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INTERGENERATIONAL  
SPORT PROGRAM  
COMBINING ELEMENTS  
FROM DIFFERENT  
SPORTS

*DEVELOPED BY SPORTS CLUB "COMAC SPORT" WITHIN THE FRAMEWORK OF  
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EUROPEAN UNION.*



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# Ела и Играй 4.0

## INTERGENERATIONAL SPORT PROGRAM COMBINING ELEMENTS FROM DIFFERENT SPORTS



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# **INTERGENERATIONAL SPORT PROGRAM COMBINING ELEMENTS FROM DIFFERENT SPORTS**

## **INTRODUCTION**

This "Intergenerational sports program, combining elements from different sports" has been developed by Sports Club "COMAC SPORT", Ivanyane, Sofia, Bulgaria, within the framework of the "Come and Play 4.0" project, EAC-2020 -0745, co-funded by the European Union. The Sport program places a specific focus on the following three target groups:

- 1) Young people aged 15-24;**
- 2) Families with children who are physically active together;**
- 3) People 60+ years of age.**

Elements from different sports are compiled based on scientific findings about the positive correlation between:

**Physical activity - Health - Better educational achievements - Better professional achievements - Higher standard of living - Well-being of the individual as a whole**

In the program, the exercises are in 3 groups:

- Flexibility exercises - improve the range of motion of muscles and joints;
- Aerobic exercises - increase the endurance of the cardiovascular system;
- Anaerobic exercises - increase muscle strength.

At the same time, these exercises fall into the following 5 general categories:

- for strength;
- for flexibility;
- for speed;
- for durability;
- for coordination.

### **Personal development:**

The specific positive effects on the health of the participants of the new intergenerational program are:

- stimulation of blood circulation;

- strengthening muscles;
- stimulation of the immune system;
- improving mental health;
- prevention and treatment of varicose veins;
- maintaining the elasticity of the skin;
- weight normalization;
- strengthening of bones;
- increasing the flexibility of joints and tendons.

### Cardiovascular system

The beneficial effect of the new program on the cardiovascular system is based on the prevention of lack of physical activity among people of all ages. There is a direct relationship between lack of physical activity and the development of ischemic disease. Since the most beneficial effect on cardiovascular disease can be achieved through moderate intensity exercise, the program includes such elements as brisk walking, running, swimming, cycling, tennis and jumping rope.

### Immune system

Epidemiological studies show that moderate exercise has a beneficial effect on the immune system, while extreme exercise has a rather negative effect. That's why the new program targets the immune system through elements of the following sports activities: walking, cycling, yoga and swimming.

### **Educational and professional development:**

#### Brain function

Studies on cognitive therapies (strategies to slow down or prevent decline in brain activity) have concluded that physical activity, and in particular aerobic exercise, improves cognitive function in older adults. Physical activity protects nerves in many neurodegenerative and neuromuscular diseases. For example, it reduces the risk of developing dementia. In addition, frequent exercise has been suggested to counteract certain forms of brain damage caused by addiction to alcohol, drugs, etc. These are exercises aimed at:

- increasing the flow of blood and oxygen to the brain;
- increasing the synthesis of growth factors that help generate new nerve cells;
- increases the secretion of substances in the brain that support cognition, such as dopamine, glutamate, norepinephrine and serotonin.

Thus, the following elements are included in the new program: plank, jumps, yoga, walking, running.

#### Effects against depression

Endorphins act as a natural antidepressant, relieving pain resulting from intense physical activity. When a person exercises, the levels of serotonin and endorphins in the bloodstream increase. These levels remain elevated even for several days after exercise and contribute to improved mood, reduced depression, increased self-esteem and weight management. Outdoor sports activities are good antidepressants.

Elements of the new program that address depression are deep breathing exercises and low-intensity movements found in aikido (primarily the warm-up and breathing exercises), tai chi and yoga, combined with more intense elements of tennis, volleyball and running.

### Sleep

A recent WHO study shows that exercising generally improves sleep for most people and helps eliminate sleep disorders/insomnia. The optimal time for exercise is between 4 - 8 hours before sleep. Stress is the cause of various forms of sleep disorders, regardless of age. The new program therefore addresses the problem by combining elements of running, brisk walking, tai chi, aikido, tennis and swimming.

Before presenting the individual exercises performed independently or in the form of competitive games, it is appropriate to define the framework of the whole program. All these activities with elements of different sports are significantly different from real sports-competitive activity. In contrast to real sports practice, here it is a matter of purposeful activity with the aim of strengthening health /in the most general sense/, according to the age categories. Achievement at any cost is not sought after, but rather the pleasure of motor activity and mood, which raise self-esteem and improve fitness.

Before we present the influence of physical exercises on the human organism in detail by systems and in accordance with the anatomical, physiological, mental, etc. features of the relevant age categories, it is necessary to generally determine what the "Human - Environment" system is:

It is clear that human is the most perfect biological system from an evolutionary point of view on Earth. This open biological system is not only organized in organs and systems, but is an autonomous unit that functions according to its own internal laws and that forms the so-called "internal unity" or Status Quo. These interrelationships of organs and systems in the human organism have the ability to compensate both for changes of their own and to compensate for changes in interaction with the environment. These compensatory possibilities are not endless. The statement about the unlimited human possibilities, circulated for many years, is extremely unacceptable. Even with great preparation and great training of the body, extreme situations occur that the human body cannot resist. We are talking about extremely low or high temperatures, changes in the pressure to which the human body is subjected, dehydration, lack of food, etc. So, after compensation, unfortunately, decompensation follows. Whatever beautiful terms we use for the adaptation of the human organism to the environment, we must realize that it is pointless to imagine that we can control nature. We can influence it, but not change it. In general, the entire adaptation of the human organism to environment is a struggle for biological and physical survival. We come back again to the so-called unlimited human possibilities: in our opinion, only human dreams are unlimited.

Another myth that needs to be debunked is related to the physical capabilities of men and women. For many years there was talk of an equalization of physical strength between the two sexes. In our opinion, this is an unacceptable statement because of the different anatomy, physiology and social purpose of men and women. With honest means / without doping / there is no way to equalize the forces of men and women in sports. The intellectual sphere and professional realization is another story...

There is one more condition that we must point out - physical load, and specifically sports, is a type of activity, a type of load that, depending on the goals and age, **can only be performed by healthy people**. Otherwise, it would be called "physical therapy" which is not the subject of our Sports program.

When we say that a mandatory condition for those involved in sports is to be healthy, we need to define the concept of "Health". The absence of disease is not health. The World Health Organization /WHO/ gives the most complete and accurate definition of health: "Health is a state of complete physical, mental and social well-being of the individual and the group, it is the realization of needs and for living in harmonious interaction with the environment. Health is a basic human right and a solid social investment." Three characteristics follow from this definition - **Physical well-being** is biologically presupposed by the harmony between the organs and systems of the human organism. Mental well-being is a subjective feeling of satisfaction with the realization of a person's physical and intellectual potential. Social well-being is about relationships between people. The second characteristic, according to the WHO, is **the desire to satisfy needs** /in the most general sense/. This process turns health into an individual and social value and thus ensures a higher quality of life. The third characteristic of health is **an investment in future well-being** - accumulation of knowledge and skills, qualitative changes in the structure of the organs, improvement of their functional capabilities, improvement of the strength and balance of mental processes, improvement of the adaptation of the organism to the surrounding environment. All this is a guarantee and an investment in health. Health has a genetic basis, but it is not only a biological phenomenon. It is a vital need that is formed and perfected throughout life.

Health is a normal state of the body. Under the influence of dynamically changing conditions in a person's life, it also changes. The driving forces of change are many and varied and can hardly be captured in a classification. Due to the great social importance of this social problem /it is about people's health/, science proposes to distinguish the causes that change the state of health, as four factors, namely: Rational nutrition, Way of life, Motor activity, Health culture.

For obvious reasons, we will mostly focus on motor activity. Physical activity is one of the most essential elements of a healthy lifestyle. The motor potential and the functional state of the body are of decisive importance for the successful everyday domestic, educational and professional activity of a person. This enormous social importance of physical activity is a function of its health effects. Unfortunately, socio-economic development, progress and new technologies are increasingly limiting human's physical activity. More and more perfect machines and automata create maximum comfort, and this leads to immobility and deprivation of physical efforts. Negative changes affect all organs and systems in the human body and sooner or later lead to disturbances and diseases.

Physical activity and sports for health are necessary for all ages. For children and adolescents, it supports the processes of development and education. In the creative age, it improves the organs and systems of the body, improves their functional fitness, strengthens health and vitality, and actively counteracts occupational diseases and diseases in general. For the elderly and old people, motor activity is an irreplaceable tool against the aging process, it improves the ability to act and the ability to work, and helps to extend their creative longevity. Motor activity and playing sports occupy an increasingly large place in the value system of all layers of the population. The conscious needs of systematic activities are persistently looking for answers to the questions of what is the motor minimum, what should be the content and what rules should be followed in activities with elements from different sports? There is no unequivocal answer to this question, because it depends on age, gender, state of health, professional activity, living conditions, etc. In our opinion, the exercise minimum per week should be 6-8 hours. The content of this volume of work can be optional. We will try to help in this direction.

Physical fitness is an integral criterion for assessing health. It determines the vitality of the organism and its capacity for activity. This means that the higher the level of vitality, the greater the body's reserves for the realization of abilities, and the higher the level of health, the further the individual is from illness. Numerous scientific studies prove indisputably that purposeful motor activity improves the body's physical, neuropsychological and functional fitness, creates prerequisites for preserving and improving health.

Playing sports /generally speaking/ puts the human organism in a new situation - different from everyday motor activity. Whatever the elements of the sport - running, jumping, throwing, using sports equipment, balancing or practicing gymnastic elements, etc. - in all cases, work is being done. This work puts all the organs and systems to the test, which requires the readjustment of the entire organism, as well as additional energy for the work performed. It has already been highlighted that these are exercises for pleasure, to improve the functional capabilities of the participants and for prevention. These are activities with low to medium intensity, although there is a competitive element. Another important feature is /in contrast to active sports activity where the principles of sports training are observed: gradualism, systematicity and individual approach/ that these activities are carried out with no fixed schedule or exact time/day. They are held when there is the appropriate attitude, the need for increased motor activity is felt and, of course, there is the necessary free time and setting. In all cases, fatigue is reached. This fatigue, however, should be a pleasant fatigue - it shows that the body has been toned. The loads must be dosed, they must be in accordance with the current "sporting form" and muscle fever should not be reached /which will pass after a few days, but unpleasant sensations remain/. Fatigue is a normal physiological state - a protective reaction of the body, which gives a signal not to burden the body any more. If this is neglected by the sportsman, it can lead to overfatigue - which is already a disease state.

Fatigue is expressed in a temporary reduction of the body's functional capabilities and its work capacity until its complete cessation and develops after performing certain activity with the corresponding volume and intensity.

Fatigue is characterized by objective changes affecting a number of body functions - motor, nervous, humoral /chemical/ and sensory, as well as some structural changes in cells. In addition

to objective signs, fatigue has its own subjective and mental essence, expressed in a weakening of the will and the concentration of attention, in a feeling of exhaustion and inability to further work, etc. There is not always a parallel between "mental" and "physiological" fatigue.

The concept of "fatigue" due to the presence of many defining conditions is insufficiently defined. This is due to the existence of different theories about its essence, as well as the mechanistic transfer of the fatigue obtained in the neuromuscular apparatus to the entire organism.

The changes caused by fatigue are very different depending on the volume, intensity and specificity of the physical work, gender, age, functional state, meteorological factors, etc. Therefore, generally valid criteria cannot be given and they should be determined in accordance with the specific type of physical activity.

Physiological changes during different physical loads are quite diverse, which speaks of the extremely high complexity of the processes developing in the body. During moderate-intensity exercises /which are the subject of our Sport program/ the mechanism of fatigue in the nerve centers leads to a high degree of excitement, the oxygen debt increases and an increased amount of lactic acid accumulates, as a result of the insufficient oxygen supply to which the nerve centers are particularly sensitive. This leads to a rapid deepening of retention processes in the nerve centers.

Depending on the mass of the muscles involved in the work, local and general fatigue differ. We speak of local fatigue when no more than 1/3 of the muscle mass /approximately 10 kg/ takes part in the muscle work. When fatigue occurs, two phases are observed - surmountable and insurmountable fatigue, in which the first phase gradually passes into the second. The first phase is characterized by a certain discoordination and lowering of the coefficient of useful effect of the physical work with the possibility that the work will continue within acceptable parameters by way of volitional effort. Some define it as mental fatigue. In the second phase, the retention processes in the nerve centers are so strong that the body cannot, with any volitional effort, continue the performance of the physical exercises. The main biological significance of fatigue lies in the fact that it automatically triggers a retention process in the nerve centers, protecting both them and the entire organism from the occurrence of irreversible phenomena.

The changes that occur in the body during physical exercises are aimed at adapting the body to the nature of the work currently occurring. The basis of these changes are the biochemical processes in the working muscles, the magnitude of which depends on the intensity of the currently performed muscle activity, and the nature of their progress - on the body's ability to provide the oxygen and energy resources necessary for the working organs and to remove the accumulated decay products during operation. It is the ongoing muscle activity and the developing biochemical changes in it that represent this system of irritants, which determines the level of changes occurring in the cardiovascular, respiratory and excretory systems and in the blood.

After physical effort stops, i.e. after the irritants causing the work changes cease to act, the organism begins to gradually normalize its changed functions, returning them to their initial level before the load. The period required to completely normalize the state of the organism to the starting position at rest is called "recovery period". During this period, on the one hand, unoxidized products accumulated during work, accumulated carbon dioxide and other substances formed



during the final oxidation of substances must be removed. On the other hand, during this period, the energy losses must be replenished and the spent energy reserves in the working organs must be restored. The implementation of these processes requires, for some time after the completion of the work, a stronger blood supply to the recovering organs with an increased supply of oxygen and building materials. Immediately after physical exertion, depending on its volume and intensity, energy substances are more or less exhausted. Fatigue phenomena are also strongly expressed. Because of this, the body's possibilities for further work at this time are significantly reduced. The period that characterizes this condition is called the "period of reduced working capacity". Gradually, the energy substances begin to recover and after time not only reach the initial level, but their over-recovery also occurs. The phenomena of fatigue also disappear. As a result, there is a period in which the functional capabilities of the organism become greater than the initial ones. This is the period of increased working capacity. It occupies a very important place for modeling the training of active sportsmen. The implementation of any muscular activity is associated with changes in the cardiovascular system and in the nature of blood circulation, in the respiratory system and the processes of respiration and gas exchange, in the exchange of substances and the functions of some endocrine glands, etc. In order to be able to coordinate functions and achieve correlation /probability dependence between random values in the direction of preserving the internal unity in the organism/, it is necessary for the organism to have the ability to guide and regulate the activity of its various parts. Thanks to such regulation of functions, the organism can at any moment increase or slow down the activity of a certain organ. There are two mechanisms of regulation - nervous and humoral. They do not act in isolation, but are interconnected. Nervous regulation has not only a direct influence on the various organs, but also affects them through humoral regulation. On the one hand, it affects the exchange processes by affecting the chemical products formed by them. On the other hand, it directly regulates the endocrine glands themselves and the amount of hormones produced by them, and thus indirectly - the activity of a number of organs and processes. At the same time, the humoral regulation itself, which to a certain extent is subordinate to the nervous one and acts under its controlling influence, through its chemical products affects the nerve cells themselves, changing their condition, and thus the nature of their regulatory action. In this way, a very close interrelationship and interaction is created between the two forms of regulation, which practically expresses the manifestation of the two regulations as one common unit: neuro-humoral regulation. It is through it that the self-regulation of the organism is ensured, which realizes its unity and integrity of functioning in its interaction with the environment.

