

**Federal state budgetary educational institution of higher education  
"North Ossetian State Medical Academy"  
Ministry of Health of the Russian Federation**

**DEPARTMENT OF GENERAL HYGIENE  
AND PHYSICAL CULTURE**

## **RESPIRATORY GYMNASTICS ON "HATTA-YOGA"**

Educational-methodical manual on the organization  
of independent work and study of the disciplines  
"Physical culture and sports" and "Elective course in physical  
culture and sports" of the main professional educational program  
of higher education – specialty program in the specialty  
31.05.03 Dentistry (partially implemented in English)

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**Asitashvili S.G., Andiev O.Kh.**

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The use of non-traditional means of health improvement in the educational process with students with weakened health, increases motivation for physical education and helps in restoring health and preventing the adverse effects of various factors.

This manual presents a system of breathing exercises with elements of yoga. "Hatha yoga"- a system for improving a person through the development of his hidden capabilities, a perfect method of natural treatment, a prophylactic agent. It is an orderly exercise system aimed at improving the body and mind.

The educational-methodical manual for students "Respiratory gymnastics in Hatha Yoga" is intended for conducting methodological lessons in physical culture with students of a special medical group studying in the specialty "General Medicine", "Dentistry", "Pediatrics", "Medical and Preventive Care" , "Pharmacy". Compiled in accordance with the curriculum. The presented materials meet the requirements of the educational standard for medical students.

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**Reviewers:**

Tsogoev A.S. – Doctor of Medical Sciences, Professor of the Department of Internal Medicine No.5 FSBEI HE NOSMA MOH of Russia

Tuaeva I.Sh. – Candidate of Medical Sciences, Associate Professor of the Department of Medical and Preventive Faculty of Epidemiology FSBEI HE NOSMA MOH of Russia

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### **PURPOSE OF THE LESSON:**

- to acquaint and train students in breathing techniques according to the "Hatha–Yoga" system;
- awaken the desire to treat your health as a priceless gift, to do everything possible to improve health.

### **A STUDENT SHOULD KNOW:**

- all three types of breathing: "lower breathing", "middle breathing", "upper breath";
- the rules for performing the exercises "Hatha–Yoga";
- indications and contraindications for the use of breathing exercises according to the "Hatha –Yoga" system.

### **A STUDENT SHOULD BE ABLE TO:**

- assess the correct dosing of the load when using the "Hatha –Yoga" system;
- to assess the effectiveness of breathing exercises "Hatha –Yoga".

### **QUESTIONS TO BE SURRENDED:**

1. Introduction
2. Definition of "Hatha–Yoga".
3. Physiological mechanisms of action of the "Hatha–Yoga" system
4. Methodical instructions for organizing yoga classes.
5. Indications and contraindications for breathing exercises "Hatha–Yoga".
6. Methodology for the use of breathing exercises "Hatha–Yoga" and effects their impact.
7. Basic postures (asanas) in yoga.
8. Conclusion.

### **RECOMMENDED LITERATURE:**

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## 1. Introduction

In the methodology of conducting classes with students of a special educational department, traditional means, of course, remain basic. However, a number of reasons determine the emergence of new and non-traditional types of physical activity in mass physical culture movement. These types include athletic gymnastics (bodybuilding), stretching, wushu, hatha yoga, breathing exercises and gymnastics for the eyes, as well as gymnastics aimed at strengthening muscle groups that play an important role in performing the functions of motherhood in girls. Undoubtedly, the use of exercises of non-traditional types of gymnastics in the classroom in a special educational department at the university will give classes a new emotional color, will contribute to their revitalization, and will increase students' interest in physical exercises,

Modern living conditions place high demands on the level of physical development, performance and defenses of the human body. When talking about yoga at the present time, most often they mean the section of hatha yoga associated with physical exercises. According to yoga teachings, our body lives at the expense of positive and negative currents. If they are in balance, then we can talk about the health and harmony of the body.

## 2. Definition of yoga, hatha yoga

Modern living conditions place high demands on the level of physical development, performance and defenses of the human body. When speaking about yoga at the present time, most often they mean the section "Hatha Yoga" related to physical exercises. According to yoga teachings, our body lives at the expense of positive and negative currents. If they are in balance, then we can talk about the health and harmony of the body.

**"Gymnastics of Indian Yogis"** – a conventional name reflecting the practice of using in various countries in physical education a number of specific exercises, traditional for Indian yoga.

Indian yoga is a philosophical and religious system based on the ability and method of controlling the psyche and physiological manifestations of the body.

The word "yoga" in translation from Sanskrit literally means "connection". The essence of the yogis' worldview is to unite the individual human soul with the world spirit, with the absolute soul and God. According to yogis, this fusion is the purpose of life. "Purification" and "improvement" – these two concepts underlie the teachings of yogis, which, in addition, provides for the implementation of a set of physical exercises, breathing control, observance of food hygiene, as well as the

relevant norms of ethics. It is believed that yoga is a way of life leading to physical health, mental balance, a calm and kind outlook on the world around us.

Yoga is not a frozen teaching, it is dynamic, modern, moving from religious and mystical interpretations to purely practical goals. It is not intended for any narrow circle of people, practical knowledge of yogis does not mean that a person should become a hermit. Social status does not matter for yoga practice. Anyone who wants to reach the heights in yoga should know about his health, consult with doctors and be ready to practice systematically.

For yoga, asanas are typical – postures. Actually, a set of yoga exercises consists of a set of asanas with a delay in each pose from a few seconds to a minute and slower transitions from one pose to another. The names of the poses are most often associated with the names of animals: snake, fish, cobra – or objects: plow, wheel. The degree of difficulty of the exercises is different: a stand on the head and forearms, a horizontal support on the elbows. Many positions require increased joint mobility, especially in the hip and shoulder joints.

***Hatha yoga*** is an integral part of Indian yoga, which includes a system of physical exercises aimed at improving the human body and the functions of internal organs. It consists of static postures (asanas), breathing exercises and psychoregulation elements. The effect of asanas on the body depends on at least two factors: strong stretching of the nerve trunks and muscle receptors, increased blood flow in a particular organ (or organs) as a result of a change in body position. When the receptors are excited, a stream of impulses arises in the central nervous system (CNS), stimulating the activity of the corresponding nerve centers and internal organs.

According to the teachings of yogis, our body lives at the expense of positive and negative currents, and when they are in complete balance, then we can talk about excellent health. In the language of ancient symbolism, positive current is denoted by the word "ha" (sun), negative – by the word "tha" (moon). As a result of the merger of these words, the word "hatha" was obtained, the meaning of which symbolizes the unity of opposites.

