

**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**

**Paradoxical gymnastics of  
A. N. Strelnikova**

Methodological recommendations  
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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An analysis of the scientific literature shows that the most frequently recommended health remedies include aerobic cyclic exercises and moderate-intensity acyclic exercises, including breathing exercises. Among the most well-known methods of hypoxic nature is the paradoxical gymnastics of A. N. Strelnikova, which is a breathing exercise that is performed with an active short, sharp breath with a compressed chest, without holding your breath, in combination with physical exercises of a dynamic nature. According to the results of research, systematic exercises in respiratory gymnastics according to Strelnikova contribute to both the general improvement of the body, and has a pronounced therapeutic effect in various diseases.

Exercises of respiratory gymnastics of Strelnikova are used in the main part of the training session on physical culture, because their impact on the body of students prepared for physical exertion increases the health effect.

It is advisable to conduct training sessions using gymnastics with students of a special medical group studying in the specialty "Medical care", "Dentistry", "Pediatrics", "Medical and preventive care", "Pharmacy".

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**THE PURPOSE OF THE LESSON:** to introduce and teach students the methodology the paradoxical gymnastics on A. N. Strelnikova.

**THE STUDENT SHOULD KNOW:**

- the purpose and objectives of the paradoxical breathing gymnastics of A. N. Strelnikova;
- basic rules of breathing according to the method of A. N. Strelnikova;
- effects when using breathing exercises according to A. N. Strelnikova;
- indications and contraindications for classes according to the method of A. N. Strelnikova.

**THE STUDENT MUST BE ABLE TO:**

- perform a set of exercises of respiratory gymnastics according to the method of A. N. Strelnikova.

**ISSUES TO BE ADDRESSED:**

- paradoxical breathing exercises by A. N. Strelnikova;
- the purpose and objectives of A. N. Strelnikovas breathing exercises;
- physiological mechanism of influence of A. N. Strelnikova's respiratory gymnastics on the human body;
- indications and contraindications for the use of breathing exercises;
- basic exercises and methods of performing breathing exercises.

**RECOMMENDED LITERATURE:**

1. Shchetinin M. N. Respiratory gymnastics of A. N. Strelnikova.- Ed.: Metaphor, 2010.
2. Shchetinin M. N. Breath according to Strelnikova wins diseases. Diseases of the heart and blood vessels. – Ed.: Book Club 36,6, 2009.
3. Strelnikova N. N. Breathing exercises of A. N. Strelnikova in the School health N. Semenova Nadezhda. – Ed.: Dilya, 2007.
4. Bach B. System of therapeutic breathing according to A. N. Strelnikova.– Ed.:AST– Stalker, 2007.
5. Kozmin V. the Healing power of breathing exercises. – M.: AST "Astrel–Hranitel", 2007.
6. Astashenko O. I. Breathing exercises by A. N. Strelnikova. – S.– P.: Vector, 2006.
7. Digitalmarketing Orlova L. A. N. Strelnikova. – M.: AST, 2006.

## **1. Paradoxical breathing exercises by A. N. Strelnikova**

A. N. Strelnikova was not engaged in treatment in the narrow sense of the word. Breathing exercises, which will be discussed, were developed by Alexandra Nikolaevna Strelnikova and her mother, A. S. Strelnikova. They found that gymnastics helped relieve a choking fit. Over time, experience has shown that this technique gives good results in bronchial asthma, chronic pneumonia, chronic bronchitis, chronic runny nose and sinusitis, flu, hypertension and hypotension, heart failure, arrhythmia, stuttering, osteochondrosis. According to the testimony of people who have been engaged in this gymnastics, it also helps with vegetative-vascular dystonia, angina pectoris, gastric ulcer and duodenal ulcer, varicose veins and some female diseases.

The gym is called paradoxical because the breaths are performed simultaneously with the movements that hinder this phase of breath: compression of the chest (the reduction of arms in front of chest, tilted forward, etc.) is the breath, and the expansion of the chest (breeding hand in hand, straightening after bending forward, etc.) – exhale.

The meaning of the exercises developed by Strelnikova is precisely to prevent you from taking a big breath of air. It is for this purpose that movements are performed on the inhale, compressing the chest, making it difficult to inhale.

## **2. The purpose and tasks of respiratory gymnastics of A. N. Strelnikova**

The fundamental purpose of performing breathing exercises is to provide a directed effect on the respiratory apparatus, increase its functional reserves, as well as changes in various organs and functional systems.

