

Dr. Buteyko's lecture
in the Moscow State University
on 9 December 1969

(English translation)

With Dr. Artour Rakhimov's comments

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IT TURNS OUT THAT ALL THESE INCURABLE DISEASES ARISE FROM DEEP BREATHING.

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CO2 theory and a new method of treatment and prevention of diseases of the respiratory, cardiovascular, and nervous systems and some other conditions

Lecture by Konstantin Pavlovich Buteyko, PhD (Medical Sciences)

Editorial introduction

I cannot refrain from mentioning K.P. Buteyko's recommendations of "Breathe less; train breath holding". I accept his ideas that modern man is "over-trained" about deep breathing; that this reduces CO2 concentrations in the blood and causes various spasms of the bronchi, coronary artery and the intestines. His ideas make sense. The test, which he suggests, also deserves attention which is as follows: hold your breath after usual exhalation for as long as you can, watching the second hand of a clock. If one holds for less than 20 s, this is a poor result, from 20 to 40 s is satisfactory, from 40 to 60 s is good, and more than 60 s excellent.

**Dr. Artour Rakhimov's comments: This introduction was written by a Soviet bureaucrat who had a poor understanding of the Buteyko method. First of all, Dr. Buteyko never taught others to "train their breath holds". The CP (control pause or breath holding time after usual exhalation and until the first signs of stress or discomfort) generally cannot be trained directly or by doing breath holds only. Second, the CP test is done only until the first signs of stress, and not for "as long as you can". This Soviet bureaucrat probably could not get a good result in the test (until the first discomfort) and decided that the goal was to get a better number by pushing oneself. He also imagined that the whole idea of the Buteyko method was to do many breath holds or to be "trained in breath holding". In fact, all manuals, articles, and notes written by Dr. Buteyko clearly state that the MP (maximum pause or breath holding after usual exhalation for as long as you can) test is done only on rare (or special) occasions under supervision of a medical practitioner trained by Dr. Buteyko. It is the CP (control pause) test that could be safely used by the overwhelming majority of patients since it is done only until the first signs of stress. The MP can be dangerous and detrimental to the health of many groups of patients.*

9 December 1969, Moscow.

The organizer speaks: Your attention please, Dear comrades!

A lecture will be held in the Communist auditorium of the Moscow State University. Today, the 9th of December 1969, Doctor of medical sciences, Dr. Konstantin Pavlovich Buteyko is going to give a lecture titled "Discovery of diseases of deep breathing, as the main cause of allergies, sclerosis, psychosis, drug addiction, fraud, criminality, and other symptoms of diseases and death of the western civilization"

**Dr. Artour Rakhimov's comments: This lecture took place in the largest auditorium of the Moscow State University (named after M. V. Lomonosov). This special event was organized for the staff of the University. It was likely the classified nature of Buteyko's research during the 1960s and exclusiveness of his discoveries that predetermined the organization of this lecture (there was one more, in 1972. Hence, it was definitely a very large and significant event for the scientific staff of the Moscow University. Try to imagine: the leading scientists, Professors, Academicians, and Directors of numerous Institutes of the most famous Soviet University are gathered together to hear news about medical discoveries.*

Regarding the title of the lecture with the phrase “death of the western civilization”, such a huge Soviet educational gathering could not have taken place without elements of Communist cold-war propaganda at the time. Clearly, the historical situation was an important factor that greatly influenced all these details and developments.

The organizer continues to speak, “This fundamentally new theory of the breathing, treatment and prevention of many serious diseases was developed in Academgorodok (Novosibirsk Scientific Centre) in the Laboratory of Functional Diagnostic led by K. P. Buteyko. Practical applications of the method of the voluntary liquidation of deep breathing [the Buteyko method] during the last 10 years have produced the results which are unbelievable in the history of medicine”.

