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**CHAIR OF GENERAL HYGIENE  
AND PHYSICAL CULTURE**

**USE OF FITNESS EQUIPMENT  
IN THE PROCESS  
OF PHYSICAL EDUCATION**

Methodological manual on the organization  
of independent work and study of the disciplines  
"Physical culture and sports" and "Elective course in physical  
culture and sports" of the main professional educational  
program of higher education – specialty program in the specialty  
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In the methodological manual "Using fitness means in the process of physical education" key concepts and terms are presented, types of fitness are considered, various theoretical and practical aspects are touched upon, which help to understand the intricacies and nuances of fitness training. The fitness system, its programs, allow to develop the practice of individual and personality-oriented classes that develop functional and physical training of students, motor density of classes.

Methodological manual for students "Use of fitness means in the process of physical education", recommended for students studying in the specialty "General Medicine", "Dentistry", "Pediatrics", "Medical and Preventive Business", "Pharmacy". The manual has been prepared in accordance with the Federal State Educational Standard of Higher Education.

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**PURPOSE OF THE LESSON:** To acquaint and teach the methodological features of the use of fitness means in the process of physical education

**STUDENT SHOULD KNOW:**

- General characteristics and health-improving orientation of fitness means;
- The importance of fitness in improving the effectiveness of physical culture of students.
- The structure and content of fitness programs;
- Classification of fitness programs and their characteristics.

**A STUDENT SHOULD BE ABLE TO:** Use the method of fitness means in the process of physical education

**QUESTIONS TO BE SURRENDED:**

- General characteristics of fitness as a means of physical education;
- Trends and prospects for the development of fitness in Russia;
- The importance of fitness in increasing the effectiveness of physical culture of students;
- Functions of fitness - culture in the formation of a healthy lifestyle for students;
- The structure and content of fitness programs;
- Classification of fitness programs and their characteristics;

**RECOMMENDED LITERATURE:**

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**1. General characteristics of fitness as a means of physical education**

Fitness is one of the most advanced training system to date, incorporating all the most effective methods of "body education". There is no single and definitive definition of fitness. Some experts believe that fitness is a comprehensive restoration and maintenance of health through proper nutrition and physical activity, taking into account individual abilities. Other experts argue that fitness is a synthesis of physical exercises that affect all vital processes of the body. Still others give a scientific explanation for this concept: fitness is the ability of the heart, blood vessels of muscles to work with maximum efficiency.

Exactly translated from English, fitness means "conformity". Indeed, fitness implies the matching of various exercises, activities and other methods of improving health, body shaping and general strengthening of the body.

Today "fitness" in general can be defined as a system of physical exercises of a health-improving orientation, consistent with the individual state of the psychophysical sphere of a person, his motivational determination and personal interest. Three types of fitness are conventionally distinguished: general, physical and sports-oriented.

General fitness, or induction, is used in the early stages of training and implies an optimal quality of life, covering the social, mental, spiritual and physical components that determine "positive health". General fitness classes are characterized by the performance of low-intensity exercises, smooth movements limited in amplitude and tension, aimed at general physical and motor development, improving body composition, maintaining or developing functional capacity and some satisfaction of the need for motor activity. Usually this corresponds to a mode of training 2–3 times a week.

Physical fitness implies the achievement of an optimal physical state as a result of a certain motor activity program fulfillment. In other words, it is "basic" fitness aimed at achieving and maintaining physical well-being and reducing the risk of disease. This type of fitness is characterized by regular physical activity of moderate intensity, exercises for stretching the leading and weak parts of the musculoskeletal system, exercises of a power and aerobic nature, rational nutrition, normal response to mental stress for

through the formation of the ability to endure stress, switch to other actions and forms of activity, healthy norms of behavior, a variety of activities, emotional comfort, etc.

Sports-oriented fitness is defined as the highest level of motor activity and is aimed at the development of motor abilities and physical qualities for solving sports problems. Correlation of the conditions of a specific type of sports activity and the requirements for the manifestation of the corresponding abilities with the possibilities of their realization in the process of this type of fitness is its distinctive feature.

Thus, each type of fitness has its own limits of motor activity, includes motor actions of a certain tension, complexity and emotional color - which allows solving

a wide range of health improvement tasks for various categories of people differing in age, health, fitness, lifestyle, interests.

## **2. Trends and prospects for the development of fitness in Russia**

The development of fitness in Russia, first of all, is characterized by a sensitive response to the problems arising in modern Russian society in the field of public health and the search for optimal ways out of the current unfavorable situation. Based on the analysis of scientific and methodological literature, the prospects were identified and trends in the development of fitness in Russia were identified, among which the following can be listed:

1. Active development of children's fitness, which is caused by the need to improve the health of children, whose health is rapidly deteriorating every year.
2. Strengthening the role of the spiritual factor in fitness and individualization of programs. At the present time, when humanistic tendencies and a holistic approach to a person have prevailed in society, it is possible to predict the increasing role of spiritual and bodily harmony.
3. The emergence of programs for the elderly. Over time, fitness programs for the elderly will be implemented not only in fitness centers, but also in other institutions (rehabilitation medical centers, nursing homes, video lessons for the elderly, etc.) and will lead to adjustments in health programs - the stress of physical activity will decrease, will appear more without percussion programs (aqua fitness, MBF programs, etc.).
4. The introduction of fitness in the field of workers' health improvement in production. As a result of the total introduction of technical means into all spheres of life, the already rooted "sedentary" lifestyle of the population is aggravated, determining in turn the circle of problems associated with it. Therefore, in order to preserve and strengthen the health of the working population, and, first of all, in commercial organizations, health improvement classes can be carried out directly at the workplace. This factor is already contributing to the emergence and distribution of appropriate office fitness programs. Currently, there are already methodological aids in this direction.
5. Introduction of information technologies and computerization of fitness programs. With the help of new generation computer programs, it will be possible to solve problems related to fitness, quickly find answers to specific questions, and create models for their further implementation.

