

**Conclusions.** The influence of sports dance classes on the development of physical qualities of young athletes at the preliminary basic training stage has been experimentally confirmed. The improvement of the results in the experimental group compared to the results of the control group was determined, which confirms the effectiveness of the use of the modified complex in the educational and training process of sports dance athletes.

**The perspective of further research:** In the future, it is planned to use the modified complex and its implementation in the educational and training process of athletes in sports dances at the specialized basic training stage.

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#### METHODS OF DEVELOPING FLEXIBILITY, COORDINATION, AND ENDURANCE IN PHYSICAL EDUCATION CLASSES

*In physical culture, there are many physical qualities that play an important role in the development and maintenance of human health. They include characteristics such as strength, endurance, flexibility, coordination and much more. In this lecture we*

will look at the definition and classification of physical qualities, as well as their properties and effects on the body. We will also discuss methods and principles for developing these qualities, which will help us achieve better results in physical activity and improve overall fitness. Human physical qualities are the body's ability to perform various physical actions. They are determined by heredity, age, gender, lifestyle, and training. Physical qualities include aspects such as strength, endurance, flexibility, speed, coordination, and balance. Physical qualities are characteristics that determine the body's abilities and capabilities in performing physical exercises and tasks. Each physical quality has its own characteristics and affects various aspects of physical activity. The development of physical qualities plays an important role in the development and maintenance of the health of the body. It helps strengthen muscles, improve the functioning of the cardiovascular system, increase endurance and general physical fitness. A person's physical qualities play an important role in his overall health and fitness. These include aspects such as strength, endurance, flexibility, and coordination. Nurturing and developing these qualities require systematic training and the right approach. With the right approach to training physical qualities, you can achieve significant results and improve your physical condition.

**Key words:** methods, physical fitness, university, student, coordination, lifestyle.

**Назимок Віктор, Мартинов Юрій, Абрамов Сергій. Методи розвитку гнучкості, координації та витривалості на заняттях фізичного виховання.** У фізичній культурі є багато фізичних якостей, які відіграють важливу роль у розвитку та збереженні здоров'я людини. Вони включають такі характеристики, як сила, витривалість, гнучкість, координація та багато іншого. У цій лекції ми розглянемо визначення та класифікацію фізичних якостей, а також їх властивості та вплив на організм. Ми також обговоримо методи та принципи розвитку цих якостей, які допоможуть нам досягти кращих результатів у фізичній активності та покращити загальну форму. Фізичні якості людини – це здатність організму виконувати різні фізичні дії. Вони визначаються спадковістю, віком, статтю, способом життя, дресуванням. Фізичні якості включають такі аспекти, як сила, витривалість, гнучкість, швидкість, координація та рівновага. Фізичні якості – це властивості, що визначають здібності і можливості організму при виконанні фізичних вправ і завдань. Кожна фізична якість має свої особливості та впливає на різні аспекти фізичної активності. Розвиток фізичних якостей відіграє важливу роль у розвитку та збереженні здоров'я організму. Сприяє зміцненню м'язів, покращує роботу серцево-судинної системи, підвищує витривалість і загальну фізичну форму. Фізичні якості людини відіграють важливу роль у її загальному здоров'ї та фізичній формі. До них відносяться такі аспекти, як сила, витривалість, гнучкість і координація. Виховання і розвиток цих якостей вимагає систематичних тренувань і правильного підходу. При правильному підході до тренування фізичних якостей можна досягти значних результатів і поліпшити свій фізичний стан.

