

**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**

The recreational motor system of A.A. Mikulin

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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These guidelines present the main provisions of the health improvement system of academician A.A. Mikulin. How to maintain health and prolong creativity? This question worries many. Mikulin A.A. an attempt was made to reveal the physiological laws of the aging of the organism and to find ways to prolong an active creative life.

Methodical recommendations are 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 Business", "Pharmacy". Compiled in accordance with the curriculum. The materials presented in the recommendations meet the requirements of the educational standard for medical students.

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PURPOSE OF THE LESSON: learn the wellness motor system according to the method of A. A. Mikulin.

A STUDENT SHOULD KNOW:

- methodology for performing vibro–gymnastics;
- recommendations – how to walk and run correctly;
- the technique of performing a complex of gymnastic exercises A.A. Mikulin;
- the method of performing volitional gymnastics according to A.A. Mikulin.

A STUDENT SHOULD BE ABLE TO:

- to assess the effectiveness of the health–improving motor system.

QUESTIONS TO BE SURRENDED:

- academician A.A. Mikulin and his "active longevity";
- physiological substantiation of the health–improving system A.A. Mikulin;
- vibration gymnastics;
- walking and running;
- volitional gymnastics according to the method of A.A. Mikulin;
- respiratory gymnastics according to the method of A.A. Mikulin.

RECOMMENDED LITERATURE:

1. Mikulin A.A. "Active longevity". – Dnepropetrovsk: "ART–Press", 2006.
2. E. Ivanova "Towards active longevity by the method of A. A. Mikulin." – SPb .: Vector, 2005.

1. Academician A.A. Mikulin and his "active longevity"

When do we become healthy lifestyle enthusiasts? Unfortunately, on the verge of serious ailments, on a wave of emotions from what he saw, when something happens to someone. This is the main path along which the majority comes to the realization of the necessity and importance of health and care for it. Taking care of yourself. Daily and thoughtful. The main malignant disease of humanity is laziness. We are just too lazy to think about ourselves. Thoughtfully and thoroughly figure out what our body needs. And like infantile gardeners we water ourselves with salt solutions, acid rain, breathe the caustic fumes of cities and are not even surprised, but how are we still here, and even sometimes even healthy ...

Let us turn to the experience, in this case of Academician Mikulin, who managed to overcome both his laziness and his illness.

“Until the age of fifty, I, like most people, did not attach much importance to physical culture,” writes A.A. Mikulin. – However, when I got seriously ill and ended up in the hospital, I had the desire and time to understand the complex structure of the human body. Having studied many books on this topic, I developed my own system, directed and supplemented by criticism and experimental verification of my friends. This system allowed me to overcome my illness, stop aging and keep working for many years, including the present ”.

As is customary among the designers, he gave himself a "technical task", formulating it from the very beginning very briefly and clearly:

- understand yourself and help everyone understand the work of the body;
- help yourself and help everyone;
- longevity must be active.

Examples of centenarians clearly prove that the body's resources are much larger than we think. We simply do not take care of ourselves, the body is working to wear and tear and breaks down ahead of time.

The analytical mind of the scientist identified the main links in the search chain – the influence of biological currents on a person's life, the study of blood circulation, respiration, sweating, the work of the muscular apparatus during movements, physical exercises. A hypothesis was gradually formed about one of the main causes of aging – the sedimentation of metabolic products – "slags" in the intercellular spaces.

This means that here, at this level, a person's help to his own body should begin. And this help is in constant movement, proper breathing, rational nutrition. The fairness of his thoughts, conclusions, recommendations of A.A. Mikulin

confirms his personal practice, his own health and active longevity, as well as work at 82 years old.

2. Physiological substantiation of wellness systems A.A. Mikulina

The global idea is to cleanse the body of all kinds of toxins.

Thousands of people have found an untimely death from the "slagging" of the body and disruption of nervous activity just because they were too lazy to repeat the cycle of physical exercises every morning. To gain health, happy working longevity, it is not enough to buy many books about the benefits of physical education, it is not enough to hang posters on the wall describing morning physical exercises, the main thing is to find willpower in yourself or gradually educate it in order to defeat laziness. Only in this case will success be guaranteed.

For each person, the decisive condition for the usefulness of using the recommendations is the mandatory observance of extreme gradualness and caution when mastering new exercises, to which the body was not previously accustomed. A living cell cannot change its structure and activity in 2 days. This takes time. Day after day in each exercise, you should gradually add 1–2 movements, while running every day, add 5–10 steps, etc. to a certain limit, individual for each person.