To achieve this goal, the following tasks are used:

- ✓ create optimal conditions for oxygen supply to the tissues the body;
- ✓ to develop the respiratory muscles;
- ✓ to strengthen the vocal cords.

## **3. Physiological mechanism of influence of A. N. Strelnikovas respiratory gymnastics on the human body**

The essence of the technique of respiratory gymnastics by A. N. Strelnikova and the mechanisms of its action on the functions of the body, in the light of modern physiological concepts, is as follows:

- ✓ forced, short, like a prick, breaths through the nose, directing air to the entire depth of the lungs, from the tops to the base, and a complete lack of control over exhalations through the mouth;

- ✓ rhythmic inhalation of air with simultaneous physical exercises for the body at a rate almost equal to the pulse rate;
- ✓ compression of the chest with exercises to reduce the volume of the lungs;
- ✓ increased motor activity, body mobility;
- ✓ activation of the muscular apparatus of the diaphragm and chest, their training and restoration of disturbed functions;
- ✓ providing ventilation of the lungs with a diaphragm with simultaneous massaging action of the muscles of the abdominal organs and their valve apparatuses;
- ✓ elimination of venous fullness of the thoracic and abdominal cavities, correction and normalization of blood and lymph circulation in the cells and tissues of the body, restoration and stimulation of disturbed metabolic processes;
- ✓ training and stimulation of sphincter devices-individual muscles and their groups that serve to narrow or close passages or openings in various organs and systems: respiratory, digestive, urinary, genital, visual organs, as well as in blood and lymphatic vessels;
- ✓ restoration of functional parameters of various parts of the digestive tract: acid-base balance, a set of enzymes, intracavitary pressure, microbial spectrum, etc.;
- ✓ normalization of the processes of excitation-inhibition of the cerebral cortex and subcortical structures, their bioelectric activity. Counting on the eights of frequent short energetic breaths while performing exercises excites the brain with a flow of air, prevents the spasm of its cells by improving blood circulation and providing oxygen. As a result, the psychoemotional state of the sick person and his potential volitional capabilities are restored;
- ✓ natural correction of various pathological disorders in the activity of various organs and systems (up to sexual) and restoration of normal functioning of the body as a whole.

Fundamental in achieving results is the systematic, systematic conduct of breathing exercises with individual selection of the training regime. Physiologically correcting effect of the method of respiratory gymnastics A. N. Strelnikova affects the respiratory, cardiovascular, endocrine, central nervous system and the gastrointestinal tract.

#### **4. Indications and contraindications for the use of breathing exercises**

The general condition of the patient and the effect of the classes are determined by:

- ✓ selection of exercises and their sequence;
- ✓ choice of position during gymnastics;
- ✓ the number of breaths-movements, their frequency and rest time between them;
- ✓ breakdown of the total number of breaths-exercises for several sessions;
- ✓ dynamics of load increase and much more.

##### ***Breathing exercises are indicated for:***

- ✓ bronchial asthma;
- ✓ chronic bronchitis;
- ✓ chronic sinusitis;
- ✓ heart failure;
- ✓ osteochondrosis;
- ✓ diseases of the vocal apparatus;
- ✓ pulmonary edema;
- ✓ hypertension;
- ✓ hypotension;
- ✓ chronic pneumonia;
- ✓ chronic rhinitis;
- ✓ the stuttering.

Also, breathing exercises have a positive effect on the work of the liver, digestive system, relieves headaches, chronic fatigue.

##### ***Absolute contraindications are:***

- ✓ myocardial infarction;
- ✓ stroke;
- ✓ tuberculosis in open form.

##### ***Relative contraindications are:***

- ✓ brain injuries;
- ✓ spinal injuries;
- ✓ severe osteochondrosis with long-term severe radiculitis, especially of the cervical-thoracic spine;
- ✓ very high arterial, intracranial or intraocular pressure.

In no case should you initially start an independent – without the control of a specialist doctor—carrying out breathing exercises according to " manuals " from newspapers and some brochures. This is fraught with serious complications and leads to discrediting the method itself. From the first lesson of mastering breathing exercises under the guidance of a knowledgeable doctor, the patient will be able to feel its beneficial effect and believe in the possibility of recovery.

## 6. Basic exercises and methods of performing breathing exercises

Before you start training, you need to know the four rules of performing breathing exercises.

**Rule 1.** Inhale short, like a prick, active (strong inhale, weak exhale). Make sure that the breath goes in at the same time as the movement.

**Rule 2.** Do not interfere with the air to leave after each breath as you like, better with your mouth than your nose. Think: "It smells like burning!"

