

# **EQUATOR TECHNOLOGIES KENYA LIMITED**

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**MOMBASA KENYA**

## **SAMOZDRAV -BREATHING DEVICE**

### **WHAT IS A SAMOZDRAV DEVICE**

SAMOZDRAV Breathing Device (SBD) is an innovative portative device for breathing training aimed at prevention and cure of various bronchopulmonary and cardiovascular diseases and increase of adaptation capabilities of the body.

SBD trains respiratory muscles by creation of resistance to breathing at inhale and exhale.

Apart from that, breathing training is performed in the so-called adaptation breathing mode ensuring physiological adaptation of the body in conditions of increased carbon dioxide concentration and reduction of oxygen content in the inhaled gas mixture. Health effect at respiratory system diseases and other system disturbances is reached by creation of a hypoxic and hypercapnic gas mixture stimulating immune and adaptive mechanisms.

## **REASONS TO USE SAMOZDRAV**

“Samozdrav” is used to prevent the following diseases:

- Allergy
- Cardiac arrhythmia
- Arthrosis

- Atherosclerosis • Insomnia • Bronchial asthma • Vegetative-vascular dystonia
- Haemorrhoids • Hypertonia • Hypotonia
- Gastrointestinal diseases • Constipation • Coronary artery disease
- Stroke • Heart attack • Migraine
- Neurosis • Dyspnea • Osteochondrosis
- Swelling • Usage during pregnancy • Diabetes type 2
- Angina pectoris • Tachycardia • Chronic bronchitis

MORE DETAILS AS BELOW:

## **DISEASE PREVENTION**

Functions of carbon dioxide:

CO<sub>2</sub> is the main regulator of vascular tone in humans. Exerting influence on the vasomotor center in the medulla oblongata, it gives a signal to the vessels vasoconstriction or vasodilation, depending on the conditions required for an adequate adaptation of the organism. The level of carbon dioxide affects not only the pressure readings, blood supply to organs and tissues, but also on the rate and depth of breathing humoral transfer of O<sub>2</sub> and nutrients to the cells and is an essential element of cell respiration, to maintain the acid-base balance, for example, the main bicarbonate buffer component system of the human body, and many other factors.

## **CARDIAC ARRHYTHMIA (TACHYCARDIA)**

The main function of "Samozdrav" is the normalisation of the amount of CO<sub>2</sub> in the organism, which leads to the decrease of the hypertonia of the blood vessels, in this way eliminating the reason of the arterial hypertension. Arterial hypertension is one of the main causes of arrhythmia, consequently breathing on "Samozdrav" may prevent the dysrhythmia of the heart. In addition, the normalisation of the amount of CO<sub>2</sub> in the arterial blood prevents the alkalosis, which is also one of the factors of cardiovascular diseases, specifically arrhythmia. Exercising on "Samozdrav" normalises the breathing, evens it, prevents dyspnea and other types of breathing dysrhythmia, leading to acidosis.

The heart innervation is provided by the parasympathetic nervous system, while the breathing is controlled not only by the parasympathetic nervous system. It is possible that the even breathing is capable of calming down the heartbeat.

## **HYPERTONIA**

The hypertonicity of the smooth muscles of the vessels characterises this illness. One of the reasons for it is the lack of the natural vasodilator of the vessels, carbon dioxide. Exercising on "Samozdrav" leads to the increase of the natural lumen regulator, CO<sub>2</sub>, and the vessels are normalised, thus the blood pressure is normalised too. Another reason for hypertonicity is the protective mechanism for excessive CO<sub>2</sub> excretion. When this particular feature is normalised, the spasm is eliminated.

## **HYPOTONIA**

During the respiratory exercises, CO<sub>2</sub> influences the vasomotor centre (which moves the vessels), which normalises vessel lumen and regulates the arterial pressure level. It is realised through the specific receptors of the reticular formation of the brainstem, and through the increase of the concentration of H<sup>+</sup>, which is taken by the carotid and other chemoreceptors.