**Ключові слова:** методика, фізична підготовка, університет, студент, координація, спосіб життя.

**Formulation of the problem.** The purpose of the work is to study the basic methods for the development of students' physical qualities such as flexibility and coordination. Physical exercises aimed at developing muscle strength and endurance help strengthen them. This can improve your posture, prevent the development of scoliosis and other back problems, and increase overall physical strength and energy. Exercise, especially cardio, helps improve the functioning of the heart and blood vessels. They strengthen the heart muscle, improve blood circulation, increase oxygen levels in the body and reduce the risk of developing cardiovascular diseases. Regular physical training helps increase the body's endurance. They improve the functioning of the respiratory system, increase lung capacity and the body's ability to supply oxygen to the muscles. This improves the ability to perform physical activity and resistance to fatigue. Exercise helps maintain a healthy body weight. They help burn excess calories, improve metabolism, and help control appetite. Regular exercise helps prevent the development of obesity and related diseases such as diabetes and cardiovascular disease. Developing physical qualities helps improve the overall physical condition of the body. It increases energy levels, improves mood, reduces stress, and improves sleep quality. Regular exercise also helps improve concentration and memory. Overall, physical education has a positive impact on the body, promoting health and overall well-being. Regular exercise and physical activity are important components of a healthy lifestyle and should be included in everyone's daily routine.

**Analysis of literary sources.** When studying the literature, the effectiveness of using physical exercises was investigated. Various methods used in physical education by such authors: Opryshko N.O., Bezpalova N.M., Ignatenko V.P., Budnyy V.E. [1], V. V. Biletska, Yu. O. Usachov, L. V. Yasko [2], Hryban V. G., Melnikov V. L., Khrypko L. V., Kaznacheev D. G. [3].

**Techniques for increasing joint mobility.** Flexibility refers to the morpho-functional properties of the musculoskeletal system, which determine the amplitude of human movements. The term "flexibility" is more appropriate for evaluating the total mobility in the joints of the whole body. When it comes to individual joints, it is more correct to talk about their mobility (mobility in the ankle joints, mobility in the shoulder joints). Joint mobility is measured in degrees.

There is a distinction between active and passive flexibility. Active flexibility is the ability to perform movements with a large amplitude due to the activity of muscle groups that surround the corresponding joint.

Passive flexibility - the ability to achieve the highest amplitude of movements because of the action of external forces. Indicators of passive flexibility are always higher than indicators of active flexibility. It should be considered that the connection between active and passive flexibility minor. Mobility in the joints is influenced by both the peculiarities of the structure of the joints themselves and external factors. The most important the features of the structure of the joints, which are reflected in their mobility, are the following: 1. The shape of the joint surfaces. The form depends not so much on the amplitude as on the variety of movements. In ball joints, movements are possible around three axes of rotation. Movements occur only in cylindrical and block-shaped joints around one axis of rotation, in elliptical, saddle-shaped, and condylar - around two axes. 2. The ratio of the sizes of

the articular surfaces. The greater the correspondence of the areas of the articular surfaces, the lower the mobility in this joint. Thus, in the most mobile joint, the humerus, the area of the articular surface of the head of the humerus is much larger than the area of the articular cavity of the scapula. The presence of additional joint formations (discs, menisci), as well as their condition, is of certain importance for joint mobility. 3. Presence of bone restraints. Bone restraints are considered bone structures that limit movements in the joint. The edges of the articular surface, some processes of bones can be bony limiters. For example, the greater trochanter of the femur and the edges of the acetabulum limit abduction of the hip. As a result of significant physical exertion, the working hypertrophy of bone tissue develops, the growth of bone restraints, and the mobility of individual joints decreases. 4. Elasticity of joint ligaments and muscles surrounding the joint. The more elastic the muscles and ligaments on the opposite side of the movement and the stronger the muscles performing the movement, the greater the amplitude of the movement. The elasticity of ligaments and muscles can be increased during systematic training, performing movements with maximum amplitude. The temperature of the room affects the elasticity of ligaments and muscles. The mobility of the joints is different in people of different ages and sexes. The younger a person is, the greater the mobility in his joints. This is explained by the peculiarity of the structure of the joints of children and adolescents, as well as the greater elasticity of their ligaments and muscles. Women have higher joint mobility than men. There are also significant ones inherited individual differences in joint mobility. Doing sports improves mobility in various joints of the body. Mobility in the joints is affected by such external factors as ambient temperature and time of day. If the temperature drops environment, joint mobility decreases. During warm-up, the body temperature rises, and the range of motion in the joints increases. Mobility is less in the morning than in the evening. Mobility and flexibility vary greatly in their manifestations. Mobility is characterized by the following manifestations: in rotational movements of the body and its individual links; in turns of the body and its links; in the hip and ankle joints ("inversion"); while performing support exercises; in movements performed in an unsupported state. Flexibility manifests itself during flexion-extension of the cervical spine; lumbar spine; hip joints; joints of the foot; hand joints [1].