Scientists believe that with the help of long and focused exercise, you can achieve the ability to regulate autonomic functions. Each hatha yoga exercise is characterized by a certain positive impact on various organs and systems of a person. The high vitality and dexterity of the body achieved with regular exercise in the yoga system can be maintained until the end of life.

### **3. Physiological mechanisms of action of the "Hatha–Yoga" system**

*The Purpose of Yogi Breathing Exercises* – an increase in the volume of inhaled air to increase bioenergetic processes, as well as to slow down breathing for a more economical consumption of oxygen. The most appropriate, and in this regard, is the complete breathing of yogis. Deep rhythmic breathing is also distinguished, which requires compliance with a given rhythm. Full undulating and deep rhythmic breathing combined with special physical exercises provide a great opportunity for saturation with Prana, which Paradise provides an increase in the efficiency of the body, improves the body, leads to harmony. Full, slow and slow breathing allows you to like to maximally absorb Prana from the air and accumulate CO<sub>2</sub> in the blood and cells of all body tissues.

With improper deep and frequent breathing without delay, chronic hyperventilation of the lungs occurs, excessive excretion of carbon dioxide ("emasculatation") from the body, and as a consequence, the occurrence of various diseases: bronchial asthma, hypertension, coronary heart disease and many others, as they turn on "protective" reactions of the body.

Breathing exercises of yogis lead to a decrease in the respiration rate (up to 1-3 breaths per minute) and to an increase in the content of carbon dioxide for in the body, which contributes to the normalization of the most important systems of the body: the respiratory system, cardiovascular system, nervous system, metabolism.

### **4. Methodical principles of Hatha–Yoga**

In most books on yoga, the authors do not give the methodological principles that yoga is recommended to their students when learning – complexes. There are many reasons for this: first, the tradition of transferring knowledge directly from teacher to student; secondly, yogis believe that not every person, even from a moral and ethical point of view, is prepared to start practicing. No wonder the yogis have such an expression: "When the student is ready, the teacher comes".

Nevertheless, I would like to dwell on some basic methodological points:

#### **1. Gradual loading:**

- ✓ start carefully and avoid overvoltage;
- ✓ a gradual increase in learning and doing exercises (increasing dosage);
- ✓ start with simple exercises and move on to more complex;
- ✓ do not try to immediately achieve the final result in a difficult asana, exercise systematically and in a few months you will achieve success;
- ✓ gradualness fosters will, self-discipline, strengthens the nervous system;
- ✓ take into account your physical capabilities.

Hatha –Yoga exercises will only be beneficial when applied wisely. Hatha yoga exercises can be dangerous if the gradual exercise is not followed. Pay particular attention to delays. Exercises that include holding the breath are useful when they are started gently and gradually increase in duration. Excessiveness in this can lead to expansion of the lungs and heart.

2. Daily practice (consistency and regularity). To do hatha yoga exercises (especially asanas) you need daily regardless of age.
3. Exercises to perform without effort, without tension, naturally.
4. Carefully monitor your well-being. Exercise should never be done until tired. After the exercise, you should have a pleasant feeling and excellent physical well-being.
5. Strictly follow the instructions of the methodology for performing hatha yoga exercises in general and the methodology for performing this exercise.
6. Do not exercise on a full stomach.
7. Do not practice just before going to bed, as hatha yoga exercises are invigorating.

## **5. Indications and contraindications for breathing exercises "Hatha –Yoga"**

In conditions of hypodynamia, an ever-increasing pace of life and worsening- the ecological situation of breathing exercises according to the systemThe topic of Yoga can be recommended to almost all students of a special medical department, but for each nosological group they should be performed in different volumes.

"Hatha Yoga" acts as an aid in the fight against many chronic diseases and helps a complete recovery from diseases such as:

- ✓ osteochondrosis,
- ✓ diabetes,
- ✓ hypotension,
- ✓ cardiovascular diseases,
- ✓ obesity.

### **Contraindications:**

- ✓ organic lesions of internal organs;
- ✓ injuries that interfere with the performance of poses;
- ✓ diseases accompanied by high fever;
- ✓ functional and organic lesions of the nervous system with significant violation of its functions;
- ✓ oncological diseases;

- ✓ conditions accompanied by a risk of bleeding (tu pulmonary berculosis, peptic ulcer);
- ✓ during menstruation (inverted positions).

*The use of breathing exercises according to the hatha yoga system in physical education classes for students of a special medical department with the following diagnoses is possible only subject to the admission of a doctor and excludessome poses, mostly inverted or lightweight poses:*

- ✓ serious chronic diseases;
- ✓ pronounced hypertension;
- ✓ circulatory disorders;
- ✓ acute middle ear disease;
- ✓ diseases of the vestibular apparatus;
- ✓ organic changes in the retina.

## **6. Methodology for the application of breathing exercises of the "Hatha –Yoga" system and the effects of their influence**

Yogis believe that breathing is the most important part of the human bodys activity, "for all its other activities depend on breathing". Life depends entirely on the act of breathing. To breathe is to live, and without breathing there is no life. Yogi Ramacharaka defines the meaning of breathing as follows: "The child takes a long deep breath, holds the air in his lungs for a minute in order to extract the life-giving parts from him, and then slowly exhales it, and life begins for him. The old man lets out a faint sigh, his breath stops, and life stops. From the first deep breath of a child to the last breath of a dying old man, a long life of constant breathing passes".

Yogis use exercises, thanks to which they gain power over their body and become able to send to any organ its intense stream of life force – "prana", which strengthens and heals this organ. They know that rhythmic breathing can bring oneself into a harmonious vibration with all of nature and help the development of the hidden forces of their body.

***Prana*** – This is a universal beginning of energy, manifested in a wide variety of forms, including life force. It should be emphasized that a person receives energy not only through nutrition and oxygen supply during breathing. Energy (prana), according to oriental ideas, also comes directly through the bioactive points of the body surface, through the upper nasal passage, the region of the large fontanelle ("the hole of Brahma").



***Pranayama*** Is control over prana, especially over prana, which has taken the form of life energy. Yogis argue that this control, if brought to a sufficiently high degree, gives a person dominion over all other manifestations of prana in kind. This is the secret of power and power. Prana is the subtlest vital force that is contained in everything and manifests itself in the physical plane as a movement or action, and in the spiritual as a thought. Thus, the word "pranayama" means "retention of vital energy".

In yoga, pranayama is one of the eight means of purifying and enlightening the mind (chitta), since it is believed that regulating the breath leads to concentration of the mind, and when holding the breath, the mind reaches a state of absolute concentration.