A necessary condition for the existence of the organism is the preservation and maintenance of relative constancy in the chemical and physico-chemical properties of its internal environment. An essential role in ensuring this constancy falls to the blood. Together with the lymph and the liquid between the cells, blood is this main factor that provides the necessary conditions for the exchange processes in the cell. It ensures constancy of the /osmotic/ pressure, the acidity of the environment, the presence and concentration of the ionic composition, the temperature /incl. heat transfer/, for the maintenance of which the functions of the lungs, kidneys, skin, intestines, liver, etc. play an important role. At the same time, through it, the oxygen and nutrients necessary for the tissues are supplied and the formed carbon dioxide and other decay products are removed, it participates in the protective reactions of the body. Together in the cardiovascular system, blood is in continuous

motion, performing its functions. In addition to being important for metabolism, it carries out the humoral connection in the body and plays an important role in its protective functions. It is a source for the formation of intercellular fluid and lymph. The normal amount of blood is about 5 - 9% or an average of 7% of the body weight. The amount of blood is fairly constant. When the fluid in the blood vessels increases, there is an outflow of the blood fluid to the tissues and the excretion of urine increases. When the fluid in the vessels decreases, there is an influx of fluid from the tissues. The body is quite sensitive to blood loss. An intermediate link in the exchange of substances between the blood plasma and the cells is the so-called “intercellular fluid” located in the intercellular spaces. Due to the constant influx of new fluid from the blood plasma and outflow of fluid to the plasma and lymphatic system, the intercellular fluid itself is in constant motion and renewal.

The lymphatic system starts from the intercellular space through lymphatic capillaries blindly closed at one end /permeable to proteins, fats, sugar and electrolytes/, which join and form lymphatic vessels, which gradually pass into larger vessels. Lymph is a colorless, almost transparent liquid.

The temporary changes in the cardiovascular system that occur during physical exertion affect both the work of the heart, the condition of the blood vessels and the movement of blood in them. A defining moment for all these changes is the increased need for oxygen, which must be supplied by the cardiovascular system. Of utmost importance is the speed of this delivery, which depends on the work of the heart and the resistance offered by the blood vessels. Changes in the activity of the heart during physical work affect its pulse rate, stroke volume and minute volume, etc. Immediately after starting the physical work, there is a rapidly increasing acceleration in heart rate. With the termination of the activity, the changes that occurred during the work period are also terminated. Blood pressure is restored first - in about 30-60 seconds. A slow recovery phase follows, which can last from 20-30 minutes to several hours.

Breathing is a complex process that ensures the delivery of oxygen from the external environment to the cells of the body, its inclusion in the oxidation reactions taking place in them and the removal of carbon dioxide formed during these processes. Blood binds oxygen and carbon dioxide in a physico-chemical way and ensures their further transportation. The cardiovascular system, through the movement of blood, carries oxygen to the cells and carbon dioxide from the cells back to the lungs. Through these processes, the oxidation processes in the cells, related to the breakdown of substances and the formation of energy in them, are ensured. Therefore, respiration, in a broad sense, is understood as all the processes described above, which can be combined into the following three types:

1. External or pulmonary respiration
2. Transport of gases through the blood
3. Internal or tissue respiration

Physical work and sports loads are associated with a multiple increase in energy expenditure. In addition to energy sources, oxygen is also needed for its production. Therefore, physical exertion

is accompanied by significant changes in the functions of breathing and blood circulation, i.e. of the so-called cardio-respiratory system that supplies oxygen to working muscles.

Simultaneously with the beginning of physical exertion, the activation of respiratory functions begins - breathing becomes faster and deeper. The physiological meaning of this reaction is to maintain constancy in the alkaline-acid balance of the blood by maintaining a relative constancy in the composition of the alveolar air. At the same time, expansion of the capillary network in the lungs occurs. Dilation of the capillaries improves the absorption of oxygen by the tissues. The number of heart contractions increases and thus a greater amount of blood passes through the lungs per unit of time. The favorable relationship between the functions of breathing and blood circulation is of crucial importance for the performance of the athlete. As soon as the physical exertion ends, changes in breathing occur - the so-called "recovery reactions of breathing". They cover the changes in gas exchange from the moment of cessation of work until the establishment of these indicators at their level before the start of work, their baseline level. How these restorative reactions will proceed depends on a number of factors - the most important factor is the duration and intensity of physical exertion, the mode of rest, the environmental conditions /temperature, humidity, etc./, the degree of training, etc.

Sports trauma is always a problem for sportsmen. It is characterized by some features that distinguish them from other types of trauma:

1. Sports trauma mainly affect children, adolescents and youth
2. Sports traumatism has a specific localization and frequency of injuries: The lower limbs are most affected, followed by the upper limbs, there are few injuries to the head and even fewer to the body. The most attacked unit of the musculoskeletal system in sports injuries are the joints, mainly the lower limbs. For example, the knee joints account for half of the injuries.
3. Sports injuries are relatively mild - the most of them /90%/ recover in 3-5 days.
4. Sports trauma in terms of frequency, localization and type largely depend on the type of sport.
5. The most common way of getting a sports injury is impact: when colliding with an opponent, object, or device, when falling, etc. In second place is exceeding the normal range of motion, which leads to overstretching and tearing of tissues.
6. The characteristic of sports trauma is complemented by the so-called microtraumatism /especially in elite sports/ - a high frequency of small repeated traumas.

In view of all the above ideas set out in our short, accessible and based on scientific information & life logic introduction, this new Sport program deliberately lacks any physical exercises with contact between the participants of the "competing" teams. There are no elements of different sports included that could subject participants to unnecessary risks and challenges. While for elite athletes sports is a voluntarily assumed health risk /in the most general sense/, playing sports for health purposes should become a celebration of the spirit, a desired pleasure.

So ends our short tale about the complex relationships in the human organism during sports - a tale that is actually a truth.

**SPORT PROGRAM  
FOR  
YOUNG PEOPLE AGED 15-24**



Physical education and sports build healthy habits that last a lifetime. This brings the effect of physical education beyond the schoolyard and highlights its potential impact on public health. To achieve more comprehensive educational goals, sports programs should focus on the development of the individual, not just on the development of technical sports skills.

The physical benefits of playing sports are well known. Physical activity also has a positive effect on practitioners. Sport is an attractive activity for young people and is often relied upon as a lure to recruit young people to health and education programmes. Sports and development projects with a focus on educational outcomes use sport as a means of sending educational messages to participants and, in some cases, to spectators. In addition, some programs aim to promote and develop other aspects of education, such as school attendance, leadership, etc. There is nothing wrong with that. But ... sports alone do not automatically lead to positive educational outcomes. We join that part of sport programs, which deals with the positive impact of sports on the health and development of adolescents. In our opinion, children should be encouraged to participate in a number of various activities, in order to build a proper motor culture, strengthen health, temper, and have a positive attitude towards sports, rather than early orientation to a single sport.

Adhering to the topic - "Sports for young people aged 15 - 24" - we cannot help but mention the features of this set period in the life of young people, namely: The period should be divided into two sub-periods - late puberty /people 15 - 18 years old/ and youth age /people 18 - 24 years old/.

During late puberty, boys continue to increase in height, but especially they grow stronger and bigger. They also increase their speed, but already at a slower pace compared to early puberty. Girls are generally done growing in height. They continue to accumulate fat tissue.

At youth age, generally speaking, the highest physical capabilities are reached /both for athletes and those who play sports for health/. In principle, all types of sports are suitable, but people choose sports that they like and that they are devoted to. Sport is a great opportunity for young people to become independent, identify with a group and increase their social contacts. Positive sports experiences lead to the continuation of sports in adulthood.

While during childhood the leading factor for doing physical activities is the game, for the youth period it is the emotion. Regardless of the fact that they are already adults and have a built and shaped body, these are very young people, with little experience, immature in life. There is a big gap between desire and physical ability. A large part of adolescents were engaged in organized sports of some kind in their childhood. This is good because they have loved this sport and have acquired some skills and qualities. Another (perhaps the larger) part think they have trained, but in fact have only attended a few training sessions.

It is well known that people strive to prove to others that they can do anything. Even before the new era, the desire to measure strength /whether running, jumping, throwing, wrestling or any game/ led to the appearance of competitions.

It is one thing to show what you can /if you really can/ and quite another to think you can. Then comes personal disappointment, which is certain. However, an ill-measured risk and the desire to perform an element that has never been performed can lead to a severe sports injury.

We try to understand the psyche of young people. The more observations we make, the more we become convinced of two things:

1. Whoever was involved in an individual sport as a child and loved it, he or she continues to be involved in this sport in some form /a typical example is athletics/;
2. Whoever has been engaged in a team sport /or has not engaged in any sport, but has the desire/ continues to engage in it and/or another team sport regardless of the circumstances - on the beach, in snow, etc.



It is very difficult to offer young people mobile games and elements of a given sport. For them, playing sports is always a competition /even at a low level/. However, there are ways before starting the "competition" itself, the sports teacher /if there is one/ or someone more experienced from the group /who has been involved in organized sports for a longer time/, to conduct the warm-up, which includes running, breathing and light calisthenics to prepare the joints and muscles for the upcoming workouts and maybe a relay race /especially if there is a football game coming up. At the end of the game again some gymnastic and breathing exercises should be performed. And that's more or less all the youth would go for...

Again we come to the term "game". In contrast to children's play, which is entirely entertainment /regardless of the many benefits it brings to the child's organism/, here it already has a new meaning: sports activity with certain rules, fast movement, competition.



Playing is one of the most enjoyable experiences in our lives. It is an action that at first glance may seem pointless, but it is extremely necessary and a very pleasant activity. The game is an attractive and joyful activity, but it itself turns out to be a serious and difficult problem from a philosophical point of view. Some researchers analyze in the game the possibility of releasing the unspent excess energy. Others - that all people have a tendency to imitate, and by practicing, they improve their abilities.

One of the most characteristic qualities of the game is its inherent tension. It causes uncertainty, it gives a chance, so if one wants to succeed, it is necessary to build a sense of complete concentration.

The game is an activity, which means that it is an expression of certain inter-relations between the person and the surrounding reality. It enables the development of the mind and wit - requires quick reactions and quick making of correct decisions in constantly changing situations. It fosters order and discipline; creates harmony, which is a striving for perfection; gives freedom of action; enables a different state of mind.

After all, doing sports for health is a process with a healing focus - not only improving physical qualities, but also prevention for many diseases.

The motor elements which the games are saturated with have a naturally applied character. Running, jumping, throwing, catching, passing, climbing, crawling, leaping are elements inherent in human nature.

Functional load is registered by the frequency of heart contractions. The magnitude of its manifestation depends on many factors, but above all on the activity and condition of the cardiovascular and circulatory system, on the volume and intensity of the means that are used. Through it, the body's energy is provided and it directly affects the development of conditioning abilities. Functional load is defined as low at a heart rate of up to 130 beats per minute, medium - between 130 and 160 beats per minute, and high - over 160 beats per minute. The proposed sports activities for toning and health encompass the first two categories /small and medium/. The large loads must be with a short duration!

Athletics games, especially running games, are highly emotional and dynamic. The average heart rate of this group of games is 165 beats per minute, i.e. the load is high. In order to organize a relay race for our purposes, the running distance of each of the participants must be small /60-100 m/. We are looking for the emotion, not the heavy load.

In jumping and throwing games, the average heart rate is lower. For the first, it is 150, and for the second, it is 143 beats per minute. Both types of games can be classified as games with a medium load /up to 160 beats per minute/, which has a beneficial effect on the body and is a good means of strengthening motor skills.



Running is one of the most popular forms of exercise because it requires no special equipment. It strengthens joints, bones and muscles and is a great aerobic exercise that will help you lose weight and maintain it optimally, while improving your mood and toning up your body.

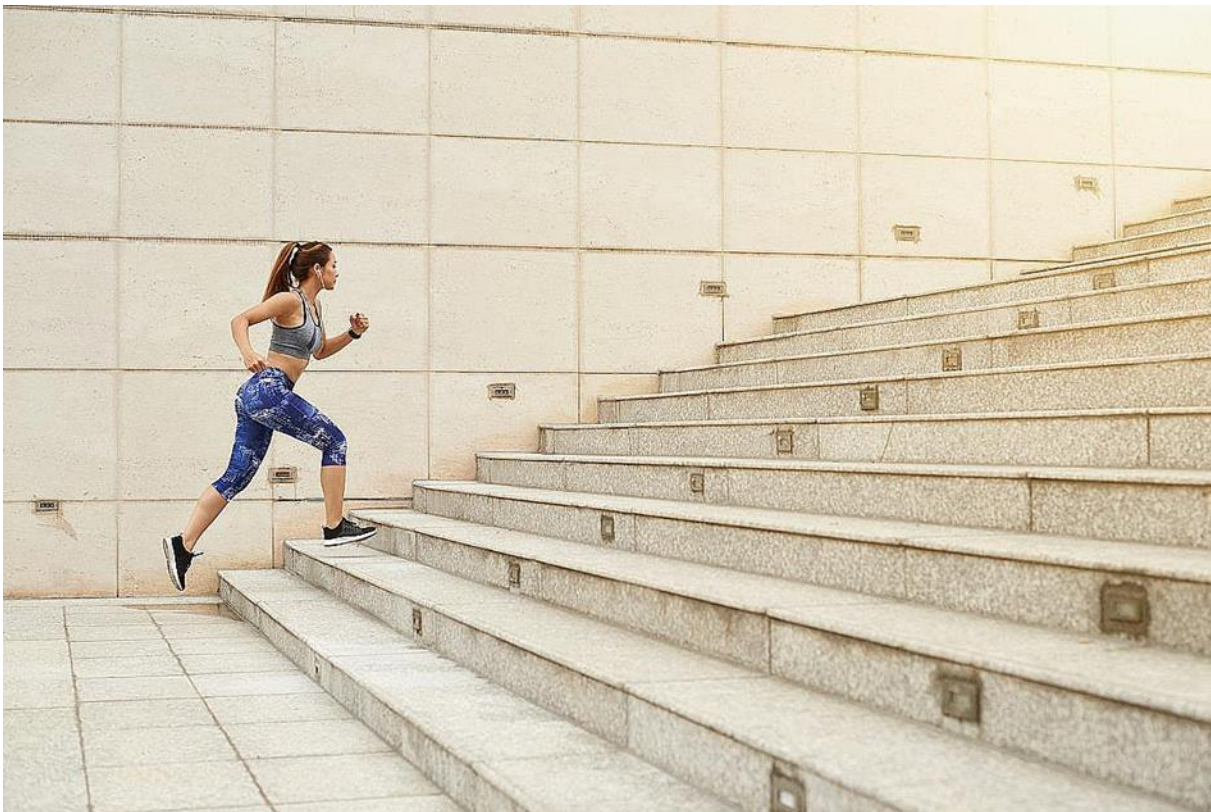


Relay athletics games provide great opportunities and a variety of performance options:

1. Classic execution of a relay run on an athletics track /the circuit of which is about 350 m/, with the distance being divided into four posts. This is the one with the greatest physical load.

2. A 50 m relay race to a set cone and back to the start, where the relay takes the second post. And so it goes until all participants from both teams are lined up. The idea of this game is to introduce the short "break" /when the participant approaches the cone and goes around it/.

3. A similar option is if two plastic hoops are placed on the path of a 90 m long course / at 30 m and 60 m respectively /, in the first of which a small ball or other object is placed. Two teams participate. When a signal is given, the first participants from both teams start the relay game, run to the first hoop, take the ball and run to the second /where they leave it/, continue running to the end of the distance /the plastic cone/. On the way, they take the ball from the second hoop, run, return it and put it in the first, and run back to the start, from where the second participants continue the relay.



If traditional running isn't your thing, try this. We guarantee you a greater workload.

Athletics games with jumping and hurdling also provide many options:

1. Classic performance in sandbox - long jump with running down /eg. 3 - 5 m/ as individual participation. A minimum of 3 attempts are made and the best performance of each participant is counted, followed by the final ranking.

2. Standing Double-Leg Long Jump - Again, this is an individual discipline. It is performed on a rubber track, previously graphed in centimeters and placed on a hard flat surface. Several attempts are made /according to a prior agreement/ and the best performance of each participant is counted, after which the winner is announced.