A sudden overstrain of forces is extremely dangerous for the body, while gradualism leads to the strengthening of the whole body, makes a person healthier, more resilient, and leads to longevity.

When studying many diseases, it turned out that some people inhale too much oxygen and they have an insufficient percentage of CO₂ in their body, others do not breathe intensively enough and because of the "dull" alveoli, they have oxygen starvation diseases, such as bronchial asthma, hypertension.

Healthy breathing while running:

There are three types of running breathing.

1. Inhale and exhale through the nose with tightly compressed lips.
2. Inhale through the nose, exhale through the mouth.
3. Inhale through the mouth and exhale through the mouth.

Theoretical considerations for each species are summarized as follows.

On the first: nose breathing has the advantage that the air is warmed and humidified, passing through the mucous membrane, which protects the upper respiratory tract from cooling and drying out. But the resistance to air movement through the nose is greater than through the mouth.

On the second: the same advantages of inhalation through the nose as in the first. But exhalation through the mouth provides a quick clearance of gases from the lungs.

On the third: quick free inhalation and exhalation.

Mikulin stopped at the second breath, as the most reasonable and healthy for the body: inhale through the nose, exhale through the mouth.

When starting the running procedure, you need to start breathing like this: one breath in two steps and one exhale for two steps. After the appearance of the "second breath" – four steps for inhalation and four for exhalation.

During normal running, the entire lung volume is not used. Therefore, carbon dioxide gradually accumulates at the bottom of the lungs due to the increased specific gravity. In order to get rid of it while running, you want to take an intensely deep breath.

Mikulin ran and breathed in this way in the morning, trying not to miss a single day. If the weather is very bad, I jogged along the corridor at home: 5 steps there, five back. I carefully watched myself during lectures and reports. I tried to inhale the air as often as possible and let it out more calmly, trying in no case to hold my breath or speak after exhalation.

Oxygen is the basis of life on earth! Everyone knows this truth, but few people think about it every day, hourly and every minute and protect their body from oxygen starvation.

Alexander Mikulin tried various naturopathic methods – fasting, body cleansing procedures, gymnastics complexes, and much, much more. I checked everything on myself – and gave preference to running and breathing exercises.

"The overwhelming majority of people", he wrote, "only do not run and do not do gymnastics necessary for health, that no one explained to them in time why our body needs certain movements, no one has proved that peace leads to laziness, lethargy and weakness that immobility accelerates the onset of old age".

The starting point in Mikulins reflections on the methods of healing and prolonging life was the following consideration: "For millions of years in the process of evolution, nature has designed and at a rate extremely far from the pace of scientific and technological progress, has improved our internal organs: heart, kidneys, stomach, intestines, muscles, medulla. All these organs were formed under conditions of high physical activity – running, muscle contractions, continuous (except for rest and sleep) tremors of the body for many hours".

3. Vibration gymnastics

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To fill the missing body "shake", Mikulin suggested doing a simple exercise that can be performed even by physically weakened people. He called it vibro-gymnastics.

If you rise on your toes so that the heels come off the floor by only 1 cm, and drop sharply to the floor, then you experience a shock, a concussion. In this case, the same will happen as when running and walking: thanks to the valves, the blood in the veins will receive an additional impulse to move upward. Such shaking of the body should be done slowly, not more often than once a second. After thirty concussions, you need to take a break of 5–10 seconds. With each exercise, you need to do no more than 60 concussions, perform them hard, but there is no danger to the spine and its discs. During the day, you need to repeat the exercises 3–5 times in a minute.

In no case do not raise your heels above a centimeter above the floor – the exercise will not become more effective from this, and it can bring harm. Too frequent concussions are also useless, since a sufficient portion of blood does not have time to accumulate in the intervalvular spaces of the veins. Later, similar recommendations began to be found in the special medical literature. True, the rationale was different: since during such exercises the muscles of the lower leg are strained, the blood is squeezed out by them higher through the veins.

He found this exercise especially useful for people engaged in sedentary or standing work. According to his observations, after a minute of vibro-gymnastics, the head clears up, fatigue disappears.

Like any other method of additional physical activity or therapeutic gymnastics (as, recall, and vibration massage), it can be useful. Or harmful ... It all

depends on the state of human health. Therefore, in no case can we recommend it to everyone without exception.