Pranayama allows you to control the invisible, astral body. Since there is an intimate connection between breathing and nerve "currents", control over breathing leads to control over vital internal "currents". Pranayama occupies a very important place in Indian religion. It precedes every Hindu religious rite.

Yogis attached social significance to their theory of breathing. The point is that with the help of proper breathing, according to yogis, it is possible to give health not only to individual people, individual nations, but also to all of humanity. "Just one generation of people who breathe correctly", writes Ramacharaka, "will revive humanity and make diseases so rare that they will be looked at as something extraordinary".

***Pranayama is yoga breathing exercises.*** It is based on complete undulating breathing, which consists of three types: lower (abdominal); middle (costal); upper (clavicular). It is advisable to master breathing exercises with training in the ability to control the work of the abdominal muscles and the practice of lower breathing.

***Lower Breathing.*** Pull the abdomen towards the spine as you exhale and push forward as you inhale by relaxing the abdominal muscles. Attention is focused on the navel area. At the same time, the diaphragm, moving like a piston up and down, squeezes air out of the lungs during exhalation and expands them during inhalation, which improves venous circulation, promotes the removal of excess bile from the gallbladder, and prevents the formation of stones. The entire gastrointestinal tract is massaged and toned. It is better to start the exercises in the starting position lying; Having mastered the exercises, go to the starting position standing, repeat 5-7 times.

***"Middle breath"***. Starting position: lying and sitting. Attention is focused on the ribs. First, exhale slowly, then in two counts – inhale, expanding the chest (you can put your hand on the lower part of the ribs for control), for 4 counts – exhale, lightly press the ribs with your hands. There is, as it were, a "collapse" of the chest.

**"Upper breath"**. Of all types of breathing, it is the most unproductive, since more effort must be made, and less air enters the body. It is used in practice to improve ventilation of the apex of the lungs. Upper breathing is performed while standing, after exhalation. Inhale – the chest rises slightly upward, and the shoulders move back, the stomach is drawn in. With an exhalation, lower your shoulders down, inhale and exhale briefly, without counting. Repeat 5-6 times. After mastering "full breathing", it is recommended to perform the breathing exercise "Anulema-vilema".

### ***Exercise number 1. "Anulema-vilema"***

The exercise cycle consists of seven elements. Starting position: sitting in the "lotus", "half-lotus" or other comfortable position.

1. Exhale calmly, inhale through the right nostril (the left nostril is closed with the middle finger of the right hand).
2. Holding the breath after inhalation.
3. Exhale through the left nostril, closing the right thumb with the right opening the left nostril.
4. Inhale through the left nostril (four beats of the pulse).
5. Holding the breath after inhalation without changing the position of the finger (16 beats pulse).
6. Exhale, closing the left nostril with the middle finger of the right hand, opening right (for 8 beats of the pulse).
7. Holding the breath after exhalation.

In the first lessons, perform as many breathing exercises as possible to maintain the rhythm and a feeling of comfort, with a rest of 30 seconds. The recommended formula for the respiratory cycle is 4: 16: 8. For those who have insignificant indicators of the vital capacity of the lungs, it is suggested to do this exercise according to the formula 8: 8: 8. Perform 5-10 times and then add once every 10 days.

#### ***Breathing Exercise Effect:***

- ✓ normalizes the work of the respiratory center;
- ✓ reduces the frequency of breathing;
- ✓ promotes the activation of mental activity;
- ✓ relieves fatigue.

### ***Exercise number 2. "Rhythm of Yogendra"***

This type of breathing was scientifically substantiated in 1918 by the founder of the Yoga Institute, Yogendra. There are two options for doing this breathing exercise. Starting position: main stance.

1. Inhale is normal, exhale is slow, gradual.
2. Tighten the stomach to the spine, close the "windpipe".
3. Without inhaling air, simulate inhalation, lift the diaphragm up.
4. Keep this position for 5-10 s.
5. Inhale – exhale, repeat the tightening of the abdomen. Repeat 2-3 times.

***Breathing Exercise Effect:*** massage of internal organs, contributes to a significant increase in VC.

### ***Exercise number 3. "Ha-breathing"***

Starting position: basic stance or sitting, hands on knees, exhale.

1. lowly inhale, hands up through the sides. Holding the breath for 4-5 sec.
2. A sharp bend forward, hands down, exhale through the mouth with the sound "Ha" (without effort).

Repeat 3-5 times. This exercise can be performed in the initial lying position. During exhalation, the legs, bent at the knees, quickly rise and press their hands against the stomach.

***Breathing Exercise Effect:*** the work of the liver, spleen and pancreas is activated, digestion is improved.

### ***Exercise number 4. "Kapalabhati"***

Starting position: standing or sitting, relax the abdominal muscles, squeeze the anus.

1. The exhalation is strong and sharp, through the nose, quickly and sharply tighten the abdominal muscles and raise the diaphragm (it turns out, as it were, "barking" exhalation).
2. Inhale is slow, passive.

In one cycle from 5-10 to 20-40 exhalations. Rest between cycles 30 sec. Perform 3 cycles.

***Breathing Exercise Effect:*** removes carbon dioxide from the blood. Cleans the mucous membrane of the nasal cavity, helps concentration of consciousness, is an excellent exercise for the development of VC.

### ***Exercise number 5. "Fur forging"***

Starting position: "lotus" or "half-lotus" pose, exhale slowly.

1. Perform 10 fast powerful breaths – exhalations (while inhaling, relax muscles of the abdomen, as you exhale, pull in).
2. Holding the breath for 7-14 beats of the pulse, exhaling slowly. Repeat 3 times.

This breathing exercise requires caution. At the slightest sign of fatigue or discomfort, you should immediately stop performing it.

***Breathing Exercise Effect:*** cleans the nasopharynx, has a therapeutic effect for colds, it can be used to prevent ARVI and influenza.

### ***Exercise number 6. To reduce the size of the abdomen***

Starting position: main stance.

1. Exhale, pull the stomach up and in as far as possible.
2. To stay in this position for 2-3 s. Inhale, relax your stomach. Repeat 10-20 times. Rest 1-2 minutes between repetitions, then stretch and rub your stomach with your hands and do a cleansing breath.

***Breathing exercise effect:*** reduces the subcutaneous fat layer on the abdomen, strengthens the abdominal muscles.

### ***Exercise number 7. "Sahaj Pranayama"***

Starting position: lying on your back, heels together, arms along the body. one. Inhale slowly, hands up behind your head, put on the floor.

2. On exhalation, return to the starting position. Repeat for 1–2 minutes.
3. While inhaling, raise your right leg up, hold it for 1-2 s, while exhaling lower.
4. The same with the left foot. Repeat for 1 min.