6. Further merging of the fitness and healthcare industries is an emerging trend. It should be noted that in the Russian fitness industry, recently there has been an intensification of cooperation with sports doctors, candidates of medical sciences as consultants for both clients of fitness clubs and staff. At the same time, fitness services for patients, regulated and controlled by medical personnel, are already appearing in individual polyclinics and rehabilitation centers. More and more healthcare professionals are adopting one or another instructor coursework program in relevant fitness areas.
7. Improving the comfort conditions for fitness classes. At the present stage, not only in the United States, but also in Russia, modern construction provides for projects of residential complexes with built-in gyms and health centers. In many houses today, simultaneously with the settlement of people, a small fitness chair, a beauty center, a gym, etc. are opening.
8. Integration of fitness into education. Seminars for physical education teachers "Fitness in School" are held at international fitness conventions, where experts from different countries share their experience. It is also possible to predict the active integration of knowledge on anatomy, valeology, hygiene, music, aesthetics, etc.
9. Strengthening the economic position of fitness, the potential of which has yet to be revealed in the coming years. The fitness industry is a gigantic service sector, a huge area of application of experience in the field of marketing and promotion of products and services on the market. According to O.

Slutsker (2008), referring to numerous marketing studies, the annual growth of the Russian fitness industry is 30-40%.

10. Qualitative changes in the content of the programs. At various stages in the development of the history of fitness, programs appeared that did not exist before. One of the regularities in the development of fitness is that the forms of movement that lose their meaningful value or motivating role eventually disappear, or are completely transformed into something new that meets the spirit of the times and consumer demands. It is equally important to expand the list of fitness programs that have a targeted impact on a particular problem in the state of human health and its correction.
11. Improving testing and diagnostics. Diagnostics of physical and mental conditions is likely to be further developed. The development of a variety of tests will allow you to identify the smallest deviations in health and correct them by selecting physical exercises in conjunction with all other fitness tools.
12. Increased motivation and greater variety of fitness technologies. It should be noted that among the motives of those involved in the course of time, the desire to be healthy and successful will play an increasing role, for these are the requirements that modern society makes to a person.

13. Further enhancement of the prestige of the fitness profession. In connection with the development of fitness in Russia, the expansion of the fitness industry, the demand for fitness specialists will also increase. The profession of a fitness instructor is already in demand, well-paid and prestigious. But in the future, due to the increasing competition in the labor market, the demands on the professional competence of the fitness instructor will increase.

### **3. The importance of fitness in increasing the effectiveness of physical culture of students**

The transition to a market economy in Russia, a change in the forms of ownership, the formation of vertically-integrated multi-sectoral physical culture and sports complexes, other processes of socio-economic development - all this led to a revision of views on the philosophy and strategy of development of physical culture in the HPE system.

Fitness today is an inherently valuable alternative reality of physical culture. The current stage in the development of the fitness industry is associated with the diversification of services provided. The substantiation of the diversification model of fitness from the point of view of the immanent laws of the market is based on the logical and methodological principles of conformity, complementarity and generality.

The enormous social potential that is contained in fitness is represented by various types and organizational forms that need to be more effectively used in all processes of transformation of society. The variety of fitness types achieved at the present stage is not something secondary, derivative, due to the essence of a single foundation. On the contrary, external diversity is rather a consequence of the diversity of the internal, substantial. In fitness, the necessary conditions for the personal formation and self-realization of an integral person are formed in his existential and ontological integrity. The determined trend in the development of fitness is acquiring today the character of a social imperative, in accordance with which the rights of the individual in the organization of physical culture are priority.

The widespread promotion of the values of fitness culture in the media reinforces the students' interest in fitness technologies. Their use in the HPE system is associated with an improvement in the quality of academic studies.

Fitness technology is a set of scientifically grounded methods and methodological techniques aimed at improving the health-improving process, meeting the needs of students in physical activity. They provide students with positive emotions, satisfaction of their health needs, the formation of a positive attitude towards a healthy lifestyle, social success.

The interest of students in fitness culture is due to its availability, efficiency and emotionality. The availability of most fitness services is determined by the relative ease of exercise.

Fitness activities are characterized by the following features:

- ✓ a wide range of physical exercises used (with objects, without them, on shells, simulators, etc.), their originality, different orientation due to the use of asymmetric movements;
- ✓ functional connection of physical activity with music, modern rhythms and directions of dancing;
- ✓ high emotionality of classes;
- ✓ wide variability in the use of methods and methodological techniques;
- ✓ the possibilities of creative self-expression, getting pleasure from the performance of various motor actions;
- ✓ improving motor abilities, increasing the culture of movements;
- ✓ acquisition of special knowledge and skills for self-control.

The effectiveness of various areas of fitness lies in the complex effect on motility, hemodynamic, respiratory and nervous systems of the body, prevention of various diseases. Emotionality of classes is provided not only by musical accompaniment, which creates a positive psychological mood, its dance and play orientation, but also by the need to coordinate their movements with the actions of partners in the group, which also increases interest in classes.

This allows us to consider student fitness culture as a highly effective system of health-improving activities aimed at improving physical conditions, strengthening health, and harmonious physical development. The basis of the content of the lessons is made up of physical exercises aimed at the development of basic physical qualities, the disclosure of the inner potential of the student as a person.