Vibro–gymnastics is contraindicated for people suffering from cardiovascular diseases, primarily angina pectoris and thrombophlebitis, patients with kidney stones and gall bladder, osteochondrosis and heel spurs. With angina pectoris, renal and cholelithiasis, reflex exacerbations of diseases are possible; in patients with thrombophlebitis, vibration can lead to the detachment of a blood clot and severe complications; holders of a heel spur should spare the bones of the foot by placing instep supports, and not just banging it on the floor. At the same time, for all these diseases, therapeutic exercises are useful, but only its other forms, and each disease has its own complex.

4. Walking and running

Academician Mikulin had his own approach to walking and running. In his opinion, walking slowly and smoothly is a waste of time if you consider walking as a physical exercise. It is much more effective to step briskly, quickly, firmly, placing your foot on the ground with your entire foot with an emphasis on the heel.

As for running, Mikulins recommendation is as follows: daily run 2–3 kilometers for 15–20 minutes, trying to firmly put your foot on the heel. But to accustom the body to such a run should be gradually and carefully. On the first day, take 10 quick steps, then, bending your elbows, run 5–10 steps. Breathe evenly. Two steps – inhale through the nose, two steps – exhale through the mouth. When the so-called "second wind" appears, inhale and exhale longer – four steps. As the body adapts to running, the walking distance should be reduced. So gradually you can learn to run 2–3 kilometers a day.

Mikulin also considered very useful sports games, during which there are many concussions of the body – jumps, jumps, runs. He himself remained an excellent tennis player until old age, did vibro–gymnastics, ran, and did exercises with dumbbells.

A.A. Mikulin advised to start your day from a set of gymnastic exercises:

1. I.P. – OS, dumbbells in lowered hands. Raise straight arms up while lifting on toes – inhale. Lowering your hands down, return to the starting position – exhale. Perform 10–15 times.
2. I.P. – OS, dumbbells in lowered hands, palms facing forward. Alternating flexion and extension of the arms in the elbow joints. While bending the arms, the dumbbells touch the shoulders, and the elbows remain motionless. Breathing is arbitrary. Perform 15–20 times.

3. I.P. – arms with dumbbells in front. Spread straight arms to the sides to the point of failure so that the shoulder blades are connected – inhale, bring your hands in front of you – exhale. Perform 10–15 times.
4. I.P. – standing, torso tilted forward to horizontal position, hands with dumbbells down, palms inward. Raise straight arms to the sides – inhale, lower your hands into I.P. – exhale. Perform 10–12 times.
5. I.P. – sitting on a chair, the feet are fixed to a fixed support, hands with dumbbells behind the head. Lean back slowly turning the body to the left – inhale, return to I.P. – exhale. The same in the other direction. Perform 6–8 times.
6. I.P. – lying on your back on the floor, hands with dumbbells along the body, palms down. Raise straight arms forward and lower back until they touch the floor – inhale. With a reverse movement of the hands, return to I.P. – exhale. Perform 10–15 times.
7. I.P. – legs are wider than shoulders, arms with dumbbells at the top. Inhale, tilt the body forward with a simultaneous swing of the arms down and back between the legs – exhale. Straightening your torso, raise your arms up – inhale. Perform 8–12 times.
8. I.P. – feet shoulder-width apart, arms with dumbbells at the top. Rotation of the pelvis in one direction and the other. Do not hold your breath.

5. Volitional gymnastics according to the method of A.A. Mikulina

1. First you need to relax all the muscles, and then gradually with extremely strong volitional impulses ten times to strain them without moving.
2. First you need to strain the muscles of the toes, then the calf muscles, then consistently strain the muscles of the abdomen, chest, neck, arms. With these exercises, the muscles should expand and "play" like strong men in a circus.

Such volitional gymnastics has a complex effect on the body: on the one hand, it stimulates bioelectric phenomena in cells, which enhances the metabolism, and on the other hand, it helps the muscles and veins to get rid of toxins. During volitional gymnastics, special attention should be paid to uniform and deep breathing. For every five muscle contractions, you need to take one inhale and exhale for five.