3. Here is a combination game that can be played as a relay game involving two teams. The length of the track is 50 m. At 20 m from the start there are low obstacles that the participants must overcome. At 10 m from the obstacles, 5 plastic hoops are arranged along the course, which must also be overcome, stepping into each hoop with one foot in turn. After overcoming the hoops, there is another small part of the race course, which the participants overcome by running to the end of the course /plastic cone/. They return running to the start and the relay continues until all the participants have their turn.



Looking for a good leg workout that will make you work up a sweat? Grab a rope and start jumping!

Let's also give throwing its due as an athletics discipline. For obvious reasons /and for safety purposes/, participants in our competitive games will not throw a javelin or hammer, nor shot put. These devices will be replaced by medicine balls and other small balls /eg. Tennis balls/. You should also think about who will bring back the thrown items. If a court of sufficient length is available, conditions exist for competitive play, the aim of which is to throw the small ball as far as possible. If there are no such conditions, a medicine ball can be used /not large, weighing several kg./. There are different implementation options:

1. Standing throw of the medicine ball /as an individual discipline/. 3 attempts are made and the best achievement is counted. Thus, the competition continues until all participants take their turn;

2. There is a variant with two teams participating. A distance of 20 /or more/ meters is defined. The first participants start - they throw the medical balls and then, from the spot where the ball landed - throws the next one, until the entire distance is covered by all the participants from the respective. Thus, this game, which is based on throwing, becomes a special type of relay race along the track;

3. Here's another throwing game - this time at a target. It seems very easy to implement, but in practice its final result is rather unpredictable: Two teams are involved. The game is not played for a limited time, but for accuracy. At a distance of 5 m, 10 m and 15 m from the starting line, 3 plastic bins are placed in front of each team. The first players from both teams receive three tennis balls. Each of the contestants throws one ball to each of the three baskets, trying to put it in. This is how all competitors are lined up and the result is calculated. It is theoretically possible for the result to be a tie. In this case, 1 basket is placed at a distance of 20 m. and each one of the participants from the two teams makes one throw. The winning team is announced.



Fortunately, in many Bulgarian towns there are separate public sports grounds, equipped with beautiful devices and exercise machines.

In secondary education, sports games are a priority, with regards to the harmonious development of the body, improvement of the body's functional capabilities and general sports training.

Motor activity is possible only through the manifestation to a certain level of motor abilities - speed, power and endurance.



Regardless of the fact that each motor quality has a specific form of manifestation, general regularities are found in their development, as they are a function of the individual's neuromuscular apparatus.

Speed abilities are primarily related to speed as a motor quality. It is the ability to perform motor actions for a minimum period of time, which depends on the mobility of nervous processes, the functional status, exchange processes, strength and elasticity of muscles.

Strength as a motor quality forms a person's strength abilities. The manifestation of other motor qualities - speed and endurance - also depend on its level. It is the ability to overcome or counteract external resistance through muscular effort. It is based on short-term, but definitely high

contractions of large muscle groups. Moderate and long-term manifestation affects endurance, and the instant reaction of muscle groups affects speed.

Endurance is the motor ability to perform prolonged work without decreasing its efficiency. It depends on the status of the cardiovascular and respiratory systems. It is regulated by the activity of the brain and is manifested in the resistance of the body to the constantly occurring fatigue. In general, endurance is expressed in a decrease in work capacity, a consequence of the accumulated waste products in the muscles, a change in the acidity of the blood and an increase in the alkaline reserves in it.

We define the ability to perform low-intensity work from five minutes to several hours as general endurance, and the functional ability of the body to efficiently perform specific work related to big and relatively long-lasting muscle efforts - special endurance. For our needs and purposes, we aim to improve overall endurance. The dynamism and maintaining of a pulse rate of 150 and more beats per minute imply the provision of short-term rests, which favorably affect the respiratory system in particular.



No matter how much we look for emotion and pleasure from sports activities in our free time, we still have to comply with the principles of the training activity. Whatever we call it - a sports event or a competition, at the level of amateur sports - it is a training session. Its content and duration

depend on the age and level of preparation. Usually the duration varies from 70-80 to 120 minutes. It is divided into three interrelated parts - preparatory, main and final. If we assume that the duration is 90 minutes, then the preparatory part should not be less than 20-25 minutes. Its content is focused on motor actions, selected in such a way as to affect both the general condition and specific muscle groups of the musculoskeletal system, which will take the greatest load during the upcoming motor activity. The means to conduct it are diverse. Some of them are mainly athletic, others have elements of gymnastics, and others are more specific /combined/ and are intended for warming up before sports games. The main requirement is that the means used are in an ascending gradation of impact and lead to a state of tolerance to higher and specific loads in the main part of the training session. The dosage by volume should not be large. The gradual increase in intensity will prepare the functional systems and the musculoskeletal system for the upcoming loads. Through the games in the preparatory part, a physiological and emotional effect is achieved above all. Athletics games, relay games, which include running, jumping, hopping, squatting and standing, are suitable for preparing for upcoming competitive games, mostly related to athletics. Those with gymnastic elements - rolling, flipping, jumping and skipping - for more gymnastic events. Ball games, those of a sports-preparatory nature, with catching, passing, throwing, dribbling, juggling, foot, hand and head performances with motor elements of sports games, also have a place in this part involving volleyball players, basketball players, football players.

The main part takes up about two-thirds of the training session's duration. Both in the preparatory and in the main part, the main game elements are aimed at improving specific motor skills. Games with medium and even slightly higher physical load bring them closer to the competitive environment.

The final part is not only the time for debriefing, but also the time for light relaxation and breathing exercises - a time during which the body gradually begins to recover - the functions of the respiratory and circulatory systems are normalized, muscle fatigue is restored, as well as training excitement. Relaxing, stretching exercises to stretch the muscles, as well as games with low intensity and dosage are aimed at psycho-functional recovery.

In conclusion, we would summarize that games and game tools are very useful, especially in emotional terms, but we must keep in mind that they are an additional possibility and cannot fully replace the specific impact of sports games.

The complexity of the impact of sports games on the participating organs simultaneously improves the basic motor qualities /strength, speed, endurance, agility/, body functions /breathing, blood circulation, etc./. They are an ideal means of developing vital skills and improving physical qualities. Different movements and actions are used in sports games: walking, running, jumping, various throws and hits on the ball. Participants strive, using appropriate game techniques together with their partners, to achieve an advantage over their opponent, who is actively resisting. This opposition leads to a constant change in the conditions for the execution of the planned actions of an individual player and the team as a whole, to a rapid change in game situations. Players are faced with various tasks that require a timely solution. Therefore, an elementary set of game techniques, the ability to quickly and correctly assess the situation, the selection and effective

implementation of an attacking or defensive action for the specific game situation, special qualities and abilities are needed to effectively perform in a sports game.

Before concentrating on the specifics and application of team sports, the most loved and most practiced - basketball, volleyball and football - and their place in our program, we would like to briefly present a sport with a two-thousand-year history, originating from Greece, India and China. It is a favorite sport of millions of people to this day. It can be played by 2 or 4 players using rackets and shuttlecocks on a court - 13.4 m long and 6.1 m wide, with height of the net 1.55m, or it can be played just for fun (noncompetitively), right next to the sport court, creating additional festivity of any sporting event. Of course, we are talking about Badminton /in German: Federball/. Badminton is a racket sport played by two opposing players, or two opposing pairs, occupying opposite halves of a rectangular court separated by a net. Players score a point by hitting a shuttlecock with their rackets, so that it goes over the net and lands on the opponent's side of the court. Play ends when the shuttlecock hits the ground, and it can only be hit once on each side before it passes over the net. It is competitively played indoors, due to the dependence of the shuttlecock on wind. Federball can be played and is played outdoors. Badminton is an Olympic sport. Each game is played to 21 points and we have a winner when one of the players/teams reaches 3 games won. The server and receiver stand in diagonally opposite fields. The serve on an even number is played from the right, and on an odd number - from the left. The serve must be executed, so that the server's racket and shuttlecock are below the waist, i.e. the service is performed from the bottom up and diagonally towards the opponent's court. In the traditional badminton scoring system, games were played to 15 points, except for women's singles, where the game was 11 points.



Basketball is one of the most interesting sports games. Its dynamism and emotionality make it a favorite sport of youth from all continents.

The various qualities that basketball creates, such as speed, strength, agility, endurance, intelligence and accuracy, lead to a perfect development of the motor apparatus and the coordination capabilities of the human organism. The rational mastering of all natural movements with which the game is characterized - running, jumping and throwing, to a large extent solves the question of all-round physical and mental development of the human personality. NBA statistics show that there are over 100 combinations in some basketball games. And it cannot be otherwise - there is no way, on a field with a length of 28 m and a width of 15 m., these big men with perfect musculature, over 200 cm tall and weighing over 100 kg, to dominate in offense or defense without using creativity and complicated game tactics. Overplaying comes from perfect commands from the central nervous system combined with playing skills and qualities. A wide variety of conditioned reflexes is a distinctive feature of highly skilled basketball players. Along with the harmonious development of the motor and vegetative functions, sports rivalry develops and improves the tactical thinking of the competitors and establishes lasting connections between individual motor habits, which are widely used in human's work and everyday life.

Basketball as a sport develops to a significant extent the moral-willed qualities of its practitioners. It contributes to the creation of a high intellect, educates in a collective spirit and builds a sense of ethical and aesthetic relations.

The game of basketball is also used a lot as an auxiliary tool in the training of track and field athletes, skiers, swimmers, weightlifters, wrestlers, gymnasts, etc. bringing variety to the training process and reducing nervous tension. With the holding of the first official competition /1891/, basketball entered the family of major sports. The modern intensity of the game is unthinkable without mastering the speed technique in the complex and dynamic environment of the basketball competition. Quick, accurate and economical ball handling is required. This, in turn, leads to a boost in quality. One of the main reasons for this is the discovery of the complex mechanism of human motor activity, which is based on motor qualities and their specific manifestation in accordance with motor habits.





The modern intensification of the game sets demands for impeccable athletic development and universal technique. It is on this basis that the necessary specialization in positions is built, depending on the needs of the tactics.

Our sport program's key aspiration is the pleasure of motor activity. At the same time, we must ensure the correct execution of all elements of the game, as well as strict compliance with the rules. No matter how amateur the display is, in no case should we allow it to become a parody of the sports game. On the one hand, this will bring the events closer to real competitions, and on the other hand, it will mobilize the participants and this will protect them from sports injuries.

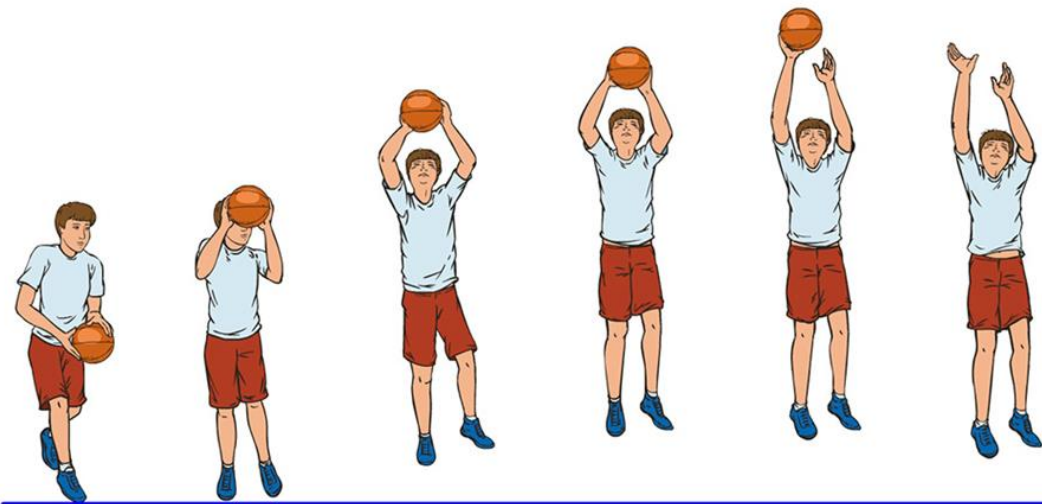
As we mentioned above, whether it will be a practice or a competitive game, the three parts must be observed: preparatory, main and final part. In the preparatory part, after a short steady run, static gymnastic exercises follow, which should prepare joints and muscles for the upcoming specific loads.



The main elements of the game are, as follows:

#### Catching and passing

They are performed very quickly and in a complex combination with the other elements of the game. Often, passing is done without holding onto the ball, straight off the dribble or in the air with one touch. There has been a significant increase in passing by hitting the ball into the ground and in aerial passing, especially by tall players under the basket.



### Moving the ball /dribbling/

The activation of the game is inextricably linked to the increased role of dribbling. At present, moving of the ball without visual control with the left and right hand, while suddenly changing direction and pace is the main “weapon” of the player in the preparation and implementation of an individual breakthrough. Its importance has grown even more in active forms of defense /especially personal press/. In these defenses, when the connection between the players is almost broken /in terms of passing/, masterful dribbling remains the only means of connection and interaction. That is why in mastering the dribble some players have developed such a perfect ball control that it resembles juggling.

### Shooting

This is the main technical skill through which the direct goal in the game is achieved - scoring points. All other elements are auxiliary, while shooting at the basket is an integral indicator of the general efforts of the players and the team as a whole. In modern basketball, there is a trend toward an increase in shot attempts. By mastering the accuracy of shooting, the total number of shots also increases. Most often, the struggle between offense and defense affects the ratio of shooting from close, medium and long range. As a trend, there is a decrease in long-range shooting and an increase in medium-range shooting. This phenomenon is related to the rapid mastering of shooting with a rebound. At the moment, it's safe to say that the best teams in the world use a wide range of techniques to shoot with enviable accuracy, with great speed and in complex game situations. This includes the various rebounds, dunks, shooting with your back to the basket, controlling the ball behind your body and many others. Accurate shooting requires a lot of practice and thousands of attempts.



The short theory we provide is intended for the group leaders who may not be basketball experts. Our goal is that the participants in sport events with basketball elements, getting to know the basics of the basketball game, as well as some tactical peculiarities, will be more diligent during the event. That will bring them somewhat closer to the real basketball battles and thus motivate them even further.

#### Main functions of offensive players

Modern basketball places high demands on the players to master the entire technical and tactical repertoire, which means an increase in all-round physical training and, in parallel, the improvement of technical skills and abilities. The offensive game, in most cases, as an ending of the attack, is built on the interaction between two or three players, who at a given moment solve a specific task. This interaction represents a tactical combination. Modern basketball is characterized by combinations distinguished by their suddenness and purposefulness. The requirement to strictly apply the learned combinations, without considering the situation, is incorrect. It is also necessary to determine the number of combinations by their correct and permanent mastery. Better few in number but well mastered combinations, than many in number but poorly mastered. Of great importance to modern basketball is the use of shielding. The reason for their continuous application lies in the very essence of the game - its collectivism and dynamics. The high tempo of the contest, the small area and the speed with which individual combinations develop increase the role of instantly slowing down or extending the path of the defender. This creates conditions for the attacker to be released and attack the opponent's basket. Such an interaction, which aims to free an attacker by temporarily holding or extending the path of protection, is called shielding.

Successful offensive play depends primarily on the collective efforts of the entire team, aimed at maximizing the use of comfortable shooting positions at the basket. Depending on the way in which the offensive actions are organized and carried out, there can be a quick /rushing/ attack and a gradual /positional/ attack. The quick attack is most often applied when the opponent does not have enough time to fully organize their defense. When the attacking team encounters an organized defense, overcoming it requires a longer preparation, which implies some time to deploy the players in the most favorable positions, according to the adopted system of play. Hence the name gradual /or positional/ attack. When the opponent's attack has been interrupted /as a result of a wrong pass, dropped ball, interception, etc./ the defending team goes into a counter attack. Its organization rests on the same principles as the rapid breakthrough. The counter-attack is the result of active defense play and can be carried out by the whole team or a group of players.