#### **4. Functions of fitness culture in the formation of a healthy lifestyle students**

Being a structural component of the physical culture system, fitness culture as a whole fulfills its basic socio-cultural functions and provides for the use of a wide range of types of physical activity in order to strengthen students' health, as well as create the necessary prerequisites and conditions for fruitful mental work. In the HPE system, fitness culture performs the following functions:

- compensatory-constructive, forming harmonious physical, intellectual and spiritual development of student youth, health promotion and preparation for professional activity;
- integrative-socializing, uniting student youth in clubs for collective activities, helping to establish communication links;
- creative hedonistic, contributing to the development of students' creative abilities in mastering the values of fitness culture;



- projective-value, forming the professional oriented motor activity of students to increase the effectiveness of educational activity;
- material - production function associated with the reproduction of human potential.

The implementation of these functions is associated with the renewal of fitness programs in individual socializing, humanitarian educational and innovative pedagogical areas, providing for the targeted use of developmental technologies, mental training and elements of neurolinguistic programming. Fostering a positive attitude of students to a healthy lifestyle provides for the correction of their cognitive sphere, endogenous mechanisms of the inner world, motivation that determine their attitude to work, health and self-esteem.

Fitness culture most fully meets the needs of student youth, contributing to the improvement of not only motor, but also general culture, expansion of worldview. Practical training is characterized by the following features: health-improving orientation; attractiveness of classes, high emotionality; pedagogical monitoring. Classes help to increase the spiritual and activity potential of the individual, expand the range of functional capabilities of the body, prevent fatigue, as well as activate the recovery processes and psychological prevention. This cultural sphere is aimed at reproducing a number of socially significant values: improving the quality of life, health parameters - vital values; the formation of beauty and bodily harmony - aesthetic values; education of industriousness - social values; the formation of civic engagement - political values; the formation of fitness-culture-cultural values.

Fitness culture is a multidimensional sociocultural phenomenon. Its structure consists of fitness clubs, centers, studios, gyms, phyto bars, SPA services. In the HPE system, it serves as an important tool for the formation of a physically developed and mentally stable personality, contributes to its upbringing, education, and socialization.

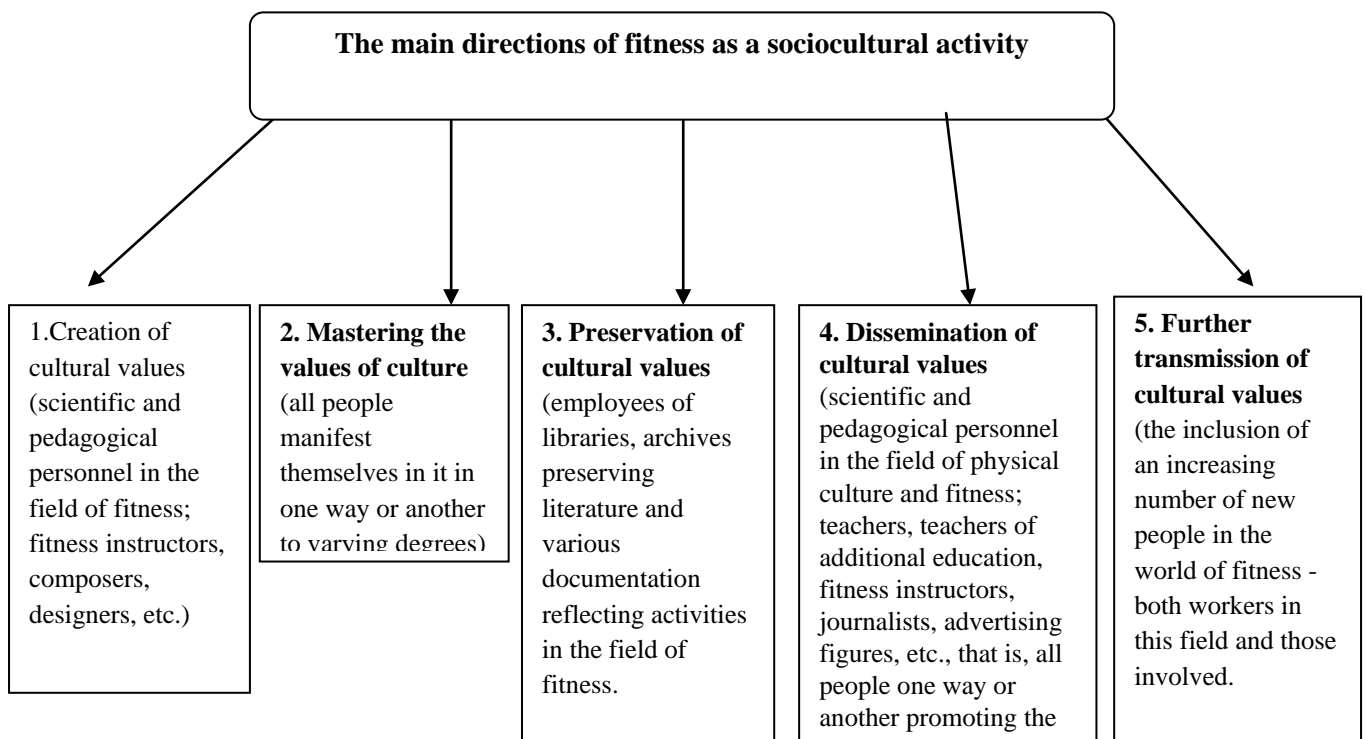
Fitness culture forms a person in integrity with nature, shaping his ability to be an intrinsic value, to adapt to changing external conditions of life. Here, the peculiarities of students, their desire to create their own physical culture, an individual system of values, and to realize themselves as an intrinsic value are taken into account most fully.