***Respiratory exercise effect:*** strengthens the cardiovascular system, useful in rheumatism.

### ***Exercise number 8. "Cleansing breath"***

Starting position: feet shoulder width apart.

1. Slow full breath, holding the breath for 2-3 seconds.
2. Exhale through the lips, folded into a tube. Perform two three short and strong thrusts (do not puff out the cheeks). Repeat 2-3 times.

***Breathing Exercise Effect:*** ventilates the lungs, relieves fatigue, helps to keep warm during hypothermia.

### ***Exercise number 9. "Mental breathing"***

Starting position: lying on your back, relax, restore rhythmic breathing. Imagine a picture of breathing after changing the next item:

1. Continuing to breathe rhythmically, consistently direct the flow of prana to the 7 vital centers: crown, forehead, back of the head, base of the throat, navel, solar plexus, reproductive area.
2. Draw the flow of prana back and forth several times, from head to feet.
3. Finish with cleansing breath.

After mastering all types of breathing, complete breathing is started.

### ***Exercise number 10. "Breath of the buzzing bee"***

Choose any comfortable posture from the starting position, or just sit in a chair. Place your elbows on your knees, and press on your knees, and press the ear tragus with the tips of your thumbs. Close your eyes and focus on your stomach, heart, throat, and then your head. Take a slow deep breath. As you exhale, make a buzzing sound in the palate. This is one cycle. Do 10 rounds. Take your breaths slowly. Do not go to exhale, try to slowly fill your lungs with air. Concentrate on the buzzing sound. You can experiment with its height to find a more pleasing tone. Feel the vibration from the sound on your face, head, throat, chest, and other parts of your body. After finishing the exercise, sit still. Don't rush to open your eyes.

You may feel a pulsation in your body caused by sound vibration for some time. Don't move. The calmer you sit, the more you can feel.

#### ***Simplification:***

- a) take a calm and long breath;
- b) if you feel dizzy, take a break.

***Result:*** the practice of this breathing relieves anger and overstrain, noticeably improves well-being.

### ***Exercise number 11. "Warming breath"***

Sit on the floor in any comfortable position that will keep your back straight. The head should not tilt forward or backward. Close your eyes. As you exercise, focus on your throat, chest, and abdomen. Exhale with your lungs completely empty. Tighten your perineal muscles. This is the Root Lock. Before inhaling again, engage your abdominal muscles, lifting your navel slightly towards your spine. This is the Abdominal Lock. Inhale slowly and deeply with both nostrils, keeping the abdomen still. Partially close the glottis as if swallowed to produce a distinct hissing sound. The sound should be soft, and the breathing should be relaxed, since the stomach is slightly compressed, it does not can be deflated and air fills the ribcage, which expands on inhalation. Place one hand on your stomach to control its movement. Then slowly exit, continuing to squeeze your throat and making a sound similar to the sound of the ocean. This is one breathing cycle. When mastering this breathing technique, do only a few cycles at a time. As you gain confidence, increase the number of cycles to 15.

***Result:*** this pranayama essentially activates energy. For this reason, it is best done with the Abdominal and Root Locks. Using the locks retains the energy generated by Warming Breath. In this pranayama, breathing is performed with the upper part of the chest, and not with the stomach. Warming breathing, like most other types of pranayama, is performed with the mouth closed, breathing through the nose.

### ***Exercise number 12. "Breath of the glowing skull"***

The exhalation is done quickly, like bellows breathing. When the lungs are empty, a vacuum forms in them, allowing air to flow naturally. Inhale is done slowly and without compulsion. Perform 10 to 30 breaths per cycle. Gradually bring the number of sharp exhalations to 50.

**Contraindications:** pregnancy, menstruation, high eye pressure, ear problems.

### ***Exercise number 13. "Even breathing"***

Lie down or sit comfortably. After a while, start counting in your mind, count to four on each inhalation and exhalation, making 5-8 cycles. Extend the inhalation and exhalation to 5, and after the fifth breaths to 6. Extend the inhalation and exhalation to 7. Make sure the forehead and jaw are relaxed. After 5-10 cycles, increase the count to 8. If you continue to feel comfortable, increase the length of inhalation and exhalation to 9. Relax your tongue and facial skin. Whatever the final number, take several cycles of even, long breaths. Then stop counting and breathe naturally for 10 cycles.

**Result:** used to relieve tension and sleep problems.

The use of breathing exercises is not only an effective means of increasing general physical fitness, but also health promotion. Systematic exercises improve the functioning of the lungs, heart, brain and muscles, and help the body recover faster after mental stress. Outdoor activities improve well-being, temper the body, form the correct posture, develop willpower, determination and other qualities necessary in everyday life.

## **7. Basic postures (asanas) in yoga**

The next step in teaching hatha yoga is mastering **asana** (pos).

**Asanami** in yoga, they call postures that restore balance in the body, strengthen weak points and relax tense ones, have an external and internal effect not only on the physical body, but also on the psyche.

A set of yoga exercises consists of a set of asanas with a delay in each pose from a few seconds to a minute and slower transitions from one pose to another. The names of the poses are most often associated with the names of animals: snake, fish, cobra – or objects: plow, wheel. The degree of difficulty of the exercises is different: a stand on the head and forearms, a horizontal support on the elbows. Many positions require increased joint mobility, especially in the hip and shoulder joints.

Asanas – static exercises – are a good way to develop articular flexibility and a sense of balance with little energy consumption. In hatha yoga, as in any

system of physical culture, it is emphasized that taking care of the body begins the development and improvement of the main thing – the spirit (“a trained body contributes to training the mind”).

It is well known that many functions of our body are regulated by consciousness. We walk, run, stop, sit down, open and close our eyes, etc., and all these actions can begin and interrupt at our own will. But are we able to speed up or slow down the beating of the heart with just an effort of will? Are they able to affect the work of the stomach and intestinal peristalsis? A little special workout and you can speed up and slow down your heart rate.

Let us recall, for example, the sour taste of lemon – and salivation begins in the mouth. It is not very difficult to make another person blush, that is, to provoke a sharp expansion of the smallest blood vessels. With unreasonable and inappropriate fears or insomnia, it is sometimes enough to analyze your emotions in order to calm down. An irritable person can be advised to hold their breath a little at the time of an emotional outburst, and when inhaling. An excess of carbon dioxide will focus the brain on the respiratory center, and the outburst of anger will fade away.