**Rule 3.** Tempo-rhythm for 8-16-32 counts or pace of step, pulse – from 72 to 82 breaths per minute.

**Rule 4.** In a row, take as many breaths– movements as you can easily do at the moment: 8-16-32 (standing).



### 1. "Palms"

I. P. stand up straight, bend your arms at the elbows and "show your palms to the viewer". Take noisy, short breaths through your nose and simultaneously clench your palms into fists.

**Remember!** Inhale through the nose-active, exhale through the mouth-absolutely passive, inaudible.

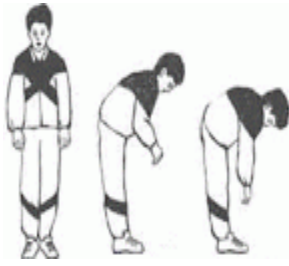
Exercise "Palms" can be done standing, sitting and lying down.



### 2. "Pogonchiki"

I. P. stand up straight, clench your hands into fists and press them to your stomach, at waist level. At the moment of inspiration, sharply push your fists down to the floor. Then the hands return to the I. P. Do not raise the hands above the waist.

Exercise "Shoulder straps" can be done standing, sitting and lying down.



### 3. "Pump" ("Inflating the tire")

I. P. stand up straight, legs slightly narrower than shoulder width, arms along the torso. Make a light bow (with your hands reaching for the floor, but not touching it) and at the same time – a noisy and short breath with your nose (in the second half of the bow). The breath should end with the bow. Slightly rise, but not straighten, and again bow and a short, noisy breath "from the floor". Bows are made rhythmically and easily, do not bow low, a bow to the waist is enough. The back is round, not straight, and the head is lowered.

Remember! "Pump up the tire" should be in the tempo rhythm of the drill step. Exercise "Pump" can be done standing and sitting.

**Restrictions:** with head and spine injuries; with long-term sciatica and osteochondrosis; with high arterial, intracranial and intraocular pressure; with stones in the liver, kidneys and bladder – do not bow low. The bow is made barely noticeable, but always with a noisy and short breath through the nose. Exhale after each breath (passively) through the mouth, but do not open it wide.

Exercise "Pump" is very effective, often stops attacks of bronchial asthma, heart and liver attack.

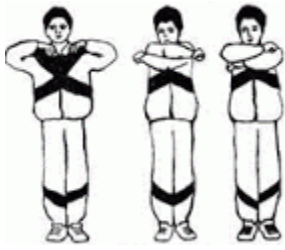


### 4. "Cat"

I. P. stand up straight, legs slightly narrower than shoulder width (feet should not come off the floor). Do a dance squat and simultaneously turn your torso to the right – a sharp, short breath. Then the same squat with a turn to the left and also a short, noisy breath. Exhalations occur between breaths themselves, involuntarily. Knees slightly bend and straighten (squat light, springy, do not squat deeply). With your hands, make grasping movements to the right and left at waist level. The back is absolutely straight, the turn is only at the waist.

Exercise " Cat " can be done sitting and lying down (in a serious condition).





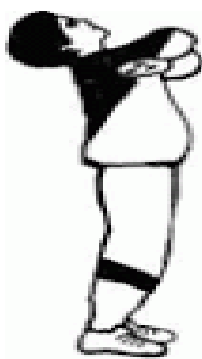
## 5. "Hug your shoulders" (inhale on chest compression)

I. P. stand up straight, arms bent at the elbows and raised to shoulder level. Throw your arms towards each other to the point of failure, as if hugging yourself by the shoulders. And at the same time with every "hug" dramatically "spygate" nose. The hands at the moment of "hugging" go parallel to each other, and not crosswise, in no case do not change them (it does not matter which hand is on top-right or left). Do not spread wide and do not strain. Having mastered this exercise, you can at the moment of oncoming movement of the hands slightly tilt your head back – "inhale from the ceiling".

Exercise "Hug your shoulders" can be done standing, sitting and lying down.

**Restrictions:** for people with coronary heart disease (CHD), congenital malformations, or a heart attack, do not do the "Shoulder Hug" exercise during the first week of training. You need to start it from the second week, along with other exercises of Strelnikova gymnastics. In a serious condition, it is necessary to do not 8 breaths-movements, but 4 or even 2, then rest for 3-5 seconds and again 2 or 4 breaths-movements.

Women, starting from the sixth month of pregnancy in the exercise "Hug your shoulders" do not throw your head back, perform the exercise only with your hands, standing straight and looking straight ahead.