## **CORONARY ARTERY DISEASE**

1. Researches conducted on an isolated heart demonstrate that hypercapnia increases the coronary blood flow, while hypocapnia decreases it.
2. The vast importance of the training is best shown on the example of collateral blood circulation. Regular trainings on "Samozdrav" produces additional branching of the vessels, which improve the nutrition and the blood supply of the heart.
3. Moderate hypercapnia induces the venous blood flow to the heart, increases the systolic volume as a result of the increase of the tonicity of the veins and the skeleton muscles, diffuses the blood flow.

## **STROKE**

Trainings on “Samozdrav” influence the brain vessels and blood supply specifically. Under its influence the resistance vessels relax, while in the most parts of the peripheral vessel areas spasm can be observed. Based on this, we can suppose that regular trainings on “Samozdrav” will help stimulate the brain blood flow, including the development of the collaterals, which are of vital importance for the increase of the brain tolerance to the coronary artery disease.

One of the mechanisms of the increase of the brain tolerance to the coronary artery disease, using the increase of the CO<sub>2</sub> in the arterial blood, is the angiogenesis stimulation in the brain and the increase in the number of normally functioning microvessels. In this way, regular trainings on “Samozdrav” improve the blood supply and nutrition of the brain and drastically diminish the risk of a stroke, helping restore the brain tissue.

## **HEART ATTACK**

Regular trainings on “Samozdrav” help improve the blood supply of the heart by taking the spasm off the vessels. A process of vascularisation of the heart also starts (the grow of collaterals as the alternative blood supply), it is an adaptive process. The blood supply improves and the nutrition of the heart muscle prevents the risk of heart attacks and repetitive heart attacks. Trainings on “Samozdrav” will help quicken the restorative processes of the myocardium, normalise the peripheral blood flow, which takes the pressure of the coronary heart vessels.

## **DYSPNEA**

Everyday training on “Samozdrav” normalises the lungs ventilation, restores the breathing rhythm and respiratory metabolism. The air passages are cleared from mucus and expectoration, which are go hand in hand with age and diseases of the respiratory

system (viruses, infections). As well as that "Samozdrav" trains effectively the respiratory muscles, which reduces and even eliminates dyspnea and increases the resistance of the organism.

## **CHRONIC BRONCHITIS**

1.Exercising on "Samozdrav" lead to the better blood circulation, open microvessel and capillary lumens, which run through the lungs, the bronchi and the trachea, where the illness is localised. This opens the lumens of the air passages, and the mucus excretion is rendered easier, which prevents asthma attacks and takes away the necessity of hormonal medication, which spasms the vessels and worsens the illness.

2.One of the protective reactions to the excessive excretion of CO<sub>2</sub> is the spasm of the bronchial smooth muscles. The bronchial spasm provokes choking, asphyxiation and dyspnea. Exercising on "Samozdrav" increase the level of CO<sub>2</sub> in the organism, which diminishes the risk of this illness.

3.One of the protective mechanisms for the excessive excretion of CO<sub>2</sub> is the production of mucus in the air passages, which reduces the bronchial lumen. Regular exercises help increase the CO<sub>2</sub> level, which prevents the mucus production and helps clear the bronchi.

## **ANGINA PECTORIS**

Long-time exercising on "Samozdrav" leads to the decrease of the hypertonia of the blood vessels, which improves blood flow to the heart muscle. Moderate hypercapnia helps decrease the connection of haemoglobin and oxygen, which increases oxygen nutrition of the organism tissues, including the cells of the myocardium. Due to these effects, the pressure on the coronary heart vessels is decreased and the work of myocardium is rendered easy, that leads to reducing the number of angina pectoris attacks.

## **DIABETES TYPE 2**

### **USAGE DURING PREGNANCY**

It is better to start using "Samozdrav" during pregnancy at the early stages to maintain normal bloodflow. The organism spends a lot to form the placenta and that's the reason of the brain's oxygen hunger. As well as that, the mother's bad blood supply can cause the hypoxia of the fetus, which is capable of being the reason of different illnesses of the nervous and cardiovascular systems in the posnatal period. It also creates the reason for the early coronary artery disease. 32% of the newborn deaths have necrotic and dystrophic changes of the heart muscle, while 14% have myocardium infarcts. That's why during the pregnancy it is vital to improve the blood supply and the blood flow, which will help the mother and the fetus remain healthy.