It has long been noted that some rather uncomfortable positions of the body stimulate the internal forces of the body, cause a response resistance. In such positions, breathing becomes difficult, while the vessels are trained. Miniature muscles, performing additional active work, require more oxygen and nutrients. Blood pressure in certain places rises due to "constrictions". The blood tends to spread through the adjacent small vessels, capillaries. Hence the feeling of warmth in these areas.

Cramped conditions are conducive to training the respiratory system. To maintain vital functions, our body continuously consumes energy. Various organic compounds that chemically interact with oxygen in the air are burned to form simpler products and release the energy needed to maintain the vital functions of the body.

For proper breathing according to the yoga system, good patency of the nasal cavity and the absence of pathological changes on its mucous membrane are essential. The goal of yogis is to indirectly influence tissue respiration with the help of rhythmic breathing in order to maximize the bioenergetic efficiency of metabolism. In general, in the physiological aspect, hatha yoga develops muscles and increases mobility, and also massages the internal organs, which ensures their good work.

## First group

### *Basic poses for complete rest*

**1. Ideal Rest Pose (Shavasana).** This posture is very important for rest and relaxation, since performing any complex asana without subsequent relaxation is ineffective. Between asanas, it should be performed for 15-20 and up to 60 seconds. At the end of the lesson, the time spent in this position can be up to several minutes. Shavasana is performed lying on the back. Hands along the torso, palms up or down, fingers slightly bent. The head is tilted to the right or left. The eyes are closed (Fig. 1, a). You need to try to completely relax. Mentally trace the gradual relaxation of the legs, starting with the fingers, feet, lower legs and ending with the thighs. Feeling heaviness and light warmth in the legs, proceed to relaxing the hands, starting with the fingers, hands, forearms and ending with the shoulders. When your hands become completely relaxed, heavy and you feel a slight warmth flowing through your hands,

**2. Crocodile pose (makrasana).** After performing postures such as dhanurasana and bhujangasana, in order to immediately relax without turning over on the back, they take makrasana. Performing makrasana, lie on your stomach, slightly spread your legs, pull your socks off. Arms bent at the elbows can be placed under the head, or can be placed behind the head. Either turn your head to the side, or touch the floor with your forehead (Fig. a, b).

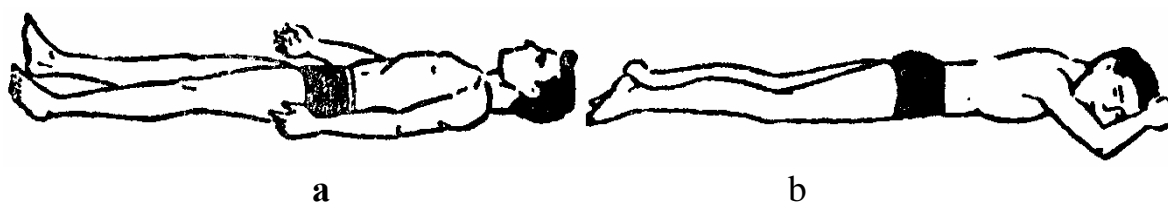


Figure: 1. Pose of ideal rest.

**3. Sleep pose (drabhasana).** Lie on your right side, legs extended (knees can be picked up). The right palm is under the head, the left palm is on top along the body. The eyes are closed. Breathing is calm, calming rhythmic. First, relieve body tension – from head to toe. Thoughts aside. And you gradually go to sleep, deep and therefore dreamless, well refreshing.



## Second group

Exercises are mainly intended to develop the plasticity of the muscles in the back and tendons of the legs, as well as to develop mobility of the spine and ribs.

### 1. *Self-grasping (pavanamuktasana).*

I. p. – while sitting, bring the heels with your hands to the perineum (legs do not touch the floor). For men: clasp your right wrist with your left hand, and vice versa for women. Bend your back and bring your head to your knees. Sit on one point in the coccyx area, keeping balance for some time, relieve excess tension, breathe freely and rhythmically (Fig. 2, a).

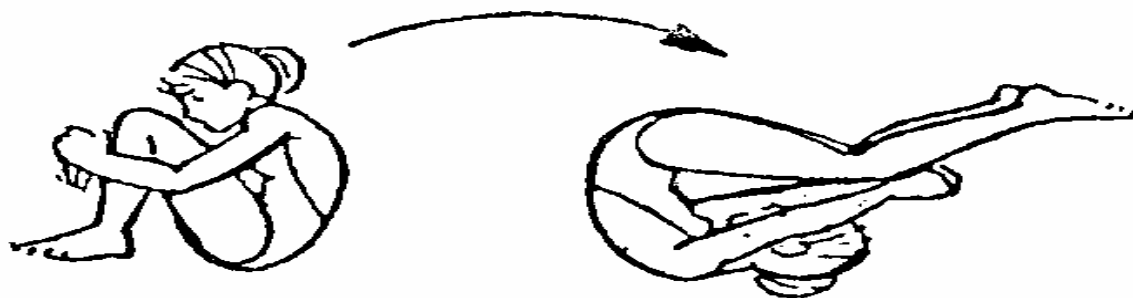


A B

Figure: 2. Self-grip.

2. *"Gas" pose (vatyanasana).* This pose is similar to the first pose, but is performed while lying on your back. They call it gas because it helps to free the stomach and intestines from the accumulation of gases (Fig. 2, b). First, you need to lie on your back, stretch out, put your hands along the body. Then gently raise your legs and inhale, then bend them at the knees and exhale. After that, being in the lying position of the group, hold your breath for a few seconds and return to and. p. – inhale.

3. *Rolls in a grouping ("roller").* From the seated tuck position, roll to the prone tuck position and return to and. etc., that is, from the position of pavanamuktasana to the position of vatyanasana (Fig. 3).



A B

Figure: 3. Rolls in a grouping ("roller").

When moving backwards, inhale, while moving forward, exhale. For beginners, exercise should be done on a sufficiently soft bedding. As you master the asana, replace the mat with an ordinary soft rug. At first, you should do no more than 5-7 rolls.

**4. *Sitting on the heels (vajarasana).*** Vajarasana is a very simple and comfortable posture for doing breathing exercises, meditation. I. p. – connect your legs and kneel, pull back the socks and slightly spread the heels so that a hole is formed. Sit down with the buttocks in the hole, keep your back and head straight, relax your hands and put them on your knees (Fig. 4, a). This posture promotes better food digestion and can therefore be performed after meals. In addition, it influences many internal organs, increases blood circulation in them, contributes to the acquisition of balance, fortitude, and self-confidence.