The main types of flexibility are active, passive, dynamic and static. Mobility cannot be static or passive. The degree of mobility is determined by the genetic predisposition of the body and to some extent reflects the need for motor activity. A gradual decrease in the volume of movements leads to the formation of false comfort and over time becomes the cause of many diseases, primarily of the musculoskeletal system. It is necessary to maintain the optimal volume of movements constantly, using not only well-known motor actions, but also new, unusual motor tasks that ensure the development and improvement of physiological systems. Mobility has different varieties and manifestations due to various conditions of life, constant change when a person finds himself, as well as the constant need of the body for new movements to prevent adaptation to the usual load. Mobility is manifested in turns, in circular and rotational movements. The value of these exercises lies in the fact that they contribute to increased blood flow, redistribution of blood, and as a result - strengthening of working muscles. You should start with turns of the head and body and end with circular movements in the hip joints, i.e. from top to bottom. At the end of the class, the pace and amplitude of movements are reduced, they acquire a calmer and more even character, which makes it possible to ensure the necessary rhythm of breathing and recover the body faster after physical exertion [2].

As a result of insufficient flexibility, the process of learning motor skills is complicated and slowed down, the level of manifestation of strength, speed and coordination abilities is limited, intra-muscular and inter-muscular coordination deteriorates, the efficiency of work decreases, the probability increases damage to muscles, tendons, ligaments, and joints. An insufficient level of flexibility is the cause of reduced performance training aimed at the development of other physical qualities. Insufficient mobility in the joints does not make it possible to adequately use the elastic properties of pre-stretched muscles to increase the effectiveness of strength training, limits the possibilities of training methods aimed at improving the efficiency of work, increasing the power of working movements, improving coordination abilities. The main means of improving flexibility are such physical exercises that require a greater amplitude of movements in the joints than in everyday life, professional and sports activities.

**Methods of development of coordination abilities.** The word "coordination" is of Latin origin, meaning agreement, unification, arrangement. It is used in relation to human motor activity to determine the degree of consistency of its actions with the real requirements of the environment. Coordination is characterized by the ability of people to control their movements. The difficulty of managing the musculoskeletal system is that the human body consists of a significant number of bio links, which have more than one hundred degrees of freedom. Complicating the performance of new motor actions and a person's inability to rationally use the reactive forces that arise during the interaction of body parts in the process of changing the speed and direction of coordination automatisms, and fatigue, and excessive motivation, and fear, and unusual conditions of motor activity, etc.

The following relatively independent types of coordination abilities are distinguished: to evaluate and regulate dynamic and spatio-temporal parameters of movements; maintain stable balance; feel and master the rhythm; arbitrarily relax the muscles; coordinate movements in motor action. In integral motor activity, these abilities are manifested in interaction. At the same time, in certain situations, certain abilities play a leading role, while others play an auxiliary role. The basis of the methodology for the development of coordination abilities should be the performance of motor tasks in difficult conditions. For this, exercises are performed when there is a shortage of space and time, insufficient or excessive information. Cross-country running over natural obstacles is effective, skiing, running exercises with overcoming obstacles (barriers, gymnastic benches, balls, etc.), ball exercises, martial arts, gymnastic and acrobatic exercises, sports, and movement games (especially on reduced courts and with an increased number of players) [3].

Various exercises for achievement will also be effective established parameters of motor activity: walking or running a certain distance with closed eyes; throwing the ball into the basketball basket with closed eyes; performance of various gymnastic exercises with limited or complete exclusion of vision; performing exercises with hearing impairment or with artificially created excessive noise; jumps with turns on the specified number of degrees; running or swimming certain distances in a set time; performance of strength exercises with variable weights, etc. Partial or complete exclusion of some analyzers helps activate the function others, which has a positive effect on the formation of kinesthetic methods of movements, the presence of which