#### Main functions of defensive players

A good and active defense not only helps the result achieved in attack, but also has an influence on the following actions of the players. Defensive players give their offensive teammates the confidence to take advantage of every opportunity for individual breakthrough and shooting from different distances. Both in offensive play and in defensive play we make a distinction between individual, group and team actions. Individual actions are those in which the defender, moving with a basketball stance, takes the correct position and uses his/her technical skills to prevent the attacker from completing the attack play. Group actions are interactions between two or three players aimed at thwarting the intentions of opposing attackers. They are very diverse:

helping with blocking the “corridors” to the basket - the defender not only guards an attacker, but also assists his/her teammates by filling the corridors to the basket. Change of positions between players, in the event that during the game a short defender happens to face a tall forward. Playing with numerical inequality - the defenders with several passes between them give the team time to organize in defense. Team defensive actions depend on the principle which the defensive actions are built on: personal defense, zone defense and mixed defense. In the case of personal defense, it is played against a penetrating opponent's attacker /either as soon as he/she passes the center line, or closer in his/her own field/. It is usually effective, except in cases when the opposing attacker is also a good long-range shooter. In zonal defense, each player defends a certain part of the field /zone/ and responds to the actions of the opposing attackers located in this zone. A basic principle of players performing zone defense is to always be between the ball and the basket. The focus is mostly on the ball and the area to be defended. This type of defense builds on the active movements of all players. Modern zone defense can be seen as an active half-court personal defense and continuous player rotation. There are many types of zone defense, but of particular interest is the zone press. It is applied all over the basketball court. In general, the attacking player is doubled and the other defenders prevent his/her teammates from receiving the ball. The essence of the system is that pressing defense is applied already in the attacking half. Mixed defense is applied when the opponent has one or two very strong players - personal defense is applied against them, and at the same time the defending team lacks a key player who is a good defender - then personal defense is combined with zone defense. The result being a mixed defense.

After this short theoretical review, it’s time for the game. If there are enough participants and favorable conditions, it can be held on a standard basketball court, specifying in advance the duration of the two halves or four quarters - they could be shorter than the ones for professional. Also there is no need to count the pure playing time only /stop the clock every time/, as it would make it difficult for the young participants.

There is another exciting way of playing basketball:

Streetball is similar to basketball, but the rules are not as strict and could be negotiated by the players depending on their preferences. It is most often played on a half court /one basket/ and every basket scored, regardless of where it was scored from, counts for one point. If there is a marked 3-point line, the basket behind it counts as 2 points. Competitive streetball teams consist of two or three players. They play either to reach a certain number of points /most often 11 or 21/, or for a certain time /by agreement, e.g. 7 minutes/, after which the winner is determined based on the point difference. In the event of a tie, overtime is usually played /for several minutes/ or until the "golden basket" is scored. In general, in streetball there are no restrictions on the number of personal and team fouls. When a foul is committed, the opponent re-starts the game from the end line or gets a single shot from the foul line. Principally, streetball is most similar to the game "3 x 3", which is also played using one basket with three players per team, but with stricter rules. That's why we don't offer it as a part of the sport program.



Volleyball is on the rise worldwide, with over 100 million people actively involved. Specific features in the motor characteristics of the volleyball game are quick and sharp movements over short distances, repeated vertical jumps and jumps combined with movement, virtuoso landings. In volleyball, we talk about speed-jump endurance, reaction speed and rebound speed. As an example of a complex manifestation of the qualities, we could point to any element of the complex technique - serving, dunk, etc. The complexity of game actions requires not only mastering the entire arsenal of technical skills in defense and attack, but also using it in various combinations - in conditions requiring rapid switching from one form of movement to another, completely different in nature, mode of operation and speed. The speed of the ball after dunk reaches 30 m/sec. and when serving - 12 – 15 m/sec. With this dynamism, it is necessary to respond correctly and in time to the information received from visual perceptions. Motor reactions in volleyball are complex, as they take place in the presence of many and different types of stimuli: the movement of the ball, of the opponent's and own players, referee signals, reactions of the audience, etc. In order to be able to act quickly and rationally in such a complex situation, a great concentration of attention is required. Any distraction leads to mistakes and upsets the team's tactical plan. If we use the physiological classification of sports, volleyball should be counted among the physical exercises that are performed under non-standard conditions. Moreover, the duration of the games has no time limit. A characteristic feature of the volleyball game is the alternation of active /working/ phases and phases with relatively passive short-term breaks. For one competition, depending on the number of games played, the working phase is repeated 170 - 350 times. With a long duration of the game /up to 3 or more hours/ the high intensity puts the athlete's body to the

test /heart contractions up to 200 and more per minute, weight loss 2.5-3 kg./. Another specific feature of the volleyball game is the need to anticipate /precede/ the actions of the opponent, in order to respond as quickly as possible, to go in advance to the place from which the ball is expected to come. The preliminary movement towards the ball and the correct choice of position are possible as a result of perceptions and information coming from external irritants /ball, teammates and opponents/, as well as from certain memory departments, where this information is accumulated in the process of game activity.

Characteristic features of modern volleyball matches are the high mental tension, the tense competition, which, when the opponents' forces are equal, could be rather dramatic, the climactic moments with maximum tension of the physical and mental forces of the competitors.

The technique of the game is a set of special motor habits necessary for the player to successfully play the game. To put it more generally, the main indicators of the quality of sports technique are its efficiency, economy and rationality. In order to determine which technique is the most rational, we need to know the structure of the system of movements, the construction of the individual skills, the inter-relations between the individual elements.

The main components of volleyball technique are: pass, serve, dunk and block. However, they have many varieties, which is why the playing technique is determined as rich and varied. An important feature of volleyball technique is that its quantitative, temporal and spatial characteristics are too limited. With no more than three touches to the ball, one must switch from defensive to active offensive actions. At the same time, each touch to the ball is very short-lived - within tenths of a second, and excessive holding of the ball is sanctioned as a foul by the rules.

In its evolution, volleyball technique has constantly developed, changed and improved, mostly as a result of the unity and striving between attack and defense. The struggle for supremacy between them is the internal engine of development, which constantly enriches the technique both quantitatively and qualitatively. Attack has the initiative, while defense seeks ways to effectively counteract.



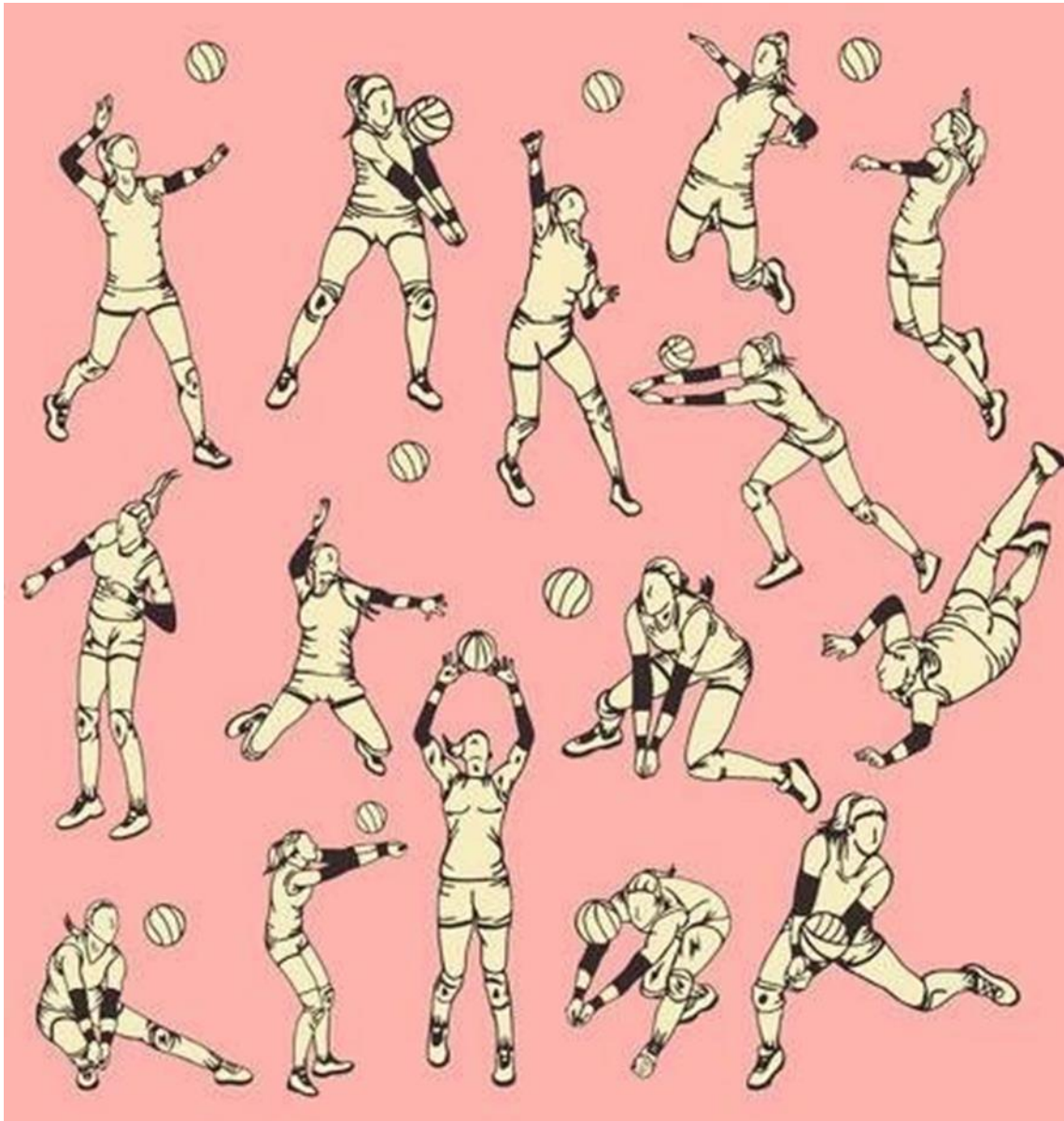
As with any training session or before a competition, it starts with a warm-up. It involves running evenly along the sidelines of the pitch, then starts with spot-on calisthenics to prepare joints and muscles for the stresses ahead. At the beginning, stances and elements of the game /movements/ are performed without the ball. They are directly dependent on the game situation in which they are used. For example, the move to perform a block is different from the move to dunk. The basic volleyball stance is the so called “ready position” - for this purpose, the legs are shoulder-width apart, parallel to each other, one is slightly forward, the knees are bent. The weight of the body is shifted slightly forward. To avoid excessive staticity and tension while waiting for the ball, the player steps from foot to foot /dynamic stance/. The arms, bent at the elbows, are in front of the body at waist level. The player constantly monitors the movement of the ball, the actions of his partners and the opposing players. Movements in volleyball are very different - walking, running, jumping. Most movements are characterized by speed and impetuosity, manifested in a short distance /4-6 m/, sometimes followed by a change of direction. What unites all volleyball movements is their fluidity, due to the fact that the movements are performed without full extension in the knee joints and without active movements of the hands. Due to the impetuous nature of some movements and the need for a quick, sudden stop, it is necessary to make the last step wider /this is how inertia is overcome/.





When playing with a ball, we distinguish the following elements: pass, service, dunk and block, which we will briefly describe. These are the elements that are practiced before a competition.

The two-handed overhand pass is mostly performed on the second ball to set up an attack. It can be performed forward /most often/ overhead, backward /over the head/, sideways, with a landing /backward and sideways/ and with a lunge. The bounce serve in modern volleyball is most often used when playing the second ball - when the first ball is served high and close to the net and playing it from a basic stance is almost impossible, or in cases where greater speed is sought in organization of the attack. The two-handed pass from below is especially necessary and appropriate in cases where the ball flies at a high speed or with a particular trajectory. The technique of this grip is not too complicated. At the same time, it is one of the most rational moves in the game of volleyball. Its rationality is mainly expressed in the fact that, immediately after its use, the player is ready for the next actions.



Service as an element of game technique has come a long way in development. From a tool to get the ball into play, it has become a powerful attacking tool these days. Through it, the team performing it can directly score a point or thwart or hinder the opponent's intentions when organizing the attack. The opening stroke is performed with one hand. The execution of service goes through several interrelated phases:

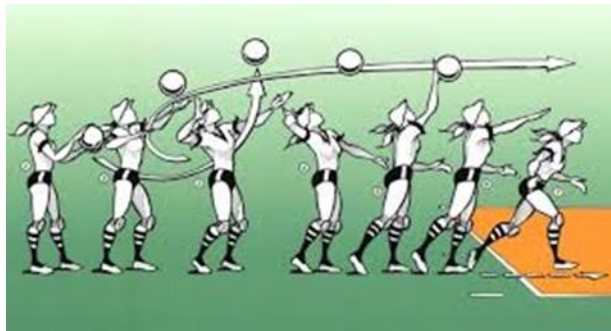
first phase - starting position

second phase – tossing the ball

third phase – hitting the ball

fourth phase – accompanying movement

Some newer types of serving have the final phase missing.



In general, there are low and high services, which have many variations of execution. Low first stroke is performed less often. It aims to get the ball into a certain area of the opponent's field. High service is an attacking stroke and therefore is used much more often.

The dunk is the finishing stroke with which the ball is directed with one hand above the level of the net into the opponent's court, in order to make it as difficult as possible or even impossible for them to organize and carry out an attack. In many cases, after a dunk, the ball hits the ground within the opponent's half and a point is won. Dunk is one of the complex moves in volleyball technique. Its effective use during the game is related to the complex manifestation of the qualities of speed, strength, agility, flexibility, body control, and high coordination ability. There are different dunking techniques, but they all go through the following sequential phases:

first phase – gathering momentum

second phase – jumping

third phase – hitting the ball

fourth phase - landing

We should also mention another technical method - false dunk. It is used when the attacking player sees a solid opponent block and when the opposing defense does not cover the playing field tightly. In these cases, instead of dunking the ball, he/she gently plays it over the block or scores a point in the opponent's unprotected field with a light directional stroke.

At the modern stage of development of the volleyball game, blocking is the most effective defensive tool. The requirements for the players organizing the block is to be able to jump high /not less than 50 cm from the upper end of the net/.



The blocking technique can be conditionally divided into the following sequential phases:

first phase - starting position

second phase – movement /if necessary/

third phase - choosing a place to jump

fourth phase - choosing a moment to jump

fifth phase – positioning of the hands at the moment of impact

sixth phase - landing

For the purposes of our program, a volleyball court is needed /can be outdoors/ with the standard dimensions: length 18 m. and width 9 m., outlined and divided along the length into two halves, two stable poles, between which a net is stretched at a height of 243 cm for adults and 224 cm for children, as well as a ball.



If these conditions are met, we recommend that the matches be played up to two out of three games won /up to 25 points/, or if it is necessary to play a third game - in the event of a tie in the first two, it should be up to 15 points. In this way, we will make the task of our participants easier /in comparison with the rule of competitive volleyball - victory when winning 3 out of 5 games/.



Let's also say a few good words about beach volleyball - many vacationers practice it, but at the same time, tournaments for professionals are also organized.



Football is a favorite game for millions of people around the world. Not surprisingly, this is the most famous sport in the world. The modern game has its origins in England /1863/, where the first rules of the game were made. In its competitive version, on which the championships are held, a field with natural or artificial grass is used, two opposing teams play, each team consists of 11 players - 10 field players and one goalkeeper, who is only allowed to catch the ball with his/her hands in his/her own penalty area. The technical touches allowed to field players are to control and strike the ball with legs, head and body. The winner is the team that scores more goals in the opponent's goal. Everyone who is interested in football knows the rules of the football game.

Typically, football players aim to create scoring opportunities through individual ball control, passing the ball to a teammate, and shots at the goal that is being defended by the opposing team's goalkeeper. Players from the other team aim to take the ball away from the opponent playing it or intercept his/her pass to the teammates. If they get possession of the ball, they become the attacking team, and so on... until the end of the game time. It is necessary for football players to comply with the rules of the game and avoid harmful physical contact with opponents. Play is stopped briefly only when the ball leaves the field of play or in the event of a violation of the rules. This is strictly monitored by the referee /referee brigade/. The restart of the game is conducted in a manner determined by the rules.

The main idea is that the players learn to play football by playing football! Objectives should be easily explained. Before and during the game the players must be guided by the coach and the

technical staff. At the end of the game, players should be evaluated, based on the qualities they show during the game itself.

As a result of training, a number of skills and competences are developed, such as: skills for reading game situations, making quick and adequate game decisions, readiness for taking the initiative, opportunities for communication, collective play and increasing the individual technical level.