One of the effective mechanisms for the fusion of public and personal interests, the formation of socially necessary individual needs. The basis of this activity is the relationship that develops the physical, spiritual sphere of the individual, enriching it with norms, ideals, value orientations. In this case, there is a transformation of social experience into personality traits and the transformation of its internal forces into an external result. The holistic nature of such activity makes it an effective means of increasing the social activity of an individual. A characteristic feature of the demand for fitness services is its flexibility, which manifests itself in the

possibility of a rapid change in the structure of consumption when demand changes, as well as a number of cultural factors (for example, the well-being of a student, his level of physical fitness and health).

Fitness - personality culture - a term characterizing education, physical fitness and personality perfection, reflected in a healthy lifestyle. It manifests itself in the ability for self-development, that is, it reflects the orientation of the personality "towards oneself", associated with the desire for self-improvement. A significant trend in modern society is the increasing process of sociocultural differentiation, which is accompanied by the emergence of subcultures and various styles of behavior. In this regard, the variety of forms and means in physical culture, including both traditional and non-traditional, is increasingly differentiated in accordance with the cultural needs of various layers of society, focusing on meeting their interests. Fitness is undoubtedly a sociocultural activity and is reflected in all its directions (Fig. 1),

The main directions of fitness as a socio-cultural activity (Fig. 1)



## 5. Structure and content of fitness programs

The variety of fitness programs does not mean the arbitrariness of their construction - the use of various types of physical activity should correspond to the basic principles of physical education. No matter how original this or that fitness program is, the following parts (components) are distinguished in its structure:

- *Rkick-start*;
- *aerobic part*;
- *cardiorespiratory component (part of the program,*
- *focused on the development of erobic productivity)*;
- *power unit*;
- *flexibility development component (stretching)*;
- *the final (recovery) part*.

The given generalized structure of the fitness program may be subject to changes depending on the target orientation of the classes, the level of physical condition of the trainees and other factors.

For example, in fitness programs based on health-improving types of gymnastics, there are 8 target components or blocks:

- *leading*(preparing the body of the student for the lesson);
- *aerobic* (development of the cardiovascular and respiratory systems organism);
- *dance-choreographic*(implementation of aesthetic motives and attitudes, development of coordination abilities);
- *corrective* (body shaping and strength exercises character);
- *prophylactic* (prevention of various diseases);
- *additional* (development of agility, flexibility, vestibular stability);
- *arbitrary* (development of musical and rhythmic abilities);
- *relaxation* (recovery after classes, stress relief and relaxation).

An important component of modern fitness programs is stretching - a system of specially fixed positions of certain parts of the body in order to improve muscle elasticity and develop joint mobility. Organized after the main warm-up, at the end of the aerobic or strength part of the workout, as well as in the form of independent stretching exercises, they reduce excessive neuropsychic stress, eliminate the syndrome of delayed muscle pain after exercise, and prevent injuries.

The physiological basis of stretching is a myotonic reflex, which causes an active contraction of fibers in a forcedly stretched muscle and an increase in metabolic processes in it. As a result of systematic exercises, the elasticity of muscle tissue, ligaments increases significantly, the range of motion in the articular complex increases. A rational version of stretching involves the use of two types of training complexes. The first type (selective focus) is characterized by the use of a number of exercises with the participation of the same muscle groups, which causes a local, but significant effect. The second type of complex is formed from exercises, each of which is aimed at a specific muscle group. It is advisable to practice stretching for 15-30 minutes every day, alternating options of different directions.

An integral component of fitness programs is the assessment of the physical condition of the trainees. The main components are assessed: anthropometric indicators, functional state of the cardiovascular system, muscle strength and endurance, flexibility.

## **6. Classification of fitness programs and their characteristics**

The classification of fitness programs is based on:

- on one type of physical activity (for example, aerobics, health jogging, swimming, etc.);
- on a combination of several types of physical activity (for example, aerobics and bodybuilding; aerobics and stretching; recreational swimming and running, etc.);
- on a combination of one or more types of physical activity and various factors of a healthy lifestyle (for example, aerobics and hardening; bodybuilding and massage; recreational swimming and a complex of hydrotherapy recovery procedures, etc.).

In turn, fitness programs based on one type of physical activity can be divided into programs based on: types of aerobic physical activity; recreational gymnastics; types of power-oriented motor activity; types of physical activity in water; recreational types of physical activity; psycho-emotional regulation means.

In addition, there are integrative, generalized fitness programs focused on special groups of the population: a) for children; b) for the elderly; c) for women in the pre - and postpartum period; d) for persons with a high risk of disease or having a disease; e) programs for correcting body weight. Such a variety of fitness programs is determined by the desire to satisfy various physical culture, sports and

health-improving interests of the general population. Considering that the content of the concept of fitness includes multifactorial components (physical fitness, good nutrition, disease prevention, social activity, including the fight against stress and other factors of a healthy lifestyle), the number of fitness programs created is practically unlimited.

*Fitness programs based on aerobic types of physical activity.*

The most widespread are fitness programs based on the use of aerobic types of physical activity. The term aerobics has a double meaning. In broad terms, aerobics is a system of exercises aimed at developing aerobic capabilities for energy supply of physical activity. As means of influence, walking, running, swimming, dancing, cardiovascular exercises, etc. are used. Considering that the level of aerobic performance is mainly characterized by the activity of the cardiovascular and respiratory systems of the body, which in turn largely determine the state of a person's physical health,

the use of the term aerobics corresponds to the target orientation of health related physical culture.

In a narrower view, aerobics is one of the directions of physical culture and health improving fitness programs based on various gymnastic exercises (step aerobics, slide aerobics, dance aerobics, etc.).