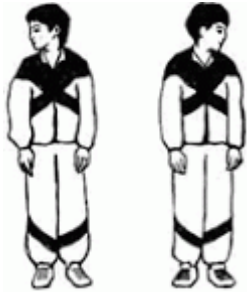


## 6. "Big pendulum" ("Pump" + "Hug your shoulders").

I. P. Stand up straight, legs slightly narrower than shoulder width. Lean forward, hands reaching for the floor-inhale. And immediately without stopping, slightly bent in the lower back tilt back-arms hug the shoulders – and also inhale. Bow forward-lean back, inhale "from the floor" - inhale "from the ceiling". Exhalation occurs in the interval between breaths itself, do not delay or push out the exhalation.

Exercise "Big pendulum" can also be done sitting.

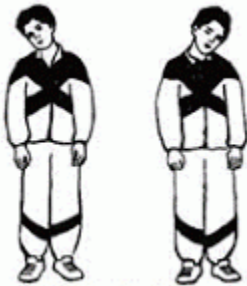
**Restrictions:** with osteochondrosis, spinal injuries and dislocations of the intervertebral discs, do the exercise "Big pendulum", limiting the movement: slightly bowing forward and almost not bending when bending back. Only after you have mastered the first six exercises well, you can move on to the rest.



### 7. "Head turns"

I. P. stand up straight, legs slightly narrower than shoulder width. Turn your head to the right – take a loud, short breath on the right side. Then turn your head to the left – "sniff" with your nose on the left side. In the middle, do not stop the head, do not strain the neck, do not pull the breath.

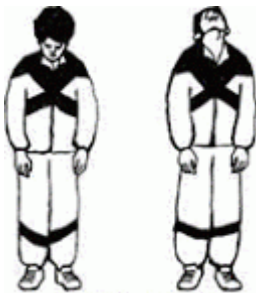
**Remember!** Exhalation should be performed after each inhalation independently, through the mouth.



### 8. "Ears"

I. P. stand up straight, legs slightly narrower than shoulder width. Tilt your head slightly to the right, the right ear goes to the right shoulder-a noisy, short breath. Then slightly tilt your head to the left, the left ear goes to the left shoulder - also inhale. It is necessary to look straight ahead.

**Remember!** The breaths are taken simultaneously with the movements. Exhalation should occur after each inhalation (do not open your mouth wide).



### 9. "Pendulum head"

I. P. stand up straight, legs slightly narrower than shoulder width. Lower your head down (look at the floor) - a sharp, short breath. Raise your head up (look at the ceiling) - also inhale. The exhalation should have time to "go away" after each inhalation. Do not hold and do not push out the exhalation (it should go through the mouth, not visible and not audible, in extreme cases – also through the nose).

**Restrictions:** with head injuries, vegetative-vascular dystonia, epilepsy; with increased arterial, intracranial and intraocular pressure; osteochondrosis of the cervical-thoracic spine – do not make sudden head movements in exercises – "Head turns", "Ears", "Pendulum head". Turn your head slightly, but be sure to "sniff" your nose noisily. Do these exercises while sitting, and "Head turns" and "Ears" can even be lying down.



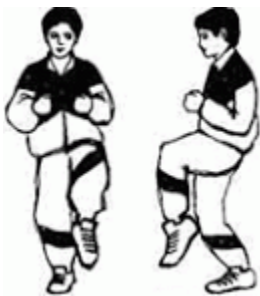
## 10. "Rifts"

**A. I. P.** left leg in front, right behind. The entire weight of the body is on the left leg, the leg is straight, the body too. The right leg is bent at the knee and set back on the toe, so as not to lose balance (but not to lean on it). Perform a light dance squat on the left leg (the leg at the knee is slightly bent), while taking a short breath through the nose (after the squat, the left leg instantly straightens). Then immediately transfer the weight of the body on backwards right foot (body straight), and also sit down on it, while sharply "snuffing" nose (left foot on the toe, for balance, bent at the knee, but it is not lean). Again, transfer the weight of the body to the left leg in front of you.

### *Remember:*

- 1) squat and inhale are done strictly at the same time;
- 2) the entire weight of the body is only on the leg on which we squat slightly;
- 3) after each squat, the leg is instantly straightened, and only after this is the transfer of body weight (rolling) to the other leg.

**B. I. P.** right leg in front, left behind. Repeat with the other leg. Exercise "Rolling" can only be done standing up.