### **SWELLING**

When the veins tonicity is insufficient, there is a blood congestion, and the blood outflow from the tissues is compromised. Therefore the swelling grows. Carbon dioxide normalises veins tonicity, improves the blood flow and thus reduces the swelling.

### **OSTEOCHONDROSIS**

One of the main reasons of osteochondrosis is the spasm of the vessels and the worsening nutrition of the intervertebral discs. The positive influence of "Samozdrav" is due to the improvement of the diffuse blood supply of the osseous and chondral tissue. The usage of "Samozdrav" helps prevent this illness and restore the processes in damaged tissues.

## **NEUROSIS**

The action of "Samozdrav" is based on the normalisation of the CO<sub>2</sub> level in the organism. Carbon dioxide influences the permeability of the membranes, thus regulating the excitability of the nerve cells. A lot of researches demonstrate that the lack of CO<sub>2</sub> provokes the excessive excitability of the nerve cells. In this way regular respiratory exercises, which increase the level of CO<sub>2</sub> in the organism, help evade the excessive excitability of the nerve cells, nerve stabilisation and have a relaxing effect.

## **MIGRAINE**

Moderate hypercapnia leads to activation of the enzymatic reactions, which in its turn leads to producing a great amount of energy (ATP). As a result a cell is more capable of retrieving oxygen from the blood. As well as that regular trainings on "Samozdrav" improve the blood supply and nutrition of the brain, stimulate the development of the collaterals (bypass vessels). As a result this kind of influence "Samozdrav" prevents the main causes of the migraine.

## **CONSTIPATION**

Hypercapnia trainings improve nutrition and oxygen supply of the cells and tissues. This leads to metabolism activations and quickens the excretion of the waste products.

## **GASTROINTESTINAL DISEASES**

The increase of carbon dioxide level in the blood as a result of the respiratory exercises on "Samozdrav" leads to the relaxation of the smooth muscles of the stomach and

intestines, which restores and activates their functions. Vermicular movement is improved, the constipation is gone along with the stomach spasms.

## **HAEMORRHOIDS**

The improvement of blood flow caused by long-time exercising on "Samozdrav" provides the diminishing of the venous stasis in the legs (varicose veins) and in the pelvic area (haemorrhoids). Two of the main factors leading to haemorrhoids are constipation and lack of movement. "Samozdrav" helps improve gastrointestinal motility, which normalises the work of the stomach and eliminates constipation. In addition to that, "Samozdrav" quickens the metabolism and improves the biochemical characteristics of the arterial blood, presenting an alternative to physical activity. This effect provides the normal blood and oxygen supply to the cells and maintains the functions of the organism. In the end the respiratory trainings with "Samozdrav" help prevent many dysfunctions such as haemorrhoids.

## **VEGETATIVE-VASCULAR DYSTONIA**

With the help of the breathing gymnastics all the effectors and receptors are activated, this induces good neurility and restoration of the central nervous system. As well as that "Samozdrav" relaxes the organism.

The increase in the concentration of carbon dioxide diminishes the excitability of the nervous system and helps the response in the form the arousal reaction. In addition to that, sporadical increases of the concentration of CO<sub>2</sub> help destroy the congestive excitation focus in the brain cortex ("memory of trouble"), which have a bad influence on the susceptibility of the nervous system.

The activation (excitation) of the nervous system during moderate hypercapnia is due to the increased afference from the peripheral receptors, which are irritated by active metabolites, produced as a result of physical-and-chemical changes in the organism.

## **BRONCHIAL ASTHMA**

1. Exercising on "Samozdrav" lead to the better blood circulation, open microvessel and capillary lumens, which run through the lungs, the bronchi and the trachea, where the illness is localised. This opens the lumens of the air passages, and the mucus excretion is rendered easier, which prevents asthma attacks and takes away the necessity of hormonal medication, which spasms the vessels and worsens the illness.