Currently, the concept of aerobics has completely replaced the previously existing terms rhythmic gymnastics, aerobic dancing, dance exercises, etc., characterized by the performance of physical exercises to music. In accordance with this, it is advisable to divide fitness programs into 2 types: based on types of aerobic physical activity and based on health-improving types of gymnastics of various orientations.

*K. Cooper's aerobics...* One of the most popular and scientifically based health-improving training systems is the fitness program developed at the K. Cooper Institute for Aerobic Research (USA). The basis for improving the functional readiness of the trainees is a gradual increase in the number of points (points) they gain in one form or another of physical activity - walking, running, swimming, etc. *Wellness walking.* Walking is one of the widespread types of physical activity, the advantages of which - accessibility and efficiency - are especially important for people who are overweight, the elderly and have a low level of physical condition. It has been established that an adult needs to engage in at least 30 minutes a day with various types of low-intensity physical activity. After completing the walking program, taking into account the achieved level of physical condition, it is possible to switch to participation in the jogging program.

*Fitness programs based on recreational gymnastics.*

The wide popularity of aerobic walking and running programs scientifically grounded by K. Cooper aroused interest in other types of health related activities -

swimming, cycling, weight training, etc. This led to the reorientation of the orientation of traditional types of physical activity from sports to health. So, on the basis of cycling, spinbike-aerobics (cycling, spinning) is intensively developing, on the basis of boxing and karate - kickboxing-aerobics, on the basis of swimming-water aerobics, etc.

In 1969, J. Sorensen (USA) for the first time proposed the use of choreographically ordered gymnastic exercises for practicing with music and introduced the term aerobics to define a health-improving form

gymnasts. The famous artist Jane Fonda has successfully acted as a symbol for the popularization and spread of aerobics. Basic exercises in aerobics are various types of walking, running, jumping and jumping, swinging legs, squats, lunges. The use of these exercises in combination with movements, turns, movements of the hands provides a variety of effects on the body of those involved. In addition to aerobic exercises, classes include a large number of exercises aimed at developing strength and strength endurance of various muscle groups, for body shaping, and also for developing flexibility. In Russia and Ukraine at the end of the 70s of the XX century. Rhythmic gymnastics, alternative to foreign aerobics, began to develop intensively, embodying the achievements of rhythmic and women's gymnastics.

Currently on the fitness industry market there are more than 100 different fitness programs based on the types of health-improving gymnastics. The classification of these fitness programs is difficult due to their diversity, different goals, the means used, the nature of the musical accompaniment and other factors. At the same time, the choice as a distinctive nature of the impact on the body of the student allows us to classify the whole variety of types of aerobics into categories that are aimed at development:

I - aerobic endurance;

II - strength endurance and muscle strength, the formation of a harmonious figure;

III - coordination abilities and musical rhythmic skills;

IV - flexibility and relaxation (relaxation).

#### Types of aerobics category I.

Let's consider the types of aerobics belonging to the I category.

*Step aerobics* developed in the 90s of the last century by the famous American trainer Gene Miller and is a training in an athletic style on special platforms 10-30 cm high. Due to its accessibility, emotionality and high health-improving efficiency, step aerobics is widely used in classes with people of different ages and the level of physical fitness. Exercises on the step platform improve the activity of the cardiovascular system and the musculoskeletal system, contribute to the development of the most important motor qualities and the formation of a proportional physique (especially the legs and lower body). The use of dumbbells weighing up to 2 kg, as well as free energetic movements of the hands, provides an optimal load on the muscles of the shoulder girdle.

Modern programs include a wide range of training tools that allow to qualitatively solve various problems: post-traumatic rehabilitation, stage-by-stage conditioning training, high-intensity sports training with elements of athleticism.

The load in step aerobics classes varies depending on the chosen platform height, the pace and complexity of the movements performed, the number of jumps (impulsivity index), the use of various kinds of weights (dumbbells, belts, pads, etc.). For persons with insufficient potential of the knee and ankle joints, as well as poor dance training, the "combined platform" effect is applied, which provides for the development of simple coordination movements directly on the platform, near and around it, without choreography, jumps and dismounts.

*High Impact* - sports-oriented aerobics, in which simple rows of movements are used, as well as jumping, running on the spot.

*High-low-impact* - mixed direction of high - and low - impact.

*Rope skipping* is a combination of various jumps, acrobatic and dance elements with one or two skipping ropes, which are performed individually and in groups. He became the founder of this form of motor activity in the 80s of the XX century. Belgian coach Richard Stendhal.

Despite the external difficulty of performing jumps and accompanying intense movements at a pace of up to 120 or more rotations per minute, rope skipping is one of the most accessible and emotional types of muscle activity that allows you to effectively affect the most important muscle groups, strengthen the cardiovascular and respiratory systems, correct body weight by developing general and speed endurance, strength, agility and coordination (Fig. 1).



Fig. 1. Fragment of rope skipping competition

The technique of rope skipping movements is based on the implementation of the basic elements of jumps: on two; turning the feet to the right, left (twist); bending your knees to the right, to the left (slalom); legs together, legs apart; alternately in front of the right, left (step); on two, right forward on the heel, on two, right backward on the toe; legs crossed (alternately); with double rotation of the rope; with displacement; rotating the rope backward; with 180 ° and 360 ° rotation.

### Types of aerobics category II

Consider the types of aerobics belonging to the II category.

*Super strong-* power aerobics based on the use of heavy sticks - body bars, as well as various equipment (shock absorbers, dumbbells). There are separate exercises for the development of the muscles of the legs, abdominals and shoulder girdle.