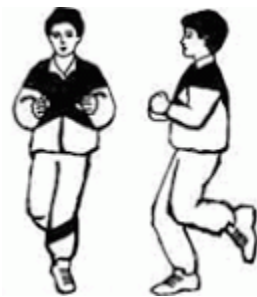


## 11. «Steps»

**A. "Front step" I. P.** Stand up straight, legs slightly narrower than shoulder width. Raise the left leg, bent at the knee, up to the level of the abdomen (from the knee the leg is straight, pull the sock down, as in ballet). On the right leg at this point, do a light dance squat and a short, noisy breath. After squatting, both legs must necessarily take an I. P. for a moment. Then raise your right leg, bent at the knee, and on the left slightly sit down, and noisily "sniff" your nose. It is necessary to sit down slightly, then the other leg will easily rise up to the level of the abdomen. The body is straight. You can simultaneously with each squat and raising the bent knee, make a slight counter movement of the hands at waist level. Exercise "Front step" can be done standing, sitting and even lying down.

**Restrictions:** in diseases of the cardiovascular system (CHD, congenital malformations, heart attack), it is not recommended to raise your legs high (to the level of the abdomen). With leg injuries and thrombophlebitis, this exercise is performed only sitting and even lying (on your back), very carefully, slightly lifting the knee up with a noisy breath. Pause-3-4 seconds after every 8 breaths-movements, you can extend up to 10 seconds. If you have thrombophlebitis, be sure to consult a surgeon!

When urolithiasis and pregnancy (starting from the 6th month) in the exercise "Front step" do not raise your knees high!



**B. "Back step"** I. P. the same. Bring your left leg, bent at the knee, back, as if slapping your buttocks with the heel. On the right leg at this point, sit down slightly and noisily "sniff" your nose. Then return both legs to the I. P. for a moment – the exhalation is done. After that, pull back the right leg bent at the knee, and on the left do a light dance squat. This exercise is done only standing up.

**Remember!** Breaths and movements are done strictly at the same time.

***So, the main complex includes the following exercises:***

1. "Palms" – 12 times for 8 breaths-movements (or  $3 \times 32 = 96$  – "hundred").
2. "Epaulettes" – 12 times for 8 breaths movements (or  $3 \times 32 = 96$ ).
3. "Pump" – 12 times for 8 breaths movements (96).
4. "Cat" – 12 times for 8 breaths movements (96).
5. "Embrace your shoulders" – 12 times for 8 breaths movements (96).
6. "Big pendulum" – 12 times for 8 breaths movements (96).
7. "Head turns" – 12 times for 8 breaths movements (96).
8. "Ears" – 12 times for 8 breaths movements (96).
9. "Pendulum head" – 12 times for 8 breaths movements (96).
10. "The shallows":
  - a) 12 times for 8 breaths movements (or  $3 \times 32$ ) – left foot;
  - b) 12 times for 8 breaths-movements (or  $3 \times 32$ ) - from the right leg.

11. "Steps":

- a) "Forward step" – 32 breaths-movements;
- b) "Back step" – 32 breaths-movements;
- c) again "Forward step" – 32 breaths-movements.

***Total-96 ("hundred").***

***In just one lesson, you need to do 1200 (12" hundred") breaths–movements.***

## **TESTS:**

**1) The basis of A. Strelnikovas breathing exercises is:**

- a) three-stroke shallow breathing with a maximum pause of breathing on the exhalation;
- b) deep diaphragmatic breathing;
- c) breathing, in which the breaths are very short and limited, and the exhalations spontaneous.

**2) Breathing exercises according to A. Strelnikova should be performed as follows:**

- a) strong short inhale and weak exhale;
- b) a strong deep breath and a weak exhalation;
- c) shallow inhalation and maximum exhalation;

**3) A. Strelnikovas gymnastics promotes (specify 2 correct answers):**

- a) increase of physical working capacity;
- b) accelerated development of muscles that help breathing;
- c) improving mental performance;
- d) strengthening of the vocal cords;
- e) getting rid of claustrophobia.

**4) Breathing exercises are indicated for:**

- a) stroke;
- b) bronchial asthma;
- c) myocardial infarction.

**5) Breathing exercises are contraindicated when:**

- a) tuberculosis in open form;
- b) diseases of the vocal apparatus;
- c) chronic pneumonia.

**6) Relative contraindications to respiratory gymnastics:**

- a) chronic bronchitis;
- b) brain injuries;
- c) myocardial infarction.

**7) The main goal of Strelnikovas gymnastics is:**

- a) impact on the musculoskeletal system;
- b) effects on the respiratory system;
- c) effects on the cardiovascular system