In order to achieve these results, at the beginning of the training, smaller spaces are used and practice games are played in reduced formations - to make football problems clearer, to have the training tailored to the physical capabilities of the participants, to reduce the duration of half-times and, last but not least, to make the players enjoy of the football game.



There are plenty of tools to help with the training process. And in this sport, preliminary physical and special tactical-technical training is of great importance. We have to point out that the first 20-30 minutes of the training session should be a perfect warm-up, because the football game carries the risk of the biggest sports trauma among all sports.

For the purposes of our program, we offer several options:

first option – training to build physical and technical qualities

second option – football game on a small field /mini football or futsal/

third option - Jitball - an emotional combination between football and volleyball



In the first option: Game without a ball - The means of athletics are mainly used - from running around the field with a change of pace, to relay games and different jumping exercises.

When working with the ball: Leading and passing the ball, heading the ball passed by hand from a teammate, dribbling around cones, kicking the ball (static and dynamic), executing a direct free kick from different positions, a corner kick, a penalty kick, etc.





Mini football is probably the most accessible version of the football game. This is because without changing the philosophy of the game, without the need for special conditions /even in the winter on a snowy ground/, if 10-12 people gather - the game begins. Depending on the number of participants, the size of the playing field could be smaller or bigger. Certain preliminary agreements are made - on the duration of half-time, the execution of throw-ins, corner kicks and penalties /from the penalty spot with a goalkeeper or from a greater distance - without a goalkeeper/. On a great number of occasions, mini football games are spontaneously organized and do not imply refereeing. The short distances and continuous movement of the players gives them the opportunity to play with the ball very often and to show their footballing capabilities and skills.

All the rules of football are observed in mini football. In addition, if before the start of the game an agreement has been reached to play without goalkeepers, no player may touch the ball with his/her hand. Goals can be of different sizes. Handball and hockey goals are most suitable, but if there is no other option, we could always improvise using plastic cones or other vertical objects as goals.

Certainly, there are official mini football rules that are observed in various mini football tournaments and championships. The playground is the size of a handball court. Handball goals are used. In front of them, there are marked lines of the penalty areas, and in the middle of the field there is a line and a large circle – just like on a large football field. Mini football is played with a normal football. The teams are composed of 4-6 players and 4 substitutions, who can enter the game only once /unless there is a prior agreement to rotate them like in hockey/. When taking a direct free kick, the players of the defending team may form a wall at least 5 meters from the spot of the free kick. The penalty is executed 7 m away from the goal line.

After 2000, indoor mini football is called "futsal". The teams are made up of 5 players - 4 field players and a goalkeeper. Compliance with the rules is monitored by a pair of referees on the field: the main referee, who alone makes the decisions, and an assistant referee to whom the main referee can consult in certain controversial situations. There is also a reserve referee who takes care of the order of the tow teams' benches and announces the substitutions. Competitors' attire includes a numbered jersey, shorts, socks and athletic shoes appropriate for the indoor surface. The goalkeeper's clothing must be different from that of his/her teammates.

As stated above, futsal is played indoors. The length of the playing field is a minimum of 38 m and a maximum of 42 m, and the width is a minimum of 20 m and a maximum of 25 m. Match duration is 40 minutes /pure playing time/, divided into two half-times of 20 minutes with a 10-minute break. A draw is generally a possible result, except in direct elimination matches.

We come to another favorite game - Jitball. It is played by two teams with a volleyball or football, suitable sports clothing and suitable sports shoes. Teams are made up of 2 or at most 3 players. It is good to play in 2 halves of 10 minutes each or in one game session - until one team scores 15 points. If there is a tie 14:14, the game continues until there is a 2 goal difference. A draw determines which team will serve first. After the first half, the teams switch sides. A 5-minute break may be allowed between halves. According to the agreement between the players of the two teams, the serve can be executed by hitting the ball directly or after the ball bounces off the ground. The important thing is that the ball should not fall into the net /which is 1.10 m high/. If, however, the ball touches the net and passes into the opponent's field, the serve is repeated as in table tennis.

Jitball must be played in 2 or 3 strikes /depending on the number of participants in each team. This means that the ball can touch the ground 2 /or 3/ times. Players may play with their head and body before the ball has touched the ground - this does not count as a strike. Serving is determined randomly: for instance, the change can be made every 3 or 5 serves. The game is very fast and full of many twists and emotions. No matter what technical skills the players possess, no matter how talented a certain participant is – the game remains collective and victory depends on team play, mind and tactics.



**SPORT PROGRAM  
FOR  
FAMILIES WITH CHILDREN  
WHO ARE PHYSICALLY ACTIVE  
TOGETHER**



### **All children love to play...**

Every interaction with a game leaves permanent traces in the child's consciousness. Playing is considered to be a universal phenomenon. However, it reflects the culture of each nation, its uniqueness.

"The structure of the family, the living conditions, the environment and the means of existence - all these directly influence the nature of the games that cannot develop when the child lives in too unfavorable conditions" - writes Juliette Raabe in a UNESCO study on children and play.

The attitude of adults towards children's games is very important for the harmonious development of the child. Children love to play with their parents, to have them enjoy their achievements in the course of the game. The indifference and/or improperly dosed strictness of some parents can become the reason that a child does not feel joy in the game at all, and subsequently that could form a negative attitude towards motor activity and sports.

Even the best electronic game cannot replace the sports-entertainment game in which parents and other children participate, and emotions dominate. Electronic games and mechanical toys, no matter how popular they are, raise an obstacle to children's creative expressions, to their fantasy and ingenuity. Through sport games, children develop their physical and mental abilities, the art of communicating with others. While verbal communication has a leading role in children's interactions, playing gives them an additional opportunity – to communicate through actions. In game, children develop important life skills that can prove very useful when they grow older.

If we want to raise a generation fit for the challenges of the 21<sup>st</sup> century, we must consider the extreme importance of play as an educational tool, and also as an absolute necessity in the youngest kids' lives. Many children when asked the question: "Are you looking forward to seeing mom and dad in the evening?" they answer in the negative. The reasons: "Because they don't play with us!" , "Because they don't have time for us!" Of course, parents' duties are not limited to just playing with their children. But... this should make us think as parents and educators. Everything matters... No one can replace parental caress, parental care, and parental influence on a child's development. Let's not forget that children copy most of their behavioral responses from their parents. Thus, the responsibility of parents becomes even greater.

Play is a wonderful companion of childhood, it is a vital necessity for every child. Children are not happy if they only passively observe life. They want to be actively involved in it like adults. Therefore, in their games, imitating adults, they recreate reality according to their desires and experiences. Through play, a child gets to know his/her surrounding environment. It awakens their initiative, ingenuity, helps their spiritual development, and strengthens them physically. Game eliminates monotony and boredom. The way a child plays can often tell us a lot about how he or she will work in the future.

Play cannot replace work. There are other tools, through which in the family and subsequently in school, children learn to work - play can only guide them. Playing is also important in the field of aesthetic education. There is almost no game that does not require dexterity, a clear mind, speed, agility, a sense of orientation, etc. During games, children expend a huge amount of energy without

feeling tired. This is quite natural - playing is addictive and children have a lot of fun. When they play, they experience, enjoy, and get involved emotionally. Humdrum activity and monotony in physical education bores children and therefore tires them quickly. It is enough to include a short fun element and sports become a game for them. In games, children guide their own motor actions, make the most rational decision and implement it.

The most popular games are the ones in which 2 teams participate. If parents join their children as team members, the emotional charge increases. If more families participate in those teams, the game turns into a real celebration.

A person's desire to somehow show his/her superiority among others is genetically embedded. Most probably, the desire to measure their physical strength comes first, which does not mean that thought is not used as well. Both way, among all games the most interesting and engaging are the so called competitive games. They are a serious physical and mental burden for the human body, especially for the weak and immature child's body. Therefore, with children, preparation should begin a little earlier - with the selection of games, gaming tools, roles and tasks of the players, etc. An important condition is to gain the children's trust so that they can put all their strength and skills into the game. It should not be forgotten that they are not used to defeat and can hardly bear the loss of their team. Some, more emotional, long after the game has ended continue to suffer in their own way. Of course, the desire to win at any cost cannot be removed from children. The winners will be praised, they will even be rewarded, but it is necessary to encourage the defeated as well. A big difference in the final result can traumatize the whole losing team for its next game. Special attention should be paid to shy children, to those who are fearful. They are simply afraid of possible failure and might develop a sense of inferiority. Such kids should not be assigned tasks that they are not likely to be able to complete. Their mental balance can be disturbed for a long time. On the other hand, the successful inclusion of such children and their successful performance can free them from stiffness, inspire them and boost their self-belief.



Without claiming to cover all types of sports-oriented games for children, we would still group them into sports games, travel games, and fun games. For the purposes of our program, we shall focus on the first two groups of games. In addition, we will also suggest some options related to the third group. Before that, however, it is necessary to briefly outline the specifics of the children's organism /especially the group targeted by our sport program - 3-11 year olds/:

A child should not be viewed upon as a diminutive copy of an adult. His/her organism has its own characteristic morphological and functional features that distinguish it from the adult and which in the process of development - until the child grows up - undergo a number of changes.

Growth and development are the main characteristics of the child's organism. They take place with a certain logical sequence until it becomes an adult organism. In the process of their development, children go through certain stages or periods of childhood, each of which marks a subsequent stage in this development. It is characterized by relevant morphological and functional features of the children's organism and by certain features of the external environment they live in, which is inseparable from them and which also changes. Growth is a quantitative increase in mass - in the dimensions of the body and its individual parts, while development represents metamorphosis, i.e. turning the embryo into an adult organism.

Not only the external shape and proportions of the body change with age.

All organs and systems in their structure and functions show different phases of development and maturity. For example, in the newborn, in the first hours after birth, fluctuations in body temperature are observed depending on the temperature of the environment. With increasing age, with maturation of the central nervous system and the occurrence of a number of other changes in the child's body in the process of its development, this thermolability is gradually overcome. In connection with the occurring quantitative and qualitative changes in the child's organism, related to the processes of continuous growth and development, the norms established for adults, reduced only in proportion to the child's age, could not be applied. It is also impossible to talk about "norms of childhood in general" without differentiating them according to the age of the child, according to the dynamics of his/her morphological, functional, reactive and other features. For children of different ages, these "norms" show certain, often significant, differences.

To facilitate this differentiated approach to children of different ages, childhood is divided into periods that have a certain characteristic and certain differences between them. Of course, this division of childhood into separate periods is conditional, because there is no sharp boundary between the stages in the child's development. Having that in mind, the target of our program are children in the preschool period /from 3 to 6 years old/ and the early school period /from 6 to 11 years old/.

In the preschool period, the changes are rather quantitative. The growth and development of the child takes place at a slightly slower pace /compared to the period of the newborn, the nursing period and the period of early childhood/. The functional capabilities of the child's organism are constantly being improved. Brain functions stabilize and continue their development, analytical and synthesizing activity is strengthened. A need occurs for the child to connect with the social environment in the form of communication with other children and adults. During this period, the

main tool that stimulates neuropsychological development is play. Children are extremely flexible and are easily affected by both positive and negative environmental influences. Therefore, appropriate care and appropriate organization of the environment / hygienic care, educational actions, etc. / are necessary.

During this period, the child moves from home environment and kindergarten into school life and starts to develop the necessary work habits. Interactions with the outside world are becoming increasingly complex and diverse. Social inter-relations are dominant, which determine the relations with school, household, industrial and agricultural work.

To briefly summarize, the conclusion would look like this: The anatomical and functional features of the child's organism are determined by the main biological feature at this age - the incompleteness of the child's growth and development. The younger the child, the more visible that is.

The development of child's emotions during these periods of childhood represents another very important aspect of the educational process: positive emotions stimulate vital functions, create optimal conditions for higher nervous activity, for active connection of the child with the environment and are an important factor for his/her mental development. A basic principle in the upbringing of children at this age is not to leave them under the influence of negative emotions for a long time. The positive emotional tone of children at an early age create calmness in their behavior and awakens their interest in everything that surrounds them, makes their games and activities enjoyable, thus enriching and diversifying their lives. An expression of positive emotional tone is the cheerfulness, typical for every healthy, properly raised and educated child: his/her lively look, good disposition, playfulness, good humor, and seemingly inexhaustible activeness and readiness to enter into socio-emotional contact with adults.



### COMPETITIVE GAMES

Nothing can arouse more interest in children than relay games. They contain very clear and defined competitive elements, have simple and precise rules, and a set goal. In the process of the game itself, the competitors from both teams have the opportunity to observe who fulfills the rules and how.

A relay game usually lasts 2-3 minutes at the most. It is almost a short race, but extremely emotional, tense and unique. During a relay game, the participants represent a team that has a common goal and tasks, a desire for victory and prestige. The moral support of the audience also heightens their emotions. When we mention the audience - it can be random people, but it can be the parents of the children. In both cases, the emotion is guaranteed. Competitive relay games do not include only running /something can be carried and passed/thrown to the next participant from the same team - an object, a ball, etc./.

Other very attractive games are the ones in which players have to hit an object or get a ball into a goal. In their desire to finish first, competitors often underestimate the requirement to hit the 'target'. At the same time, they do not pay attention to the possibility of gaining additional points, if they slow down a bit and focus on the target.





After the relay games, we could suggest the so called “Blindfold games’. They bring pleasant and very cheerful moments to the competitors. Both children and adults are happy to join and play. There are children who easily succeed in orienting to sound /e.g. a bell or a whistle/, but there are also such children who find that an extremely difficult task. With great interest, children show their ability to orientate themselves "blindly" in a given game, to find the exact direction using only hearing, to guess distances, to recognize objects by touch /in a variety of the blindfold game/ to overcome obstacles without fear. In these games, children gain confidence in their body movements. By not using vision in a given game, other senses are mobilized.

Perhaps it is striking that even before we have offered sample sports and entertainment games, the concept of our program is emerging - more creativity, more variety, more smiles. Physical, so to say, achievements will come gradually and imperceptibly.



Not all games are related to running, jumping over obstacles, etc. There are also quiet fun games that are also desired by children. Especially when the weather is bad, or even when the quiet fun games are interspersed between the relays. At first glance, they pass more calmly, as if the players are taking a short break from the high-intensity games, but the audience finds them very attractive too. Quiet fun games can quite easily be held between 2 teams. In advance, it may be necessary to provide sheets, pencils, colored papers, etc. and after the time of the task has passed - to collect them, report the result and announce the winner.

In recent years, less and less children do the Jump rope game. That little exercise rope, which helps kids do various jumps and which brought world fame to the Bulgarian gymnasts. Nowadays, it is hardly to be seen on the sidewalks where the little ones play. It seems that jumping rope is also underestimated at school. Boys consider it a "girl's" game, but it should be highlighted that great athletes use the jumping rope daily in their training. Even the wrestlers, those muscular men, do 100-200 jumps with a rope before training. And not only them...

There are several types of jumps: with 2 legs, with one leg, with crossed arms in front, skipping with alternating left and right legs, jumping 3 times with one leg and 3 times with the other leg, double unders, etc.



Fun games can also be invented for those children who love or already practice a certain type of sport: football, basketball, volleyball, etc. These games can also be called sports-fun games. They subtly work out elements that are very necessary when practicing a given sport - for example, for football players, those elements could be dribbling, executing a penalty kick, heading. The same applies to basketball - dribbling, shooting the ball at a goal /which has a larger diameter than the diameter of the basketball ring/ etc. They also use the corresponding sport tool - a ball /the size and weight of which are adapted to the age of the participants/.

Some sports games have been popular for a long time, such as Jitball /elements of football - playing a football with feet and head, and using a volleyball court and volleyball net.

We start with the easiest relay games. They provide great opportunities for variations, since the only condition, in our opinion, is that the weather is suitable and the track is not muddy or slippery. The last requirement indicates that such games can be held in winter and also on sand /on the beach/.

Relay games are most often played between two teams. "Rivals" are two or four friendly families with an equal number of participants, divided into two teams.