*Pump-aerobics-* the direction of dance aerobics created in the fitness centers of Australia using sports equipment (crossbars, mini-barbells, dumbbells). The training is of a stepwise nature, the duration of the standard course is 3 months. The interval-circular version of the training involves the use of a step-platform. Various presses, squats, inclinations are used, requiring the inclusion of various muscle groups in the work.

*Slide aerobics* is a versatile physical training program based on lateral (lateral) leg movements borrowed from speed skating. Slide aerobics exercises increase the strength and coordination of the muscles of the lower extremities, develop endurance, and serve as an effective means of regulating body weight. It was found that, performing the basic program of low-intensity slide-aerobics (initial level of difficulty), a person weighing 70 kg loses in 30 minutes on average up to 250 kcal, which is one of the highest in comparative terms, indicators of energy consumption in aerobics. Slide aerobics classes are carried out on special mats with an area of 180x60 cm with a flat elastic surface that provides optimal resistance when sliding. The main effort is performed by the muscles adducting the thigh, imitating sports skating.

A typical example of rational use in fitness programs of modern achievements of scientific and technological progress is the rapid development of new classes of aerobics, known as fitball training and terarobics.

*Fitball-aerobics* is a complex of various movements and static poses supported by a special polyvinyl chloride ball with an air filling of the body with a diameter of 45 cm (children's version) to 85 cm (intended for people over 190 cm tall and weighing over 150 kg). The ability to conduct the aerobic part of the session while sitting on the surface of the ball has a positive effect on the back muscles, pelvic floor, lower and upper extremities, spine, main muscle groups and vestibular apparatus, allowing to significantly expand the contingent of those engaged in aerobic exercise. In fitball lessons, a special musical accompaniment is used, the pace of which is determined by the nature of the movements and the degree of ball amortization, taking into account the individual level of physical fitness.

*Therarobics*, Founded in 1995 by the German trainer J. Weissars, it includes dance movements performed in an aerobic mode, combined with strength gymnastics and stretching. In this case, a special latex tape is used as a shock absorber, which has different resistance and is fixed on the wrist and lower leg of the practitioners (Fig. 2). It is also possible to use an ordinary rubber band.

### Types of aerobics category III

Consider the types of aerobics related to category III.



*Low-impekt (low)* - dance-oriented direction with exercises of increased coordination complexity in the absence of shock loads, causing a negative effect (one leg constantly remains on the floor).

Dance aerobics (hip-hop, aerodance, salsa, latina, city-jam, afrobic, rock-n-roll, etc.) is based on the music and dance styles of the same name, which are logically and consistently combined with elements of modern choreography and pop, as well as exercises of a sports nature. The steps in dance aerobics are modified depending on the chosen style, expressed by means of popular music. The use of a combination of dance and gymnastic exercises and individual techniques and elements used in boxing, kickboxing, karate, taekwondo in the classroom contributes to the development of strength, speed, endurance, coordination, increases the emotional background of the classes.

*Hip-hop* - a combined version of American dance styles hip-hop and country with alternating steps, jumps, running.

*Modern dance, street dance, cardiofunk, city jam*- directions based on the same name musical or dance styles; elements of modern choreography are used, the steps change depending on the chosen style. They are held in order to attract young people and children to classes by means of popular music and fashionable dance styles.

*Aerodance* - use of elements of choreography of classical dance and ballet.

*Salsa, latina* - classes are built from combinations of colorful movements characteristic of Latin American culture.

*City jam*- a style formed on the basis of Negro street dancing. With an average music tempo of 105–115 bpm "1 (rap, soul), taking into account the rhythm of the music, it is possible to achieve a significant load in the process of training.

*Tai-bo, ki-bo* - a kind of aerobics based on martial arts, boxing, kickboxing.

*Boxing aerobics* - is based on the use of a series of small-amplitude tempo movements: jab (straight punch), hook (side punch), uppercut (bottom punch) with a constant change of position and various movements imitating the actions of a boxer in the ring.

*Kara-T-robika* - the use of techniques characteristic of karate in medium-intensity classes: yoko-giri (straight kick to the side), mai-giri (straight forward kick).

*Kicks-aerobics* - synthesis of movements of a boxer and a karateka (left jab, right xy, yoko-kettlebell, right jab, left uppercut, yoko-kettlebell, 4 yoko-kettlebell uppercuts, left hook, 2 may-kettlebell with both legs, etc.).

#### Types of aerobics category IV

Consider the types of aerobics belonging to the IV category.

*Yoga-aerobics* - a combination of static and dynamic asanas, breathing exercises, relaxation and stretching.

*Flex* - classes aimed at developing flexibility in combination with means of psychoemotional regulation.

*Musical accompaniment.* Sound accompaniment is an integral part of most modern fitness programs. Performing exercises at a tempo set by music contributes to the development of aesthetic taste, a sense of rhythm, expressiveness and culture of movements.

There are 5 gradations of tempo: slow - 40-50 beats - min "1 (adagio, blues when performing breathing exercises, soft, smooth movements, relaxation); below average or moderate - 60-70 beats - min" 1 (rhythmic dance music with performing gymnastic and general developmental exercises); fast - up to 150 bpm "1 and very fast - 170 bpm" 1 (rock and roll, ragtime, shake, Charleston, etc., when running, jumping, elements of disco dancing).

Fitness programs, based on the types of health-improving gymnastics, have a complex effect on the body of those involved. At the same time, in virtually any form of aerobics, you can achieve the main goals of health fitness - to develop cardiorespiratory endurance, strength, strength endurance, flexibility. The health-improving effect is determined both by the type of physical activity and by the rational construction of classes. This provision served as the basis for the formation of a unified fitness-mix methodology that combines the capabilities of various health-improving gymnastics programs.