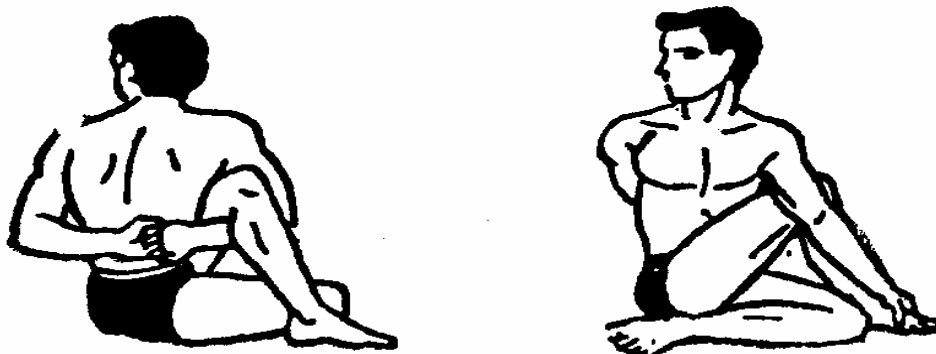
**A B**

Figure: 4. Sitting on the heels.

**5. *Lotus (padmasana).*** Full lotus is a pose of increased difficulty and requires good mobility in the hip joints. (Fig. 4, b).

And only patience, perseverance and gradualness in the classes will help to achieve perfection in performing padmasana – the main posture of hatha yoga. To perform it, you need to sit more comfortably on a mat or mat, stretch your legs forward, with both hands pull the foot of your right leg towards you, holding it by the heel, bend your knee and put your foot on your left thigh. Then, in the same way, put your left foot on your right thigh. Having taken this position, keep the body straight. "Lotus" is easier to master if each new attempt is preceded by several preparatory exercises. For example, from a prone position, bend the right leg so that its foot lies in the left palm on the thigh of the right leg, while with the right hand, lightly press on the right knee, lowering it to the floor. The same should be done with the left leg. Likely, Padmasana is one of the few postures that has a versatile effect on the body. First, it has an extremely beneficial effect on the spine and joints of the legs: hip, knee, ankle. Secondly, it stimulates the organs of the digestive system, endocrine glands (adrenal glands, pancreas and sex glands). Thirdly, it has a positive effect on the cardiovascular and respiratory systems.

**6. Spiral, twisted posture (*ardha matsyendrasana*).** Sitting on the floor, stretch your legs together. Pull the left heel under the right thigh so that the knee is firmly on the floor. Throw the right foot over the thigh of the left leg and place it on the floor. Now turn the torso to the left, with the right hand, bending slightly, thread it outside under the left knee. The left hand is bent behind the back and try to take hold of the right hand. Turn the head to the left as much as possible so that the chin is above the left shoulder, keep your back straight, and do not tilt your head (Fig. 5, a). If at first it is not possible to clasp your hands, you can grab your left foot with your right straight hand, leaning on the outside with your elbow on the knee of your left leg. Just bend your left hand behind your back (Fig. 5, b).



**A B**

Figure: 5. Spiral, twisted posture (*ardha matsyendrasana*).

You should be in the pose from 15 seconds to 2 minutes, and then perform it in the other direction. This spiral position of the spine provides the fastest relaxation. Therefore, the asana heals back pain, corrects spinal defects. The work of all digestive organs, as well as the spleen, bladder, and gonads, is activated.

**7. Half circle pose, bridge (*ardha chakrasana*).** The asana can be performed from two starting positions: lying and standing. The easiest option is from the supine position. Bend your knees and place your feet parallel shoulder-width apart as close to the pelvis as possible. Bend your arms and put your palms on the floor, at the level of your ears, fingers should be directed to your shoulders (Fig. 6, a). After that, unbending arms and legs, lift the body up. Bend well, tilt your head back (Fig. 6, b). Hold the "bridge" for about 1 minute, keeping the back muscles tense and concentrating on the spine. Breathing is calm, even. This asana is very effective for posture defects: it corrects stoop and lateral curvatures, and increases the flexibility of the spine. Stimulates the function of the spinal cord, tones up internal organs, improves metabolism.



A B

Fig. 6. Bridge (ardha chakrasana).

### Third group

*The group exercises are intended to improve the function of the abdominal organs and the sympathetic trunk of the autonomic nervous system, as well as to strengthen the muscles of the trunk.*

1. **Cobra pose (bhujangasana).** Lie face down, palms on the floor near your shoulders. Take a full breath and, slowly raising your head, tilt it back away. Following the same, straining the muscles of the back, raise the shoulders and trunk (only at the end helping with the hands), but so that the navel remains on the floor (Fig. 7, a). Focus first on the area of the thyroid gland, and then, as it bends, on the spine, from top to bottom. Remove excess body tension. After 5-10 seconds, lower your head forward, relaxing the neck muscles, and immediately slowly begin to turn your head to the right so that you can see the heel of your left leg. At the same time, the shoulders remain motionless (Fig. 7, b).



A B

Figure: 7. Pose of the cobra (bhujangasana).

Having sustained the pose for another 5-10 s, lower the head forward again, relax the neck muscles and repeat the same in the other direction. Breathing while holding the pose is voluntary. Exit the pose slowly, with gradual relaxation of the muscles of the arms, back, neck; lie on the floor and completely relax by taking makrasana. Bhujangasana gives elasticity to the spine, replaces the displaced vertebrae, helps to heal sciatica, strengthens the muscles of the back and neck, and improves posture. In addition, it tones up the abdominal organs, eliminates

constipation, and increases appetite. Turning the head while holding the posture causes intensive blood circulation in the lumbar region, which normalizes the activity of the kidneys. The asana is very useful for women, as it tones the pelvic organs, normalizes the menstrual cycle.

**2. Grasshopper (*salabhasana*).** Lie face down, forehead and nose touching the floor. Hands along the body, palms down. Taking a small breath, raise both legs as high as possible, leaning on the arms, chest and shoulders (Fig. 8, a). Maintain the pose for 15-20 s and return to and. etc., relax. In the beginning, you can start with the half-grasshopper pose (*ardha salabhasana*), that is, lift only one leg (Fig. 8, b).