determines coordination capabilities. During the development of the ability to assess and regulate dynamic and spatial-temporal parameters of movements, preference should be given to exercises aimed at improving muscle perceptions or sensations of a ball, bar, barrier, projectile, etc. So, to improve the feel of the ball when throwing, when hitting, receiving, or passing, it is necessary to use balls of different sizes and weights, wide variability of the force of throws and blows, flight range. To improve the feeling of the projectile, it is advisable to use cores and spears of different sizes and weights, poles of different lengths and with different elastic properties, etc. To develop the ability to maintain balance, experts recommend using relatively independent groups of various exercises in complicated ones conditions: maintaining balance on one leg in various positions with movements of the trunk, arms, free leg; handstands and headstands with different positions and leg movements; sharp turns, tilts and circular movements of the head, standing on one or two legs, with different positions and movements of the arms, torso, free leg; circular movements of the body, standing on one or two legs; performing movements while standing on a limited support (log, cable, etc.); sudden cessation of movement at a signal (while maintaining a given posture) or a sudden change in the direction or character of movements; performance of various motor actions with closed eyes. Improving the sense of rhythm is facilitated using various light and sound signals, which act as rhythm leaders [1].

**Methods for the development of endurance.** The methods currently used to develop endurance are selective act on separate bioenergetic functions. The most effective methods of developing and increasing endurance are the method of long continuous work (uniform or variable), as well as the methods of repeated and interval training. Usually, they are divided according to the focus on the development of aerobic or anaerobic endurance components. In training aimed at the development of the lactate anaerobic component of endurance, the methods of repeated and interval work (interval sprint) are most often used. The main purpose of this kind training - to achieve the maximum depletion of lactate anaerobic reserves in working muscles and to increase the stability of key enzymes of the lactate anaerobic component in conditions of accumulation of anaerobic breakdown products. This task can be solved only by a large number of repetitions of short-term (duration no more than 10-15 s) exercises high intensity. Unlike the method of repeated training, in which rest intervals are not regulated, when using the interval method, their value is selected to ensure the most pronounced effect on training function. A change in this value in the case of repeated performance of maximum power exercises affects the dynamics of biochemical changes in the body. To develop the glycolytic anaerobic component of endurance, you can use the methods of one-time limit, repeated and interval work. The selected characteristics of the exercises should ensure the maximum strengthening of anaerobic glycolytic transformations in the working muscles. Such conditions correspond to the performance of maximal efforts in the interval from 30 s to 2.5 min. In training aimed at the development of the aerobic component of endurance, methods of one-time continuous, repeated and several variants of interval work are used. To ensure a sufficient impact on aerobic metabolism, the total duration of exercises should be at least 3 minutes, which is enough to produce and reach a stationary level of oxygen consumption. The intensity of the performed exercises during one-time continuous work should ensure significant activation of oxidation processes in tissues. After the initial period, the level of oxygen consumption will approach the maximum values. Performing such work requires a significant strain on the cardiorespiratory system, which is responsible for delivering oxygen to the working muscles. An effective tool for increasing aerobic capacity is interval training on short stretches. You can also apply a modification of interval training to short segments - the so-called myoglobin interval training, which includes very short periods (5-10 s) of work, which alternate with equally short rest pauses. During short periods of work, intramuscular stores of oxygen bound to myoglobin are used up, but they are quickly restored during short rest periods. Such work can be carried out in a large volume while maintaining a high level of consumption oxygen and promote the development of aerobic efficiency [2].

**Conclusions.** Rationally organized motor activity in various forms (types) of training and in accordance with the set objectives of physical education is aimed at managing the physical development of a person, where one of the target indicators is the progressive growth of physical qualities and associated motor abilities. So, the purpose of physical education is to ensure the complex impact of its means in the direction of the comprehensive harmonious development of the physical qualities inherent in a person, the abilities associated with them, and involves maintaining an increased level of their functioning for as many years as possible and minimizing the degree of their loss and regression in the future. aging period.

We examined the role of pedagogical factors in the system of targeted development of physical qualities, identified the importance of anatomical and physiological characteristics in the realization of a person's physical capabilities, and considered methodological aspects of optimizing the development of qualities. We came to the conclusion that the core of physical qualities is the physical capabilities of students, which in turn are determined by the biological innate inclinations underlying the demonstrated abilities, but are not limited only to them, since abilities are a product of the influence of external conditions and environmental factors.

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