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## **INSOMNIA**

The action of "Samozdrav" is based on the restoration of the normal level of CO<sub>2</sub> in the organism. Carbon dioxide influences the permeability of the membranes, thus regulating the excitability of the nerve cells. A lot of researches demonstrate that the lack of CO<sub>2</sub> provokes the excessive excitability of the nerve cells. In this way regular respiratory exercises, which increase the level of CO<sub>2</sub> in the organism, help evade the excessive excitability of the nerve cells, nerve stabilisation and have a relaxing effect. As the constant nervous overexcitement provokes insomnia, regular respiratory exercises help the improvement of sleeping.

# **ATHEROSCLEROSIS**

1.The main trigger for the development of the atherosclerosis is the reaction of the vessel wall (mainly of the endothelium) to damage. Another probable reason for the damage of the vessel wall is its malnutrition, also known as the spasm of the vessels (Vasa vasorum). Because of the improvement of nutrition of all the tissues in the organism "Samozdrav" helps the normal nutrition of the vessel walls, prevents their damage, thinning and erosion.

2.The initiating damage can happen because of several reasons, including high haemodynamic load. Respectively it is possible to evade such load, exercising on the "Samozdrav" and thus preventing the hypertonia of the vessels.

3.The relief of the vessel spasm reduces the risk of appearance of the atherosclerosis plaques.

4.Moderate hypercapnia induces the cholesterol metabolism.

5.With CO<sub>2</sub> being essential for all the vital processes, its excessive excretion (because of the hyperventilation of the lungs) triggers different protective mechanisms, one of which is the thickening of the membranes due to the accretion of cholesterol. This provokes the tissue sclerosis. The exercising on "Samozdrav" increases the level of CO<sub>2</sub> in the organism, so the production of cholesterol is ceased and reduced to the normal amount, which diminishes the risk of atherosclerosis.

# **ARTHROSIS**

The positive influence of "Samozdrav" in case of this illness is due to the improvement of the diffuse blood supply of the osseous and chondral tissue. The nutrition of the cartilage and the menisci of the joints is possible only because of the synovial fluid. The amortising and gliding structures of the joints depend on the quality and the quantity of the synovial

fluid, made by the synovial membrane. The quality and the quantity of the synovial fluid depends on the blood supply of the synovial membrane.

## **ALLERGY**

Sufficient amount of carbon dioxide is necessary for maintaining the metabolism and for the normal work of the endocrine system. This provides the means for the improvement of the work of the immune system. Carbon dioxide decreases the viscosity of colloid solutions and in this way influences the metabolism positively. The cells of a living organism are filled with colloid solution that resembles jelly. For the normal biochemical processes inside the cell to be in order, it is vital to maintain a certain degree of viscosity of this solution. More specifically, it shouldn't be too thick. The increase in the thickness of the colloid solutions can be a result of many factors, such as malnutrition, chronic hyperventilation and hypodynamia, and leads to the decrease of the velocity of biochemical processes, accumulation of poisonous byproducts, salts, carcinogens (substances that can cause cancer). In this way the respiratory exercises help to improve the intracellular metabolism and increase the protective systems of the organism.

## **MATERIALS**

- Environmental safety for human health
- Top-quality raw materials only
- Results of sanitary-epidemiological expertise (Expert opinion No 05/1736 dated 01 December 2011, affirms the "Samozdrav" trainer conformity with international quality standards of environmental and industrial safety of goods subjected to sanitary-epidemiological control, that were approved by The decision of the CU Commission, chapter II, part 16: "Request to materials and production produced of polymeric and other materials and destined for contact with food and nutritional mediums").

## **ABOUT THE SAMOZDRAV**

Breathing training device practically proved its high efficiency. This is proven by wide geography of demand for this device around the world, as well as positive medical statistics and multiple grateful responses from numerous users.

Since commencement of breathing system production it has been used by over 1 million people in many countries including France, England, Germany, US, Canada, Israel, South Africa, Kenya, Australia). The training device is very affordable and user friendly.

At present Samozdrav products are supplied in over 20,000 medical equipment shops in various regions of the world.

**FOR ANY DETAILS AND QUESTIONS PLEASE CONTACT US:**

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