The following are the many options that can be devised:

Option 1: The participants in the teams agree on the distance to be run. A starting line is drawn and cones are placed against each team at the pre-arranged distance. The distance between the tracks of the teams must be 3 meters. When the signal is given, the first participants from both teams run to the cones, go around them and run back to the starting line again. Touched by the hand, the second participant continues the relay. The competition ends when all participants take their turns.

Option 2: The participants in the teams agree on the distance to be run. A starting line is drawn and at the pre-agreed distance, instead of cones, small trays with tennis balls are placed on the ground, the number of which is equal to the number of participants in each team. At a distance of 2-5 meters

/depending on the age of the youngest participants in the teams/ in the direction of the run, plastic baskets /bins, buckets, etc./ are placed. When the signal is given, the first participants of the two teams run to the trays, take a ball and "shoot" trying to get the ball into the basket. Then they return to the starting line, and after touching the next participant, the relay continues until everyone on the team takes their turn. Both the speed of the relay and the balls scored in the baskets are taken into account to determine the winner.

Option 3: The participants in the teams agree on the distance to be run. A starting line is drawn and cones are placed against each team at the pre-arranged distance. Several more plastic cones are positioned between the starting line and finish line, which do not necessarily have to be in a straight line /but their arrangement must be the same for both teams/. The first participants, running along the distance to the finish line, must go around the cones /zig-zag/. When they reach the finish line, they have to go around the final cone and run back in a straight line /or if the teams have previously agreed to go around the other cones on the way back/. When they return to starting line, they have to touch the next teammate, and so the relay continues until everyone from the team takes their turn.

Option 4: The participants in the teams agree on the distance to be run. A starting line is drawn and cones are placed against each team at the pre-arranged distance. Several plastic hoops are placed between the starting line and the cone, the diameter of which should be adapted to the smallest participants in the teams. Running towards the cone, participants must pass through the hoops with one leg without breaking the running rhythm and without stepping on the hoops. Thus, the relay continues until everyone from the team takes their turn.



And here is another relay game that brings a lot of emotions and also has different options for implementation:

### TUNEL

As shown on the picture above, no special preparation is needed. There are two teams with an equal number of participants. Two balls are also needed /no special requirements, except that they have the same diameter and weight/. The relay game can be played on asphalt or grass.

Option 1: The participants of both teams are lined up one behind the other with their legs slightly apart. When the signal is given, the first of the two teams aim to pass the ball between the legs of their teammates in order for the ball to reach the last member of the team. When rolling the ball, the teammates are allowed to change the movement of the ball with their hands, if the ball hits someone's foot. After the ball reaches the last player in the team, he/she takes it and runs to the front. Everything is repeated again and the relay continues until all the participants take their turn.

### BALL OVER THE HEAD

Option 2: The participants of the two teams are lined up one behind the other standing up. When the signal is given, the first players from both teams pass the balls over the heads of the teammates standing behind them. The ball is passed until it reaches the last one in the column. Running, he/she goes to the front and so the relay continues until all team members take their turn.

Option 3: Participants from both teams are lined up one behind the other. The first players from the teams pass the ball over the head of the person standing behind him. He/she, in turn, passes the ball between the legs of the next one. He/she, in turn, passes the ball over his/her head to the person standing behind him/her, etc. until the ball reaches the last one in the column. Running, he/she goes to the front and the relay continues until everyone from the team takes their turn. In addition to the speed of the relay game, the sequence of the movement of the ball is monitored: upwards and downwards.

As you can see, there are many options, as long as there is a desire to move and do sports.



Children at an early age are very flexible. This quality is very necessary for early specialization in gymnastic sports.

Unfortunately, kids these days tend to play with hoops just as little as they do with jumping ropes.



Hooping is by no means just for the female part of the family. A very easy competitive game with hoops can be played between two families. And here the possible options are related to the duration of the hoop rotation, competition only between mothers, only between fathers, only between daughters, only between sons.

It is best for sports-competitive games to be played outdoors. Many specialists in the field of children's health share the opinion that every day when the weather is nice, children should breathe fresh air and spend time outdoors. Regardless of the topic of the program, sports games in the family are highly beneficial to children's health, and represent the desire of parents to create a positive attitude towards sports in their children.

But even when the weather is poor, kids still want to play, so the games take place indoors. It is clear that dynamic games cannot be played at home. Light, low-intensity and low-amplitude gymnastic exercises come to the rescue here.

Some more inventive parents find another solution: It's also a competition...



### GOOD AIM

This game is somewhat similar to the cowboy lasso throwing. The lasso is a 5 meter long rope with a tennis ball tied to one end and placed in a net. Gymnastics hoops are also used. The line from which the first team will throw the lasso is drawn with chalk or colored tape. At a distance of 4 meters, a second line is drawn, along which the hoops will be rolled. A participant from the first team, who will throw the lasso, stands at the front of a column of players behind the first line, and the participants from the second team - in a row next to the second line, with their first player holding a hoop in his/her hands. To run the game smoothly, 2 lassos and 2 hoops are needed.

The game begins: Player 1 from the first team has the lasso coiled in one hand and with the other hand he/she is spinning the end with the tied ball. Player 1 from the other team rolls the hoop along the second line. The lasso is thrown and if the target is "shot" /the ball goes through the hoop/, one point is won. Each competitor is entitled to two attempts. After the players of the first team take their turns, the teams switch roles the game continues until all the participants from the second team take their turns.

### LET'S PLAY WITH WALNUTS

Walnut games have been among the most loved in the past. They were played in the long winter evenings by the fireplace. 20 walnuts are needed for each of the two teams and the playing surface



has to be flat /asphalt, floor, etc./. Two lines are drawn at a distance of 1 meter from each other. One line is the starting line /from where you shoot/, and the other is the line on which the target is placed. The game begins: The first participant is given two walnuts to roll to the second line, where two other target walnuts are spaced apart. The goal is to hit the walnuts. The game continues until all participants from both teams take their turn the result is counted.

### SACK RUNNING

Sack race is a very emotional game. Wide, strong, canvas sacks are needed. The race can be held on a selected distance, which must be on a flat surface (preferably, a flat meadow). It can be conducted as an individual race, as well as a team - like a relay race - at a shorter distance. In this case, each participant waits for his/her teammate to return and then starts. The game ends after all participants in both teams take their turn.

### SACK FOOTBALL

It is a variation of the sack race, but it also has elements of the football game. You need wide, strong, canvas sacks, 3 plastic cones, 1 flag, 2 pegs to mark the dimensions of the goal, and footballs. At a distance of 3 meters from the starting line, the flag is stuck. The players have to reach it by sack jumping in a straight line. Next is a slalom between the cones, which are placed 2 meters from the flag (the first cone) and 2 meters from each other. After another 2 meters, the free kick spot is marked. It is at a distance of 2-3 meters from the improvised goal, which has no goalkeeper. Don't think it's so easy to shoot when your feet are in a sack. The competition ends when all participants from both teams take their turns, regardless of whether one goal is used or the competition is held simultaneously for both teams (using two goals and to sets of cones, flags, etc.). Performance time is counted, as well as the goals scored by each team.



### CHASING GAME WITH A BELL

The game is suitable for all members of the family. Again, the participants are divided into two teams, but unlike other games, even though they are opponents in the course of the game, everyone cooperates. The teams determine who will chase first. The bell is given to another participant and the game begins. The chaser starts running after the player carrying the bell. All participants in the game try to run and pass the bell from hand to hand to prevent the chaser from getting the bell. If this happens, the team whose member failed to keep the bell receives a penalty point and the runner becomes the chaser, and so on until the pre-arranged game duration time has elapsed.

### LEAPFROG

This folk game has many different names and has been played for centuries by kids all around the world. We suggest the following version of the game for the purposes of our sport program: There have to be two teams with four or more participants /but an equal number/. The game begins from the starting line with the first players running a distance of 5 meters which is marked with flags, then bending down and firmly holding their knees with hands to get their body in a stable position. The second competitors jump over the first ones, take three steps forward and also bend into a position to be jumped over. The game continues until all participants take their turn. If there are more than 4 players in each team, the game ends with the turn of the player. If there are fewer than 4 participants, the game movements are repeated as many times as agreed upon before its start. In this case, it is necessary to mark the track with flags.



### LET'S GUARD THE PINS

Here is another game in which the participants of both teams cooperate during the game, and at the end the result is counted. Using a chalk, a square with a side length of 1 meter is drawn on the asphalt. Lines are drawn between the corners /diagonals/. One pin is placed at the center and four are placed at the corners (one for each corner) of the square. Participants are divided into two teams. A draw determines a participant from which team will be the first to guard the pins. All players line up in a circle approximately 5 - 8 steps from the square and at arm's length from each other. A player from that circle is given a tennis ball. His/her goal is to hit the pins – by him/herself or by cooperating with another participant in the circle, who takes over his/her functions – get the ball and shoots at the pins. This participant can be a member of any of the teams. A time limit is determined /for example 5 minutes/ during which each of the two teams is guarding the pins. At the end of the set time, it is counted how many pins the keeper has managed to protect from falling down. During the game, the keeper has the right to stand up a knocked down pin without entering the square, for which he/she gets 2 points. If the keeper knocks down the pin him/herself – he/she gets 2 penalty points. At the end of the competition, it is calculated not only how many pins are left standing, but the point score ratio between standing pins and penalty points. The results of all keepers from both teams are added up and the winning team is announced, as well as the best keeper of the competition.



Plastic skittles are light, safe, easy to wash, and with bright colors. They can be used as props for many games, as well as for determining distances and marking the playing field. They can be used as targets to knock down with the plastic balls that are included in the kits, as well as with other balls - the possibilities for playing different fun games using them are really numerous.

### RUN AFTER THE BALL!

This is a very dynamic relay game with two teams lined up in columns, the distance between them being 3-4 meters. Each first participant from the two teams receives one ball – a rubber ball, a football or a volleyball /the balls have to be a different color, but of the same weight and diameter/. When the signal is given, the first participants in the teams roll their ball forward from the starting line and immediately run to catch the ball of the opposing team, and then bring it to the next player of their own team.

The game continues until all participants from the teams take their turn. In the course of the game, the balls are exchanged between the teams, but this does not matter at all, since the balls are the same. What is important is that they can be easily followed during the game.

### GAME WITH BELLS

A rope is stretched between two stable stands /or between two trees/ on which 5 bells are hung at different heights at a distance of 20 cm from each other. The game can be played as an individual tournament, but it can also be between two teams. Each participant receives /when it is their turn/

5 tennis balls. From a distance of 3 meters, the balls are shot at the bells and the result of the hits is counted - the most accurate shooter or the team with the most hits.

### SHARP EYE

A large basket is placed in the middle of a circle with a diameter of 6 meters. A straight line is drawn dividing the circle into two halves. 2 teams, composed of 3 or 4 competitors each, participate. Competitors line up around the circle, each in their own half. Each pair of competitors /from the first and the second team/ receives four handballs /or similar/, four tennis balls and four balloons. At the signal, the first two players of the teams throw and try to get first the handballs, then the tennis balls and finally the balloons into the basket. It is important to have a distinctive mark on each ball/balloon, so that there is no error when counting the points. After each pair of opponents, the score is counted: 1 point for with each ball/balloon in the basket. The game continues until all participants take their turn. All the points of the teams are added up and the winner is announced.

### RELAY THROUGH A TUNNEL

Lots of positive emotions are brought by the relay games, in which players not only run and jump, but also have to go through a tunnel made of hoops covered by a nylon. The options for relay games are unlimited with one thing in common – going through the tunnel. Usually two teams participate. The simplest option is to run from the starting line to reach and go through the tunnel, then run to a certain flag and, again running, the participant returns to the start and passes the baton to the next team member. Another option is that after the tunnel there is also some small obstacle to overcome. A very cheerful option is when the relay is a beach ball and not only the children, but also their parents go through the tunnel with it.



## SPORTS - FUN GAMES

During intense training, even the most famous athletes look forward to the moment when the coach will offer them some fun exercises, or even games. In recent years, the so-called "mini sports games" become more and more popular around the world. Their creation and implementation is possible especially in team sports – there have been many such games, invented for the friends of football, basketball, volleyball, etc. It is preferable to play mini sports games outdoors, because in them, unlike other games, more energy is spent, duration is longer, and if they are played indoors, with active inhalation and exhalation, the benefit would be insignificant.

Clean air and a nice meadow cannot be transported to the city, so you have to go to them.

The mini sports games we offer as part of the program are not intended for advanced athletes in a particular sport. Both children and their parents can take part in them, but there is one requirement: those who play should possess at least a little knowledge of the game. In some countries, there are rules designed specifically for mini sport games.



### GAMES FOR FOOTBALL PLAYERS

To play with a football, one does not necessarily need a full-size grass football field and two teams of 11 players each. Other options exist and are popularly called "mini football games". Mandatory requirement for the participants in such games is the full-body warm-up. It can start with a number of specific exercises, continue with running and finish with some more exercise.

### GOALKEEPERS

Three sacks and three footballs are needed. A handball goal is used (or a goal made from two sticks). Each team consists of three players - two forwards and a goalkeeper. The distance from the starting line to the goal is 10 meters. The game starts with the attackers of the first team starting to dribble with each other, with both legs inside the sacks. They do it until they cover a distance of 6 meters, which is marked with a flag, then one of them shoots at the goal where the opposing goalkeeper is trying to save the shot. This exercise is repeated 3 times. The same drill is performed

by the other team and the score is counted. It is not easy to attack the opponent's goal in a sack, to shoot, as well as for the goalkeeper to save the shot.

### SLALOM RELAY



Two teams participate. Two columns of plastic cones or flags are set (1 meter distance between the cones/flags). The teams line up, standing 5 meters away from the first cones. The distance between the two teams / the two columns / must be at least 5 meters, so that they do not interfere with each other. When a signal is given, the first competitors from both teams lead the balls to the cones and slalom around them, reaching the last ones. From there, they lead the balls in a straight line, return to the start and pass the balls to the second players in the teams. The game continues until all the players from the two teams take their turn. In addition to the speed of execution, accuracy when dribbling around the cones is taken into account for determining the winner.

### SHOOTING AT THE TARGET

A plastic bucket is placed on some sort of a stand. The game is for two teams with an equal number of participants. Everyone gets one football /if that is not possible, they all take turns using the same ball/. The distance from the starting line to the goal /bucket/ is 5 meters. Participants from both teams have 5 turns each. Before striking, every participant has the right of running start – not more than 2 meters behind the ball. In this game, it is not time that is counted, but goals scored. There are many options to complicate the shooter's task such as: longer distance to the goal; moving the goal – making them shoot at a target in motion; placing several cones to dribble around and then shoot (from the specified distance -5 meters) at the target in motion.

### FOOTBALLERS - JUGGLERS

This is a very popular game among children /and not only/ which has many names “Keepie uppie”, “Keep-ups”, “Juggling”, “Kick-ups”, etc. The object of the games is to juggle a football using feet, lower legs, knees, chest, shoulders, and head, without allowing the ball to hit the ground. Additional



rules could be to use only feet, only knees, only head, etc. The game can be played individually or between two teams, counting the total number of touches on the football (each counts as 1 point), or announcing an individual winner.



### FUN VOLLEYBALL

If one observes how people have fun during vacations, on tourist trips, in the meadow or by the river, one gets the impression that everyone knows how to play volleyball. This is because if a ball falls into the hands of three or four people, they immediately line up in a circle and start passing it to each other. The volleyball game is the most popular and loved by children. Other fun games can be organized and held with the volleyball - on the volleyball court or simply on the lawn.



### VOLLEYBALL IN A CIRCLE

It is recommended that there are no more than 6 participants in the game. Observations show that if more than 8 players take part in the game, it becomes uninteresting. The game can be made more complicated, if there is a participant in the center of the circle who tries to cross the path of the ball. Another option is for a bad pass or a miss, to briefly take the respective player out of the game, etc.

The game of basketball is also very much loved by young and old. Usually, in games resembling real basketball, the basic elements are practiced: accurate static passing (without moving the legs), dribbling the basketball and shooting towards the basket.