*Fitness programs based on the types of power-oriented physical activity (bodybuilding).*

Optimal development of strength and strength endurance is an important component of wellness fitness. Along with this, specialized strength exercises are widely popular, designed as a separate sport and known as bodybuilding. Bodybuilding (bodybuilding, athletic gymnastics) is a system of physical exercises with various weights performed in order to develop strength abilities and correct body shape.

The founder of bodybuilding, Frederic Müller, developed the first exercise program with dumbbells, weights and rubber shock absorbers, summarizing his personal training experience in the textbook "Body Structure" (1904). Since that time, international athletic competitions have been held in the USA, Canada, England, France, Belgium, Germany and Russia. The sports orientation of bodybuilding involves building up powerful, voluminous, relief and proportional muscles with its further demonstration at competitions. The quality of the demonstrated standard poses in the compulsory and free programs is of great importance.

Means from the arsenal of athletic gymnastics are effectively used in the rehabilitation of injuries of the musculoskeletal system. In bodybuilding, the following classification of the means used is adopted: basic - exercises with limit or near-limit weights, performed mainly with two limbs, involving muscles around several joints, with many degrees of freedom; formative - motor actions with unsaturated weights with one degree of freedom, performed, as a rule, with one limb with the involvement of muscles around one joint for their local development.

In this case, various initial and final positions are used, often with pronation and supination of the limb; additional - which include general preparatory exercises related to the technique of various sports.

Among the main factors that determine the specificity of the impact of the means of athleticism, it is necessary to name the following: individual characteristics of the trainees (age, gender, level of physical condition, presence or absence of experience, etc.); the nature of the exercise (basic, formative); muscle work mode; the speed of the exercise; the size of the burden and the rest interval; equipment and shells. The technique of movements is relatively simple and accessible. However, some exercises cannot be performed without preliminary physical and technical training, since they are designed for athletes with a sufficiently high level of development.

coordination abilities, strength and flexibility. As a rule, exercises are performed at a medium or slow pace, less often at a fast pace. Most of the movements are mastered by trainees immediately after the demonstration, followed by their correction by an instructor or coach.

Basic and formative exercises should be taught with a weight of no more than 50-60% of the first rep max. Bodybuilding mainly affects the development of strength, although some exercises allow you to combine the development of strength indicators and flexibility. By varying the magnitude of the burden, the intervals of rest and the speed of movement, it is possible to develop explosive muscle strength, strength endurance, and improve the mechanisms of intra- and intermuscular coordination. Exercises in bodybuilding are performed both with free weights (barbells, dumbbells) and on special simulators that allow you to perform movements in different modes of muscle work, with different amplitudes and differentiate the amount of load.

*Callanetics* - a system of physical exercises created by the American ballerina Callan Pinckney, an alternative to traumatic variants of aerobics, more effective in terms of the timing of achieving results. The goal of callanetics training is to improve the figure through specially selected and organized static-dynamic exercises for stretching various muscle groups. Movements are performed with a small amplitude, often in an uncomfortable position in full static or semi-static. The emphasis is on the so-called "problem" areas (neck, abdomen, buttocks, hips, back), and hard-to-reach internal muscles are also involved. Regular callanetics exercises contribute to an effective change in appearance (muscle strengthening, the formation of a harmonious figure) and practically have no age restrictions.

*Slim-Jim, body styling, bodyforming*—Popular systems of exercises combining elements of aerobics, callanetics, choreography, bodybuilding, the purpose of which is to have a versatile effect on the body of those who train, to correct weight

and improve body shape (slim-Jim, bodyforming), to master new elements of choreography (body styling).

Shaping - the system of physical culture and health-improving classes for women and girls, developed by specialists of the Soviet school of aerobics and bodybuilding, aimed at achieving harmoniously developed body shapes in combination with a high level of motor fitness. Shaping-training is based on the principle of rational use of the potential of rhythmoplastic and strength directions of gymnastics, the synthesis of exercises of which contributes to the positive dynamics of the whole

complex of the most important morphological and functional indicators of the body. The shaping program consists of two stages. The objectives of the first stage: to improve health, reduce the risk of developing diseases (cardiovascular system, metabolism, musculoskeletal system); normalize body weight; increase the level of physical fitness. The task of the second stage: body shaping with the help of various types of physical activity and balanced nutrition.

The main means of shaping are general physical exercises, which, depending on the methodological expediency, are performed without objects, with objects, on special equipment. The most important condition for determining the optimal parameters of volume, intensity, as well as the predominant orientation of physical exercises is the analysis of mass-growth indices and the level of physical fitness of the trainees. For persons with low morphological and functional characteristics, a minimum pace and small weights are provided in the process of long-term work of a cyclical nature, aimed at developing general (aerobic) and strength endurance. Persons with an average level of motor readiness use loads of considerable volume in order to correct their figure and strengthen "weak" muscle groups. For persons with a high level of physical fitness, the load value of the work performed in the classroom increases due to the prevalence of speed and speed-strength exercises. The pace of their implementation is medium and fast. When choosing movements, it is important to observe a rational sequence of inclusion in the action of the main muscle groups of the legs, back, chest, shoulder girdle. The total duration of a standard shaping lesson is 50-60 minutes. The training includes a specialized warm-up (20% of the training time), the main part (70%), the exercises of which are aimed at correcting the figure and developing motor qualities, as well as the final segment, within which stretching and relaxation means are used. When choosing movements, it is important to observe a rational sequence of inclusion in the action of the main muscle groups of the legs, back, chest, shoulder girdle. The total duration of a standard shaping lesson is 50-60 minutes. The training includes a specialized warm-up (20% of the training time), the main part (70%), the exercises of which are aimed at correcting the figure and developing motor qualities, as well as the final segment, within which stretching and relaxation means are used. When choosing movements, it is important to observe a rational sequence of inclusion in the action of the main muscle groups of the legs, back,

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When drawing up a training program, one should take into account the optimal duration of the training effect on a specific muscle group: for the muscles of the chest, back, arms - 40–90 s, 7–15 repetitions of each movement in the approach; muscles of the thighs, buttocks - 90–150 s, 15–25 reps; abdominal muscles - 150–180 s, 15–20 reps.