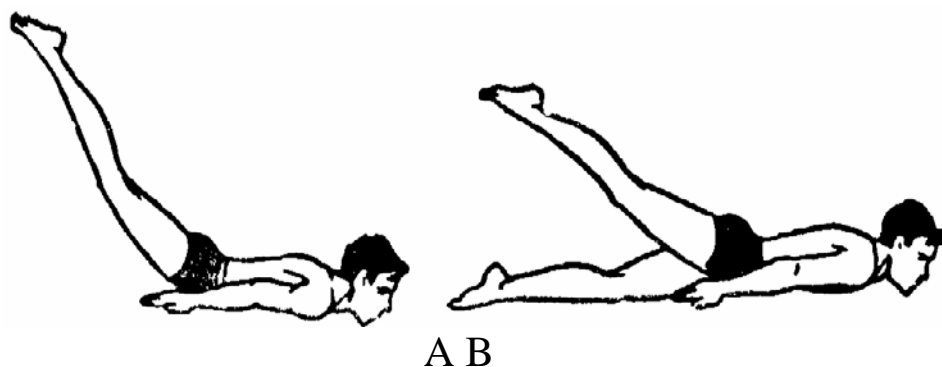
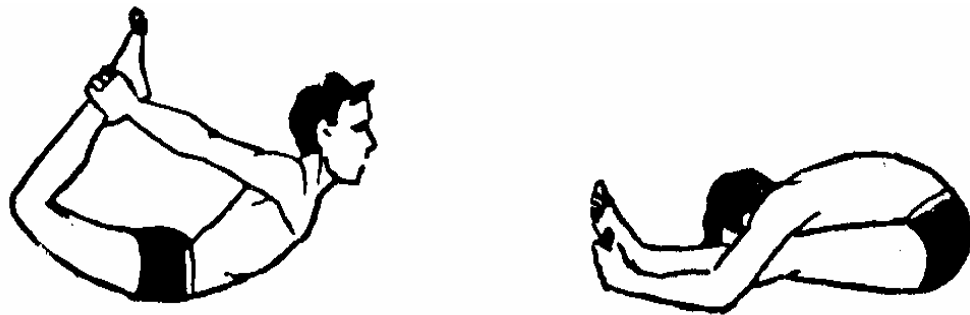


Figure: 8. Grasshopper (*salabhasana*).

*Salabhasana* gives elasticity to the spine, strengthens the chest, neck, shoulders, improves vision, increases blood circulation in the genitals and stimulates the functions of the sex glands.

**3. Bow pose (*dhanurasana*).** I. p. – lying on his stomach, legs together, arms along the body. After exhaling, bend your knees and grab the back of your feet with your hands. Extending the legs and stretching up the arms, bend strongly, tilt the head back (Fig. 9, a). You can roll forward and backward in time with your breathing. When leaving the asana, first lower your torso and bent legs, then lower your arms and, putting your legs and head on the floor, relax.

*Dhanurasana* strengthens the muscles of the back and shoulder girdle, joints, improves posture, relieves fatigue. The onion pose also stimulates the functions of the liver, kidneys, endocrine glands, normalizes the production of insulin, the function of the sex glands, increases potency in men, and activates digestion.



**A B**

Figure: 9. Bow pose (A) – dhanurasana and forward bend (B) – pashimottanasana.

**4. Bend forward (*pashimottanasana*).** Sit on the floor, connect your legs and straighten forward, keep your back and head straight. Raise your arms up and very slowly begin to bend forward, as if stretching the spine, until you touch your hips with your stomach and chest, and you grasp your feet with your hands (Fig. 9, b). Make sure that the legs do not bend at the knees, and the back remains level. Leaning forward, exhale, and straightening – inhale, being in a slope – breathe evenly.

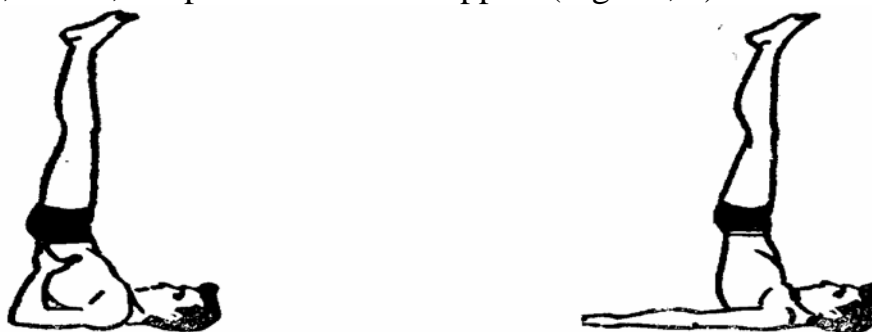
Performing pashimottanasana has a beneficial effect on the spine, correcting pathological curvatures and normalizing the condition of the lumbosacral region, stretching and toning the muscles of the back, legs and arms. Stimulates the function of the sex glands. Calms the nerves. It has a beneficial effect on the cardiovascular system, prevents upset stomach, liver, spleen, kidneys and intestines. Regulates the function of the pancreas and normalizes insulin production. The same exercise can be performed while standing.

### ***Fourth group***

Exercises in this group are primarily designed to improve the functions of the brain and spinal cord, to strengthen memory, hearing, sight and smell, to normalize the functioning of the digestive system, thyroid gland, and to develop the muscles of the neck and shoulders.

**1. Universal pose (*sarvangasana*).** There are several options for performing sarvangasana. The simplest, but then the main time is salamba sarvangasana. The pose should be started from and, etc. lying on your back, legs together, arms along the body. Taking a shallow breath, begin to slowly raise your straight legs to an upright position, while the pelvis and lower back touch the floor. Next, raise the pelvis, supporting it with your hands until the body takes a vertical position: keep your head straight, your chin should rest exactly on the sternum. The main weight

of the body falls on the back of the head, neck and shoulders. Use your hands to help maintain balance, supporting not the pelvis, but the back (Fig. 10, a). Having mastered the salamba sarvangasana, one can begin to master the niralamba sarvangasana, that is, the posture without support (Fig. 10, b).



**A B**

Figure: 10. Universal posture.

For a complete exit to this pose, you must first perform salamba sarvangasana, then lower your hands to the floor. Focus attention alternately in the pelvic area, on the spine and solar plexus. Sarvangasana normalizes and stimulates the functions of almost all body systems, energizes the thyroid and sex glands, strengthens the respiratory system, heals lung diseases, and also improves the functioning of the cardiovascular and digestive systems. Normalizes blood pressure.

**2. Plow (*khalasana*).** This is one of the most popular hatha yoga poses. There are two options for its implementation. Let's take a look at the simplest way first. I. p. – lying on his back, legs together, arms along the body, palms down, head straight. While inhaling, very slowly raise straight legs until the toes touch the floor behind the head (Fig. 11, a).

While holding the knees should be straight, breathing rhythmic, free. With your mind's eye, slowly walk from the cervical vertebrae to the lower and back. Focus on the solar plexus as well. You should start holding the position no more than 10-15 seconds. Having mastered the first method of khalasana, you can proceed to a more complex version. The difference between the two methods is only in the position of the hands (Fig. 11, b).