### DO NOT GIVE THE BALL TO THE PLAYER IN THE MIDDLE!

The participants line up in a circle with a diameter of at least 3 meters, and one of them stands in the center of the circle. The game begins: The participants pass the basketball /which has a smaller diameter and weight for small participants/ to each other without stepping /which means that at least one of their legs has to remain static/ . Their goal is to overcome the player standing in the middle of the circle. This can be done in two ways: either by passing the ball over his/her head without giving him/her the opportunity to intercept the pass, or by bouncing the ball against the ground, thus making it move past him/her. If the player standing in the middle succeeds in intercepting the pass, he/she takes the place of the one who made the mistake /who now stands in the circle/.

### BASKETBALL RELAY

There are many possible options to do a basketball relay. Two teams with an equal number of competitors participate. The two teams are lined up in columns at the starting line at a distance of

at least 2-3 meters between them. The distance that the participants must cover by bouncing the ball against the ground is agreed upon. The game begins: When the signal is given, the first competitors from the two teams start to play - They bounce the ball to end of the distance marked with a cone, then roll the ball to the next participant from their team. After receiving the ball, he/she repeats the actions, etc. until everyone on the team takes their turn. The game is about time, as it is a relay, but the precision of ball handling /drop the ball, using two hands, etc. must also be taken into account - by awarding penalty points/.



For years, a special relationship between professional basketball players and their young fans and followers has been observed. In many places, elite teams give open practical lessons to the little basketball players in front of an audience - the children's parents.

### SHOOTING AND . . . BASKET!

This game brings a lot of emotions, because even if it is not held on a court with a real basketball hoop, it has an unpredictable ending. It is played as a competition between two teams. From the shooting line, each participant makes two attempts to score. The game can then continue with shooting from different positions /but always the same for all participants/. A possible complication of the game is when some of the following tasks is set: Dribbling and shooting from a static position

or on the move; Dribbling between cones and shooting from a static position or on the move. There are many options - that's why there is so much interest in basketball.

### **TOURISM GAMES**

Tourist activity develops curiosity in both children and adults. Tourism is highly important for the upbringing of a healthy young generation that loves their homeland. The purpose of family mini tourism could be just going for a walk in the fresh air, or spending time in nature, or playing with a ball/federball, or even making the family pet join the game... Either way, the benefit for all will be one hundred percent health and positive emotions.



Look at this happy family. There is hardly a greater emotion than togetherness...

Tourism games are among the most attractive one, due not only to the variety of natural movements involved, but also to the fact that the majority of improvised games take place outdoors, in nature, regardless of the season.



Some of the games are used to expand knowledge, others serve to strengthen tourist skills and dexterity. Almost all games, to a greater or lesser extent, contribute to increasing physical performance and are a wonderful means of strengthening health and high working ability.

The selection of games should depend on the possibilities, the physical and sports-tourism preparation, as well as the skills of the participants.

The game method helps to develop good long-lasting habits, and the qualities of agility, speed and intelligence.

Last but not least, after the game is over, everyone should be happy!

**SPORT PROGRAM  
FOR  
PEOPLE 60+ YEARS OF AGE**



Humans have two ages - chronological and biological. We meet people who look much younger or much older than they are. This is because of the difference between those two ages. Chronological age refers to how many years a person has lived /how old he/she is according to documents/, and biological refers to how old he/she looks /what physiological age his body is/. Appearance is a good indicator of a person's biological age. Aging depends on genetic and external environmental factors (diet, daily routine, sports, stress, etc.). We all age at different rates.

Aging is associated with an accumulation of damage in the main organic structures of the body. Over time, as more and more damage accumulates, the ability to repair the damage also deteriorates – our body becomes less efficient at repairing damage and cells, and our tissues and organs become more susceptible to disease. With age, the immune system becomes less resilient. With the aging process more inflammations occur, which unnecessarily activates the immune system. In general, with age, everything deteriorates for our body. That is how life goes, and we must take good care of ourselves.

Much of the molecular damage that underlies aging comes from living itself, from the body functioning: from the conversion of nutrients into energy while breathing /being exposed to a number of negative factors - especially smokers, and in the presence of radiation and other harmful environmental conditions/.

Very briefly, we will list the significant reasons for aging in everyday life /not ranked with respect to their harmfulness/:

Smoking is probably among the worst things a person can do to their body /having in mind traditional nicotine cigarettes/. Cigarettes contain toxic compounds that cause major cellular damage to our body, which is added to the damage that is already accumulated from living itself, and the body has no chance to catch up well in repairing them in this situation. Dirty air also leads to damage and premature aging. But while we don't have an option not to breathe, we do have an option not to smoke.

A poor diet of simple carbohydrates and saturated fats leads to obesity, which in turn also accelerates aging and shortens life by years.

There is no universal diet, but nevertheless we suggest: a minimum amount of simple carbohydrates; a limited amount of saturated fat; not too large amount of proteins /even though they are the building material/; and obtaining all the necessary vitamins and minerals.

Blood sugar level is also important: people with high blood sugar levels look older than they are.

Alcohol is toxic and while in very small quantities it can possibly have a positive effect, in large quantities it is harmful to most of our organs and systems - it contributes to the development of ulcers, problems with the liver, the cardiovascular system, vitamin and mineral deficiency, sexual problems, blood sugar problems, it is toxic to the brain - crosses the blood-brain barrier and can even kill neurons in the brain.



Sun exposure is somewhat beneficial as it produces vitamin D /which is extremely important and regulates 4% of the genes in our body/, but excessive sun exposure leads to cell damage and skin aging.

Therefore, how we live /what we do every day/ determines how and how fast we will age and whether we will suffer from many diseases during this time. We can do quite a bit:

Feeding should be done at certain time intervals / e.g. 6 or 8 hours/, and the rest of the time – only water. It is the most basic for us humans and is absolutely necessary to maintain good health. You should not consume anything caloric that activates metabolic processes in the body / its breakdown by the liver and intestines and the corresponding enzymes/. If we go outside these time frames, the enzymes do not work as they should, which leads to more fat than muscle, low insulin sensitivity, high blood sugar levels and confusion with our biological clock. That is, it is not only important what we eat, but also when we eat it. For overweight people, the diet is suitable, but within reasonable limits - Reducing sugar and salt, carbohydrates and fatty meats is quite appropriate. But only fasting for a long time is dangerous, especially if there is an accompanying disease. It can also lead to depression.

Special attention should be paid to good sleep. It is a very important factor for the functioning of our body. In short, it is restorative and the efficiency of all daily activities depends on it. During sleep, toxic products are being cleared out of the brain and the body.

Heat stress - refers to short-term stresses on the body that activate its defenses. Heat stress and physical exertion (which often go together, because when we exercise we raise our body temperature/) increase the production of proteins /protein molecules/ related to preventing the accumulation of damage in our cells, as well as the activation of many genes that for related with the repair of damage in the hereditary information of the cells.

Sauna is a modern way to induce heat stress without physical movement. It must be used by healthy people /after consultation with a doctor /! Some of the sauna benefits are: reduced mortality from many diseases: cardiovascular, respiratory, Alzheimer's, improved symptoms of depression, reduced risk of hypertension, reduced inflammation in the body. The effects are cardiovascular and similar to exercise. They even preserve muscle mass in periods of non-training /for example due to injury/. It is important that a person hydrates well /drinks fluids/ before and after the sauna and that he/she does not consume alcohol!!! before, during and after the sauna. People with low blood pressure should be careful, because sauna lowers blood pressure!

Sports do not exclude the benefits of sauna - there is a cumulative effect when doing both. Hot baths give similar positive effects, but much weaker, because the temperature is lower and there are parts of the body that stay outside the hot water.

Exposure to cold also is a type of short-term stress on the body that activates its anti-aging defenses. In fact, cryotherapy helps with depression and anxiety. But, still, people should not overdo it and risk catching a cold when out of shape or over-stressed. In such cases, the body has limited resources and extra stress may be not helpful, but rather harmful.

Sport is a powerful way to positively influence aging and diseases related to old age. It directly activates in the desired direction /slower aging/ 3 of the 4 main biochemical pathways regulating aging, and the 4<sup>th</sup> one - indirectly. Physical exercises reduce the chance of developing cancer and tumors or, if they have already developed, helps to reduce them.

Physiological characteristics of an elderly person when performing physical exercises:

Maximum oxygen consumption - an indicator that determines the functionality of the cardiovascular system, after the age of 25 decreases by 5-15 % every decade. The decrease is explained by a decrease in maximum cardiac output /maximum heart rate decreases every decade by 6-10 beats and causes a decrease in cardiac output/. In addition, an increase in blood pressure and systemic vascular resistance is observed in the elderly during more intense physical exertion /especially in women/. It gradually reduces the cross-section of the thigh muscle, reduces elasticity and increases intermuscular fat /especially in women/. Decreased muscle strength is a major component of the aging process. Many elderly women, due to a significant decrease in strength, are unable to perform even the simplest household duties. After the age of 70, that could be a real problem. Research data show that muscle strength declines every ten years by approximately 15% during the sixth and seventh decades of life. Age-related decline in muscle strength has significant implications for functional status. In both sexes, there is an apparent interrelation between strength and preferred gait speed in old age. With age, there is a decrease in the body's daily energy expenditure. In people with a sedentary lifestyle, energy expenditure is mainly determined by their muscle mass, which decreases by about 15% by the end of the seventh decade. This, in turn, leads to a decrease in the basic metabolic rate. In addition to muscle changes and subsequent problems, aging leads to decrease in bone density, insulin sensitivity, and blood oxygenation.

People aged 60 years and older should participate in at least 150 minutes of moderate-intensity breathing exercises per week. Adults in this group with joint problems should do balance exercises to prevent the risk of falls at least 3 times a week, and strength exercises that include major muscle groups - 2 times a week. Each exercise session should last ten minutes. If the elderly cannot perform the recommended amount of physical activity for health reasons, then they should engage in physical exercise, taking into account their physical abilities and health status. People with cardiovascular problems and diabetes may need additional precautions and medical advice!

Hippocrates said: "Nothing exhausts the body like physical inactivity."

In the modern world, much is known about the dangers related to the lack of physical activity, including in the elderly. Lack of balanced physical activity accelerates the aging process and can also cause the development of coronary heart disease, hypertension, stroke, vestibular problems, colon cancer, breast cancer, osteoporosis, deforming arthrosis of upper and lower limbs, metabolic disorders, depression, etc.

In order for motor activity to keep the elderly healthy, it is necessary to take into account both the general principles and the individual characteristics of the body and personality. If an elderly person has certain skills, it is best for him/her to continue practicing the sport activities they like /eg. tennis, swimming, golf, sports games, etc./. Playing contributes to a positive emotional mood, gives a charge of vitality and health. Because exercise capacity declines with age, the majority of

the population has low exercise capacity. Therefore, low to moderate intensity exercises are needed.



Special gymnastic complexes are easily applicable: to activate the function of breathing, the cardiovascular system, to maintain the mobility of the spine, the joints of the upper and lower limbs, and to normalize the function of the gastrointestinal tract.



Among the various forms of physical activity, walking has a universal healing effect. It is the basis of such methods of improving health as tourism, health path /walking on paths/, etc. Instead of medication, there are 15 types of walking with varying degrees of difficulty: normal, brisk, sports

walking... Walking could be used as a means of treating hypertension, dystonia /involuntary repetitive movements/, varicose veins, diseases of the respiratory system, gastrointestinal tract, recovery after a heart attack, etc.

Having given this short explanation, as part of the sport program, we suggest the following options for walking:

Option 1: Walk to the nearby park - Half an hour of walking to the park, half an hour of rest on a bench in the park in the fresh air, and another half an hour of walking in the opposite direction.

Option 2: Walk to the nearby park – Half an hour of walking to the park, 10 minutes of rest, 10 minutes of breathing exercises, 10 minutes of rest /or a little more/, and half an hour of walking in the opposite direction.

Option 3: Half an hour of walking to the park, 10 minutes of rest, 10-15 minutes of sport walking in the park, half an hour of rest, and half an hour of walking in the opposite direction.

Option 4: Half an hour of walking to the park, playing chess with a friend /no time limit/, and half an hour of walking in the opposite direction.



There is an element of real sport here, although at this age competition should not be the leading factor.

There is no system in which the possibilities of directly influencing the functions are as great as in the respiratory system. The influence of physical exercises here is specific, immediate. Only with physical exercises can the respiratory function be regulated, guided, rebuilt, maintained and trained in a completely physiological way.

Breathing exercises have both general and, in many cases, specific effects on almost all other organs and systems, and above all on the nervous system. From a physiological point of view, the following elements are important for the methodology of respiratory gymnastics: During external respiration, there are 3 key moments: 1. Air exchange with intake and exhalation of air; 2. Distribution of air in the respective parts of the lungs; 3. Passage of oxygen from the alveoli into the blood. In internal respiration, there are two key moments: 1. Passage of oxygen from the blood into the tissues. This process depends on the good bloodfilling of the pulmonary capillaries; 2. Biological oxidation in the tissues themselves.

A single physical activity leads to an increase in the respiratory function. Deepening and quickening of breathing leads to better ventilation of the lungs. There is an increase in inhaled fresh air, and therefore the supply of oxygen to the body is more adequate, blood saturation is also more complete. At rest, pulmonary circulation takes place at the base of the lungs, while during physical exertion it covers the other segments more intensively. Flexion and expansion of the thorax and movements of the diaphragm change the pressure in the thoracic and abdominal cavities, which affects blood circulation. Changes also occur in digestion, etc. The nervous system is particularly well affected by breathing exercises. At rest, the breathing of a trained person is much more economical, and oxygen utilization increases.



Rhythmic and even, calm full breathing, in which all parts of the respiratory apparatus take part, is best for human health. In general, inhalation and exhalation should be done through the nose. Breathing through the nose filters, warms and humidifies the air, directs the air flow and slows down its speed. The resistance of air inhaled through the nose is greater than the resistance of air inhaled through the mouth. The irritation of the receptors and the nasal mucosa by the inhaled air informs the cortex of the brain and the respiratory centers about its quantity and composition, and thus ensures a more adequate regulation of breathing. Inhalation through the mouth cools and dries the mucous membrane, thereby reducing its resistance to harmful microorganisms and can lead to negative reflex reactions. When breathing through the mouth, the functional state of the nerve centers changes, the lung vital capacity decreases, the morphological composition of the blood changes, etc. All this reduces mental and physical capacity.



Physical effort is a specific irritant for many organs and systems, as a result of which they react with adaptive changes, which ultimately leads to a healing effect. To the extent that physical exercises do not affect the causes of diseases, they are classified as non-specific therapy. Here we proceed from a clinical aspect. Taking into account that the ultimate goal in any disease is the restoration of physical and working capacity, which is completely correct and scientifically based, physical therapy is a specific therapy. In old age, a boundary cannot be drawn between physical exercises in general and physical therapy - everything is done for health purposes... In order to be fair to the kinesi therapists, here is the place to note that physical culture is a means of non-specific

prevention, while physical therapy is an active method of treatment that involves the person in the healing-recovery process and makes him/her empathetic to it. This is not just about strictly following the therapist's instructions. It concerns a deep awareness of the essence of the healing process, self-control over the vital functions and timely and correct information to the attending physician and methodologist. It is not only about a complex effective method, but also about influencing the mentality of the person seeking help and has a great restorative effect. Physical therapy has a wide range of application, i.e. it is used in almost all diseases, normally during the recovery period. There are no age limitations and no negative /side/ effects when applied correctly.

Is strength training suitable for the elderly? - It is clear that with advancing age, especially over 60, muscle strength weakens. Even some daily activities could become overwhelming. Orthopedists and physiotherapists recommend that after the age of 60 people should do moderately progressive strength training - exercises with elastic stretches, free weights, etc. The most important thing in these practices is the strict control by a therapist or instructor of the size of the weights and the intensity of the training - tailored to the individual characteristics of each practitioner. Elderly people who take care of their good health and visit the gym twice a week have very good sensations and cope more smoothly with routine activities such as walking, climbing stairs, bathing and household activities. Even for people with health problems typical for old age, these exercises are highly beneficial. Research by experts from the University of Indianapolis, USA, shows that elderly people who exercise at least twice a week have increased self-confidence and cope with minor accidents in everyday life such as falling, tripping and dropping objects. Maintained muscle tone makes seniors very happy and independent.

