effect on the blood-vascular and nervous system, improves sleep and appetite.

Handstands strengthen arm muscles, torso and legs. A person performs actions that require precision, speed and strength more efficiently.

In the science of biomechanics, there are stable, unstable and limited stable forms of equilibrium. For gymnastics and acrobatics, the last of the forms listed above are characteristic. Their use requires different complex skills from athletes.

Three areas of balance (stability) are distinguished:

- body posture recovery area;
- body position storage area;
- optimal stability area of the body

So, the smaller the base area, the more difficult it is to balance. At the same time, excessive opening of the legs while balancing on the hands makes the process of performing the exercise difficult, despite the large area of support. This process will be related to the distribution of the force directed at holding the weight.

While balancing on the hands, the body should take a strong correct position. In this case, all the pressure falls on the bones of the skeleton in a vertical direction, and the muscles of the trunk only hold it.

In the work of L.P. Matveev (15), the balance in standing on the hands is maintained with the help of fine movements in the shoulder joints in the stable position of other parts of the body.

Working with the paws plays an important role in maintaining balance in the hands, stability is maintained by pressing the support with the paws.

In various situations, even more complex biomechanical conditions are created as ways to improve the ability to maintain balance. This is aimed at reducing the area of the support, increasing the height of the support, giving the support a flexible state and reverse movement. While researching the factors affecting the body system and stability, V. N. Boloban came to the conclusion that the main factor is the insufficient physical fitness of the participants. Below are the factors that affect the body system and stability:

- complexity of training and competition program;
- mistakes in execution technique;
- perform balance on a mobile support;
- transition from dynamic balance to static balance;
- limited visual control, etc.

Despite the complex biomechanical conditions of handstand balance, technically correct performance of the exercise does not require a lot of physical effort and energy from the participants.

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