Assessment of physical development in the process of shaping is carried out on the basis of calculating a number of criteria: weight-height and height-weight indicators, Erisman's index, indicators of proportionality and physique power, the percentage of muscle strength to body weight, etc.

Aquafitness - a system of selective physical exercises in an aquatic environment, which, due to its natural properties, plays the role of a natural multifunctional trainer. The health-improving effect of aquafitness means is due to the activation of the most important functional systems of the body, the high energy cost of the work performed, the phenomenon of gravitational unloading of the musculoskeletal system, the presence of a persistent hardening effect. Systematic exercises in water are shown without restrictions to all practically healthy people of any age and are characterized by a wide range of target orientations: therapeutic and prophylactic, educational, recreational, conditioning, sports-oriented.

Currently, aquafitness is a variety of combinations of selective exercises, which, with a certain convention, can be divided into 3 groups: distance swimming using sports, mixed and original methods, in modes of various training methods, with full coordination of movements and by elements, as well as swimming under water; games in the water: from elementary motor and plotless to program, sports-oriented with elements of competition, recreational and entertainment events, diving, jumping into the water, applied swimming options; new forms of physical activity in the aquatic environment, whose priority over the generally accepted variants of recreational swimming is ensured by the presence of the following factors:

- coverage of a wider range of people, including those who cannot swim, people with limited physical activity, women in the postpartum period, patients in the stage of rehabilitation, etc.;
- the possibility of a differentiated effect on the morphofunctional indicators of the body by using movements of different nature;

- a high emotional background in the classes, provided by the musical accompaniment of collectively performed exercises with the active demonstrative participation of the instructor;
- a large selection of additional technical means (circles, belts for support and changes in buoyancy, boards, balls, pipes, "logs", fins, webbed gloves, platforms, slides, wave hydroelectric effects, etc.);
- the possibility of effective use of pools of various configurations, as well as natural reservoirs;
- practically safe conditions for conducting classes with any contingent.

One of the most common variants of water aerobics is circuit training sessions, built according to the generally accepted lesson structure. Frequency rate of workouts lasting 30-60 minutes - from 2 to 3 per week. Warm-up (10-15% of the total time) includes breathing exercises, isolated and complex movements of the arms, legs and trunk with the study of the main articular joints (ankle, knee, hip, spine, shoulder, shoulder girdle and elbow), as well as muscle groups. Exercises are performed in the intensity range of 50-60 acc-min "1. The main part of the lesson (70-75% of its duration) is based on walking (50-150 acc-min" 1), running, jumping with increasing amplitude and frequency (up to 115 acc – min "1), arm movements (50–60 acc – min" 1), trunk (30–60), legs (50–60) in aqua jogging, aqua building, aquadance, etc. The final part of the lesson is based on slow compositions using aquastretching and hydro-relaxation.

## **Control and training tests:**

### **1. What is Fitness?**

- a) a set of exercises in which breathing movements are combined with body movements, musculoskeletal system;
- b) the correspondence of various sports exercises, activities and others ways to improve health, body shaping and general strengthening the body;
- c) the main means of protection from sports and martial arts

### **2. What literally means the word "Fitness":**

- a) compliance;
- b) the totality;
- c) gymnastics;
- d) sequence

### **3. Synthesis of general developmental and gymnastic exercises, running, jumps performed without pauses and rest to the musical**

**escort is called:**

- a) basic aerobics;
- b) sports aerobics;
- c) tara aerobics.

**4. A kind of aerobics, a feature of which is using a special platform is called:**

- a) water aerobics;
- b) step aerobics;
- c) pump-aerobics;
- d) slide aerobics

**5. One of the forms of aerobics, which uses a special coating and shoes:**

- a) slide aerobics;
- b) tai-bo aerobics;
- c) pump-aerobics

**6. The system of mainly strength exercises for women, aimed at correcting the figure and improving the functional state of the body, is usually denoted as:**

- a) shaping;
- b) athleticism;
- c) hydroaerobics

**7. Stretching is an exercise:**

- a) aimed at the development and improvement of dexterity;
- b) aimed at improving flexibility and development joint mobility;
- c) aimed at the development and improvement of strength qualities;
- d) aimed at improving vestibular functions

**8. Aerobic exercise (aerobics) means ...:**

- a) participation in the work of large muscle groups; opportunity prolonged exercise; rhythmic character muscle activity;
- b) systematic performance of those physical exercises, which cover a large muscle group with work and are long; provided with energy due to aerobic processes;
- c) cyclic exercises that contribute to favorable functional changes in the body

**9. The effect of exercise is primarily determined by:**

- a) their form;
- b) the pace of movement;
- c) the duration of their implementation

**10. Which of the types of aerobics does this definition correspond to: “a comprehensive program of aerobics based on kickboxing and other sports:**

- a) pump-aerobics;
- b) tai-bo;
- c) step aerobics.

**Answers: 1– b; 2 - a; 3 - a; 4– b; 5 - a; 6 - a; 7– b; 8– b; 9– c; 10– b.**