After reaching the age of 60, people, mostly from big cities, abruptly stop their physical activity, which leads to serious consequences. A sedentary lifestyle predisposes to hypertension, weight gain and immobility, which shorten their life span - fat accumulates, and at the same time, 150-200 grams of muscle tissue is lost every year. The main goal of strength training is to stop this process. In no case should one reach the point of exhaustion and should not compare his/her "achievements" and training intensity with how they exercised at a younger age.



In recent years, science has paid much attention to research on the effectiveness of strength exercises in preventing senile muscle weakness. The observations of specialists from the University of Manchester, England, show that after a few months of doing a strength program, elderly people increase both their static and dynamic leg-muscle strength. The sizes of the muscle groups were also measured by magnetic resonance. After implementing such a program, a 12-15% increase in muscle mass has been reported. This is a very encouraging fact, which gives reason, to some extent, to believe that through exercise the process of muscle weakening in adults is reversible.

During strength training, changes occur in the nervous system. The nerves responsible for activating the muscles send impulses and thus activate them. Many people, especially the elderly, cannot activate all their muscles. This is due to limitations in the nervous system, which can be overcome to some extent by strength training.

Strength exercises have a beneficial effect not only on the muscles. Tendons are biological structures that connect muscles to bones and transmit muscle forces to the skeleton, allowing us to move. In childhood and younger age, their ability to stretch within certain limits is greater. The ability of tendons to adapt to strength training in older age is not unexpected, but it is still a discovery for many researchers. As a result of training, the tendons become stronger and there are changes in them that can reduce the risk of overstretching. Therefore, we assume that there will be a positive effect from the physical loads. But still, in order to achieve a good effect, the training session should be of higher intensity - this to some extent raises our doubts about its practical application. In a control environment and for research purposes, the results might be good, but in everyday life it actually carries risks.

Here are our observations and recommendations:

We must clearly realize that physical exercise activities under the supervision of a specialist presuppose several conditions - the availability of a gym in every settlement; time in the gym in which a specialist pays special attention to the elderly; having a formed group that attends the activities; each participant must have appropriate clothing /we purposely do not use the term “sport equipment”/, it is also related to financial resources /which even with great desire, may turn out to be a problem/, etc. We would summarize that this depends on the living conditions, and on the standard of living, which tends to differ greatly within the target group of 60+.

That's why we offer some light exercises for the elderly to tone them up a bit by communicating with each other and by seeing /this is particularly important!/ that the other participants have similar problems with movements, joints and muscles.





This is easily done in the open space between buildings or, even better, in a nearby garden or park. As we see them in the photo, they are arranged in a circle with enough distance between them, so that they do not interfere with each other. In the beginning, some breathing exercises and light gymnastic exercises are performed in two sets of 5 minutes each, in order to move the joints and activate the muscles as much as they can. Next comes the movement of an object /ball, plastic water bottle or some other object - not big and not heavy/. At the first part of the game, the circle is small and the participants are close to each other. Without moving their feet, they pass the object to each other until it goes around the circle several times. In the next part, the circle expands, so that the participants are a few meters from each other. The object is passed around and around the circle, but this time after a number of steps that each participant must take. There are variations with the weight of the object, with the speed of execution or with some other complication of the playing rules /for example: The participants know each other by name or are numbered sequentially. The participant with the object takes it to the center of the circle, leaves it there, returns to his place and announces who should go get it. The chosen one goes to the center of the circle, picks up the object, goes back to their spot, and returns to the center of the circle again to put it back there. Returning to their spot, he/she announces who is next to take the object from the center of the circle, and so on.

At this age (60+), many people start gardening. This is not a sports activity, but everyday activities can easily replace any sports exercises. In the garden, one could exercise their legs, arms and shoulders.

Doing sports means staying healthy and improving your quality of life. Sports enthusiasts manage to look 10-20 years younger than their biological age.

60% of the training should be dedicated to endurance training with regular heart-rate monitoring. Training at high pulse rates should be avoided and thus the risk of overloading the cardiovascular system - reduced. Consultation with a cardiologist, regular preventive examinations with a stress ECG is necessary to determine the appropriate training.

30% of the activities should serve to improve flexibility and coordination. We recommend regular stretching of the muscles, as well as therapeutic gymnastics when problems exist with the spine and joints.

The remaining 10% of physical activity should be devoted to improving strength. Strength exercises with light weights and many repetitions maintain the muscle mass of the 60+ generation.

On the one hand, this increases energy metabolism /exchange/, on the other hand, it has a positive effect on bone density. Running, swimming, cycling, cross-country skiing and playing golf are all sports that can be relatively safely practiced at this age as well. It is even more effective for adults to exercise in the gym with like-minded people. Group training in the gym gives good results.



One could rightly ask the question: "You underline that there is no equal access for people who want to attend sports activities in gyms. Why do you keep talking about their importance?"

We will try to give as objective an answer as possible:

There is no better physical and sports activity than the one controlled by a specialist. Independent activities in a home environment, although also useful, are only an imitation of the workload of an organized activity, tailored to individual capabilities. That's on the one hand. On the other hand, the 60+ period is different for each person. In their early 60s, both men and women still work and perform many and varied physical activities. Their functional ability and health status cannot be compared at all to those who are 65, 70 or older. So, everyone should do what they can, according to their ability.

We mentioned how many possibilities walking gives. It is the slower version of running. The stress on the back, hips and knees is much lower when walking, but with regular exercise and a little preparation, running, especially with like-minded people, can give very good results. Having in mind that there is some time for walking before the run /to reach the appropriate terrain/ in which joints and muscles prepare for the upcoming run, the parts of the training - the warm-up and the main part - should also be observed. The final part - a short rest with light exercises /breathing and

stretching/ - We have to make sure that it will not be missed by the participants, especially at this age.



Since we talked about rest after exercise, we should note that it is part of the recovery process.

After exercising, the metabolism is out of balance, as the body gets tired and exhausted from external physical and mental stress. That is why one of the first things to do to strengthen our body should be a sufficiently long period of rest. Getting enough sleep is considered a type of immune-system training regimen. By the way, stress is a real killer of immunity. People of the 60+ generation should avoid too much emotion and stress.

A healthy diet is also a very important element of recovery. Our body needs a wide variety of nutrients: proteins, fats, carbohydrates, vitamins, minerals, microelements, fiber and, of course, water. We need to consume these substances in sufficient quantity with food and, when necessary, additionally in the form of a balanced multivitamin preparation or dietary supplement, in order for our metabolism to function properly. What sounds a bit complicated at first is, in fact, relatively easy to achieve, as each food contains the essential nutrients in greater or lesser amounts. So, you don't need to chemically analyze the food, because a balanced menu ensures that the body gets what it needs.



All foods except water contain calories. The caloric content of a given food depends on its composition - the ratio between carbohydrates, fats, proteins and water. Foods with a high percentage of fat /eg. sausage, cheese/ are high in calories. Foods with a high water content (vegetables and fruits) are low in calories. Carbohydrate-rich foods such as bread, potatoes, rice and pasta are low in calories.

The energy intake for a person of the 60+ generation should be:

25 to 30% fat / about 60 to 80 g/day /

12 to 15% proteins / about 50 to 80 g/day /

55 to 60% carbohydrates / about 250 to 350 g/day /

In our part of the world, these figures are quite far from reality, as the fat content of the food is slightly below 50%, and that of carbohydrates - only 35% at times.

We recommend a light mixed diet that is high in carbohydrates and fiber and low in fat. A mixed diet with lots of fruit, vegetables and salads in combination with bread and cereals, potatoes, rice and low-fat pasta provides enough nutrients and also creates a feeling of satiety. For a healthy, balanced diet, the main requirement is as varied a menu as possible.

What types of food should the 60+ generation prefer?

Grain products such as bread and pasta, potatoes and rice. These products contain starch - for energy production, valuable protein and a high proportion of dietary fiber, which is necessary for digestion.

Fruits, vegetables and salads every day. This ensures an adequate supply of vitamins and minerals. Due to their high water content, they contain only a few calories. Vegetables should be enjoyed raw or if heat treatment is required, it should be short (like in a wok pan)

Low-fat dairy products. In addition to valuable protein, they provide calcium for bones.

Seafood - one to two servings per week. Usually, fish contains few calories, but a lot of omega-3 fatty acids, which have a beneficial effect on cholesterol in the human body. Meat and sausages - no more than two to three times a week. Always use lean meats and ham.

Replace regular sugar with fruit sugar or honey.



And now we want to introduce you to one of our initiatives that we successfully implemented years ago. It's a different age group. However, the most important thing is not the age, but the complex of easy-to-perform exercises. Any experienced PE specialist, even improvising, could easily make it work for the 60+ target group:

Brief history - With the assistance of the Institutions of Education and Health Care in a medium-sized Bulgarian city, a team of the Center for Sports Medicine /a doctor-specialist in sports medicine and a methodologist in remedial physical education/, within one school year, examined children from kindergartens and elementary schools. The guideline was – spinal curvatures and flat feet, documented for each child with a plantogram /graphic impression of the feet, subsequently read according to the requirements/. It was a big daily work, at the end of which the children that needed help were included in appropriate groups and work with them began.

What happened was that during the classes, the methodologists were engaged in explaining the exercises, counting during the exercises, and in this way they did not have the opportunity to be among the children and help them to perform the exercises. Given that the exercises were really easy, if they were not performed precisely, the effect would be minimal, or even no effect at all.

This is how we came up with an attempt to solve the problem: We made an audio recording with the voice of the specialist leading the classes, who explain the exercises, give the necessary instructions before each exercise, count. We made this recording on a musical background. And it worked. Subsequently, we made a practical lesson with two groups of children with the corresponding sets of exercises in front of the methodologists of all educational institutions and provided the recording. Our initiative proved to be a success. For many years, nobody in Bulgaria had tried anything like it. We presented this already implemented idea of ours to the Sports Medicine Congress in Romania as an initiative with a practical effect. It was very well received.

Bearing in mind that most of the complexes with exercises for elderly people have very easy to perform exercises /at least for those who do not have motor problems/, we find the idea described above very suitable for this age group as well. Thus we will ease the work of the methodologists and provide them with opportunity for individual work and help to each participant within the group activity. The 3D holograms are really great for that. Musical background will also complement the atmosphere of the activity and, to some extent, help the participants to forget their problems and pains.



For the purposes of our Sport program, we offer the following complex that can be enriched with a number of different exercises:

1. Starting position - standing with arms close to the body,  
on 1 - raising the arms forward,  
on 2 - raising the arms above the head,  
on 3 - lowering the arms forward,  
at 4 - starting position
  
2. Starting position – straddle stance with hands on hips,  
on 1 - curve to the left - exhalation,  
on 2 - return to starting position - inhalation,  
on 3 and 4 – oppositely

3. Starting position - standing with arms close to the body,  
on 1 - pull the body up and raise the arms, through the sides, to above the head - inhale,  
on 2 - return to starting position

4. Starting position - standing with arms close to the body,  
on 1 - raising the arms through the sides to above the head,  
on 2 - placing hands behind the back of the head, elbows to the sides, pulled back,  
at 3 - arms above the head,  
on 4 - arms, through the sides, to the starting position

5. Starting position - standing with arms close to the body,  
on 1 - raise the arms to the sides and bend forward the left leg at the knee, the body is straight -  
looking forward,  
on 2 - starting position,  
on 3 and 4 - the same movements are performed with the right leg

6. Starting position - standing with legs apart, arms close to the body,  
on 1 - lean forward, arms to the sides, head pulled back,  
on 2 - return to starting position

7. Starting position - standing, arms close to the body  
on 1 - raise the arms from the front to the top, stretch the left leg back - inhalation,  
on 2 - return to starting position - exhalation,  
on 3 and 4 - the same movements with the right leg

8. Starting position - standing,  
on 1 - lean forward, head pulled back, imitate breaststroke swimming with the arms,  
on 2 - return to starting position, etc.



The examples of exercises above are easy to perform, if they are explained to the target group and, even better, if accompanied by a musical background.

Very briefly, we want to touch on a problem that reduces the quality of life - vestibular disorders - often related to losing one's balance and/or becoming dizzy when moving. The primary symptoms - vertigo, imbalance, visual instability are accompanied by secondary ones, associated with a reduced level of activity, limitation of the volume of movement, increased tension, and reduced muscle strength. This leads to muscle fatigue and headaches. All of this contributes to emotional problems such as anxiety and depression. There is no one-size-fits-all recovery program. The training program must be personal, related to the specific problems. And yet, if there are no serious disorders, we must accept that in old age a variety of factors and situations can cause disorders in coordination. And this is not unexpected. Doing motor activity exercises can help a lot, or at least give you some confidence and self-esteem. Therefore, we offer several exercises that can be practiced at home:

1. Standing on one leg: /a chair with a back is used/ Stand behind the chair. Lift your right leg (bent at the knee) and balance as much as you can. Then repeat the exercise with the left leg. At first, you can hold on to the back of the chair. The goal is to keep your balance without using the chair.
2. Balance: Stand straight with your legs slightly apart. Make sure both feet are firmly placed on the ground. Stand in your best vertical position possible. Then transfer the weight of the



body to the right leg, and slowly raise the left foot from the ground to about 20 cm. Slowly lower the foot to the ground and stand in the starting position. Repeat the exercise 5 times. Then perform it with the other leg.

3. Stand straight behind a chair and hold on to its back with your left hand. Raise your right foot 20 cm from the ground, and with your right arm close to the body make a half circle from the front backwards - as if the hand of a clock is moving. Return to starting position and repeat with your left leg and left arm.



4. Backward consecutive lifting of the right and left leg: Stand straight behind the back of the chair, holding it well and using it as a support. Slowly raise your left leg back, hold for a while, return to the starting position and repeat with the other leg.
5. Walking on the spot: Walking is an excellent balance exercise for seniors. While walking on the spot, you may lean on an object to keep your balance. First, lift your left knee as high as you can and hold it as long as you can. Then repeat with the other leg. The ideal performance is to be able to do it without aids.
6. Raise the heels: The starting position is standing behind the back of a chair, using your hands for support. Do not lean forward over the back of the chair. Lift your heels and stand on your toes, then land on your heels again. Repeat the exercise 20 times.
7. Tightrope walking: Of course, you won't be walking a real tightrope. With paper tape, make a straight section 2-3 meters long. Try to move on it, alternating your legs, etc.



You can enjoy life at any age. Yes, there is an age at which everything seems normal and easy to do, but do you think that these elderly people, looking at each other, see their actual age? Most probably, 50-60 years later, they feel their childhood feelings again.

Now we will introduce you to a typical Bulgarian element. Bulgarian folk dances “Horo” and “Rachenitsa” are world-famous. People dance to some folk song, performed by a choir – often formed by women over 60. However, few people know that while they sing, the ladies also dance on the spot. At this age, singing and dancing the “Horo” at the same time is quite a workout.



Given the information above, we can only conclude that physical activity and sports are a source of health and longevity.

The concepts and techniques in sports are diverse and constantly evolving, but the elements, the movements are the same for young and old alike. The complexity of our intergenerational sport program is related to the specificities of different age groups: childhood - the age of games and dreams, when everything is possible /even if it is not/, youth - the age of prominence and proving oneself, and finally - old age... Everything happens according to the laws of life. As long as sport activity is concerned, it is important to correctly assess the physical capabilities of the respective target groups and, if possible, to have them managed by experienced PE teachers under medical supervision.

Our observations show that sporting talents could be found in every settlement. The difference comes from the fact that in small towns there is no one to see these talents and show them the way to sports success. That is why sports festival are needed, during which sports qualities are well displayed in front of many people.

As for the people over 60 - there is certainly a discrepancy between desire and physical capabilities, and sometimes – a lack of correct assessment of the health status.

At the same time, we happily take note of the research of specialists, constantly looking for ways to delay the aging process as much as possible, and even to somehow reverse it. In this regard, we would like to point out the experiments of researchers at the Institute of Sport Science, Madgeburg, Germany, led by Kathrin Rehfeld, according to which regular dancing reverses the symptoms of aging.





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