**A B**

Figure: 11. Pose plow (*khalasana*).

If the exercise does not work out, then you can first perform not completely khalasana, but boomerang (viparita-karani), when the legs are in the up-and-back position, that is, between the shoulder stand and the plow. Halasana helps to eliminate curvature of the spine, improves the functions of the liver, spleen, kidneys, adrenal glands, and pancreas. The special value of this posture is determined by its influence on the sexual sphere. It stimulates the sex glands, has a therapeutic effect in impotence, frigidity and insufficient sexual activity.

**3. Head pose (sirshasana).** Kneeling down, lower your head to the floor. Leaning on a place above the forehead, 4 fingers apart from the crown of the head, grasp the back of the head with intertwined palms and place the elbows a little so that they form an angle of about  $90^\circ$  (Fig. 12, a). Leaning on three points, raise the body to an upright position (Fig. 12, b), then slowly straighten out at the hip joints and go into a headstand (Fig. 12, c).

In the sirshasana position, the trunk and legs should be as extended as possible and be in an upright position. Breathing is arbitrary, through the nose. Calmly and benevolently walk mentally all over the body from head to toe and back (feeling as if a pleasant wave is rolling). You must first stay in this position for 10-15 s. After the exercise, rest for a few seconds, sitting on your heels and tilting your torso forward, your forehead touching the floor, your arms extended forward on the floor. Relax and breathe freely. Sirshasana is considered the queen of asanas for its beneficial effects on the body. The asana improves the functioning of the brain, supplying it abundantly with blood, calms and strengthens the nervous system. It is used in the treatment of chronic diseases of the nose, throat, ears, in the treatment of neurasthenia, varicose veins. Asana also gives rest to the heart, trains and tones the work of the vascular system, gives rest to the muscles that hold the internal organs, rejuvenates the whole body, removes wrinkles on the face, promotes the appearance of sexual energy, purifies the blood. Usually performed in the morning for health, in the evening for relaxation, to gain a sense of comfort.

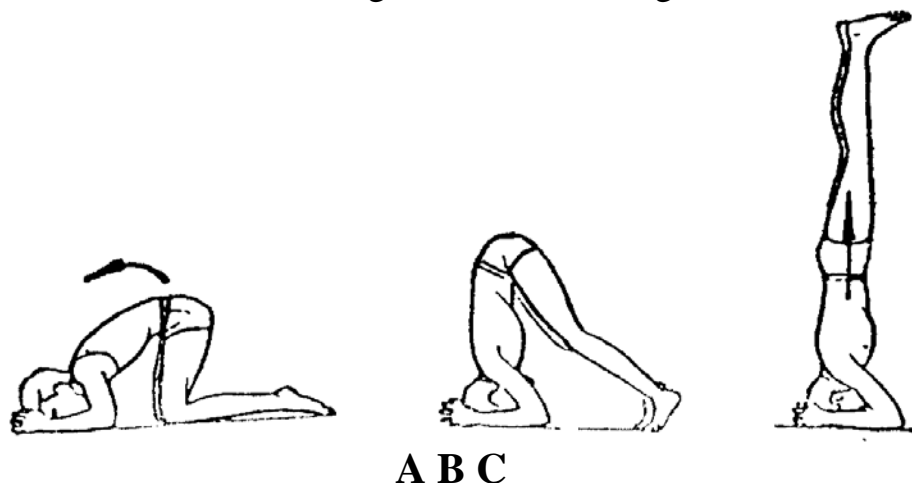


Figure: 12. Head pose (sirshasana).



The asanas given here are selected in order of increasing difficulty.

***It is worth noting that even those students who are not in the main group can perform hatha yoga asanas.***

*Already after three sessions of the Hatha Yoga system, health improves, flexibility increases and fatigue decreases. Hatha Yoga includes aerobic and anaerobic exercise. Aerobic or breathing exercises allow you to saturate the body with oxygen, while anaerobic or physical exercises are aimed at strengthening and flexibility of muscles. Breathing exercises can also help you quit smoking, shortness of breath and respiratory problems. Asanas provide a preventive, therapeutic and psychotherapeutic effect. They affect the digestive, cardiovascular, respiratory, endocrine systems, the excretory system, the nervous system and the entire motor apparatus.*

## **8.**

## **Conclusion**

In modern society, the importance of physical culture is growing, in particular, health technologies aimed at strengthening health, increasing mental performance, improving human well-being. Recently, various directions of non-traditional health-improving systems have been quite widespread. Known and well-proven in long-term practice types and forms of physical exercises traditionally remain in the arsenal of tested means of domestic physical culture. However, a number of reasons lead to the emergence of new non-traditional types of physical activity, including such as breathing exercises, types of fitness, mental self-regulation, etc.

Many unconventional health-improving methods, for example, the eastern systems of physical exercises, that have come down to us from centuries of antiquity, are unique, as they carry the experience of generations. All Eastern systems are inconceivable without striving to understand the connection between the "external" and the "internal", the understanding that exercises are a visible reflection of the processes occurring in the body.

A feature of non-traditional health-improving methods and technologies is the lack of "clear contours", their close interaction with each other. In addition, non-traditional health-improving methods and technologies differ significantly in their concepts, consideration of certain problems of improving the body, defining key concepts and using different terminology.

## **CONTROL AND TRAINING TESTS**

### **1. Pranayama is:**

- a) a system of relaxation exercises;
- b) the system of breathing exercises;
- c) a system of static exercises

### **2. Which of the two elements of Prana activates respiratory muscles:**

- a) external;
- b) internal

### **3. Body postures in Hatha Yoga are called:**

- a) prana;
- b) asanas;
- c) aposuns

### **4. Breathing exercises are conducted by yogis (specify 2 correct answers):**

- a) to a decrease in the respiratory rate;
- b) to an increase in hemoglobin in the blood;
- c) to an increase in the content of carbon dioxide hafor in the body;
- d) to a decrease in the content of carbon dioxide in the blood

### **5. Contraindications to Hatha Yoga classes are (specify 3 correct answers):**

- a) hypertension;
- b) conditions accompanied by the risk of bleeding;
- c) obesity;
- d) organic lesions of internal organs;
- e) functional and organic lesions of the nervesystem with significant violation of its functions

### **6. Indicate three types of wave-like breathing in Pranayama:**

- a) abdominal;
- b) chest;
- c) ribbed;
- d) clavicular

### **7. With lower breathing it is necessary:**

- a) draw in the stomach to the spine as you exhale and pushwhip forward while inhaling for by relaxing the abdominal muscles;
- b) take a breath for 2 counts, hold your breath, then for 4 counts – do exhalation.