6. Respiratory gymnastics according to the method of A.A. Mikulina

Breathing plays a very important role in volitional gymnastics. Lying on your back, first you need to take a deep breath, then with the effort of the diaphragm, inflate the stomach. Hold your breath for 3–5 seconds so that, under pressure, the slags have time to leave the places where they settled during the night. After a delay, exhale the air in ten small portions, pushing it with force through tightly compressed lips so that the whole stomach vibrates ten times intensively. This massage (shaking) of the internal motionless organs is where all the benefits of breathing exercises are covered. By the way, the same massage takes place at the moment when we laugh. Hence it becomes clear why laughter has been considered useful since ancient times.

The physiological meaning of breathing exercises, in other words, massage of the abdominal organs with the help of the diaphragm, is that during this exercise, the filling of the heart with blood improves, and the more the heart receives it, the more it will throw it into the aorta during contraction.

Based on the program of A.A. Mikulina, every person should do the following in the morning:

1. 10 exercises of breathing exercises in bed – 1 min.
2. Volitional gymnastics – 1 min.
3. Gymnastics for the legs – 2 min.
4. Gymnastics with dumbbells – 5 min.
5. Classes on the "Health Machine" – 6 minutes
6. Running in the air 2–3 km – 20 min.
7. Vibration gymnastics – 2 min.
8. Artificial bath – 5 min.
9. Shower, shaving, washing – 10 min.
10. Breakfast – 10 min.

Total: 1 hour 15 minutes.

Conclusions:

1. The greater the amount of work performed by an organ (for example, a muscle), the more oxygen per second it consumes and the more the value of the negative electric charge decreases in it.
2. Only thanks to the portioned packing of oxygen into erythrocytes the possibility of its individual distribution according to consuming human organs.
3. Oxygen in the blood is charged with a negative sign. The number of erythrocytes and the oxygen discharged by them is directly proportional to the potential difference of the erythrocyte electric charge in relation to the charge of the consumers organs. In the same proportion, the content of the number of erythrocytes in the capillaries of consuming organs is different.
4. Coulombs electrical forces drive erythrocytes through the capillaries, Bernoullis forces force erythrocytes to move faster than the average blood velocity in the arteries.
5. Only physical exercise can increase the number of erythrocytes in the blood, reducing the number of heartbeats per minute and fast transition to the "second wind". Are very important for health trouble-free activity of capillaries and correct, complete breath.
6. We must learn to breathe so that during reading and speaking bring your body to oxygen starvation.
7. In the process of eating it is necessary to strictly limit the amount of food. Weight gain is extremely unhealthy.
8. One of the main channels for cleaning the body from toxins and poisons is sweating. Regular daily sweating is essential for health and longevity. Running in the air is the best way to do this. Artificial bath is a useful substitute for the procedure "Physical" sweating.

CONTROL AND TRAINING TESTS:

- 1) ***The health-improving system of A.A. Mikulin is based on:***
 - a) aerobic exercises;
 - b) vibro-gymnastics;
 - c) strength training exercises;
 - d) joint gymnastics
- 2) ***How to breathe correctly when running:***
 - a) inhale and exhale through the nose with tightly compressed lips;
 - b) inhale through the nose, exhale through the mouth;
 - c) inhale through the mouth and exhale through the mouth
- 3) ***When performing vibratory gymnastics, you need make:***
 - a) no more than 60 shocks;
 - b) not less than 60 shaking;
 - c) more than 60 shakes
- 4) ***Every day you need to run:***
 - a) 1–2 km;
 - b) 2–3 kilometers;
 - c) 3–5 km.
- 5) ***During volitional gymnastics, special attention must be paid for even and deep breathing:***
 - a) for every five muscle contractions, you need to take one breath and five – exhale;
 - b) for every five muscle contractions, you need to take two breaths and the sixth is exhalation;
 - c) for every five muscle contractions, you need to take three breaths and seventh – exhale
- 6) ***Each person should do the following in the morning:***
 - a) 10 exercises of breathing exercises in bed – 1 min;
 - b) 10 exercises of breathing exercises in bed – 5 minutes;
 - c) 10 exercises of breathing exercises in bed – 10 min
- 7) ***Each person should do the following in the morning:***
 - a) vibro-gymnastics – 2 min;
 - b) vibration gymnastics – 5 minutes;
 - c) vibration gymnastics – 10 min
- 8) ***Each person should do the following in the morning:***
 - a) volitional gymnastics – 1 min;
 - b) volitional gymnastics – 5 min;
 - c) volitional gymnastics – 10 min.