** Comments. Words in italics noted with an “*” sign are Dr. A. Rakhimov’s comments throughout the whole lecture. Words in square brackets ([example]) are used to clarify the ideas expressed by Doctor Buteyko or to add missing words.*

Editorial: He [Dr. Buteyko] enters the auditorium and approaches the podium. He is a tall man with slight graying hair and free smooth movements. One can feel that he has a lot of energy, and his large facial features appear unusually calm. Possibly, this occurs when people are confident of the truth.

Buteyko’s truth is the original discovery of a way to health for hundreds of millions of people. It is a way from incurable diseases to the super-endurance of yogis.

**The end of the 1960s was definitely the zenith in Dr. Buteyko’s career: he almost completed the vast project initiated and generously funded by the Ministry of Aviation and Space Research devoted to the study of air, breathing, and the health of people. (The project was devoted to first spaceship launches.) However, he had no idea that in the following decades he was to fight, often surreptitiously for these ideas with almost no support from Soviet medical authorities.*

There is also another, rather psychological feature of this lecture that makes it different from other interviews and publications which were done later. In this lecture Dr. Buteyko, when speaking about various discoveries, uses the words “we” and “our laboratory”. He does not care about priority and his authorship. He is taking care about the business: advance of medical science, physiology, treatment of diseases, and help to millions of sick people worldwide. During later years, it was definitely the job of the KGB agents to “control” Dr. Buteyko. One of the popular methods of “control” practiced by many security agencies is to create paranoia in the “controlled” subject so that to generate his suspicion, mistrust, anxiety, greed, fantasies, fear and other negative emotions. This mission is accomplished by using relatives, friends, co-workers and everybody else who is in touch with person (by teaching them and encouraging for dirty tricks in the name of “national security”), apart from manipulating other aspects of the personal environment. Somehow, up to current days, security agencies consider generation of these feelings as a kind of “victory” or “fulfilled mission”. Absence of such negative feelings, fantasies, and paranoia in the controlled subject (e.g., his normal life) is viewed by most national security agencies as a loss. We will not dwell here on the topic why states continue to pay money for this nonsense and why gratification of basic lowest instincts of secret agents was and is called “public safety”. Instead, let us focus on the unique feature of this lecture: Dr. Buteyko’s original mindset or his easy-going relaxed attitude towards the discussed topics and scientific discoveries his laboratory made.

Dr. Buteyko speaks: It is with great pleasure that I am lecturing at the Moscow State University where I studied medicine and related sciences in 1946. It is very difficult to speak with such a group which does not have the same scientific background or occupation. It is easier to speak with doctors, or physicists, or chemical scientists. Our problem here will be presented in general for all to understand regardless of their

occupation. Therefore, I will not be able to elucidate this complex topic in all details. I will only present the main points and perhaps later, according to questions asked, which I would request you send up front in written form, I will try to explain more clearly for those who did not quite understand all the information.

Therefore I will explain, in general terms, all main relationships, which were found in our investigations, their perspectives, and only in general terms will I touch upon the theoretical part, which would be unknown to the layman. I will also describe the practical part of the business, which can be used by doctors or professionals. But most importantly, we think, is to provide educated people with our idea and theory. Most likely it will be clearer to you later. We try to disseminate our theory amongst the general population and believe that only knowledge of this theory can be a very important prophylactic factor in the struggle with most common health conditions.

Today we will not focus on details, which relate to the technical part or methodological (or instrumental) part of our research, methods of data analysis, etc. This can be interesting as well. Scientific and popular magazines have written about this a lot. Therefore, the curious can find this information in corresponding magazines and issues.

It is also difficult to list all the scientific papers published during this project: there are more than 40, including 5 approved doctoral [PhD] dissertations. Therefore, if there are people in the medical field, they can find these scientific publications and read them at the Central Library named after V.I. Lenin searching my name or the names of my colleagues. For the layman I can suggest the magazine “Izobretatel’ i ratsionalizator” (“Inventor and optimizer”), issue 5 for 1962, where all methodological questions and questions related specifically to our theory are briefly elucidated. It is seven years old, as you can see.

Then there was a popular article in the “Literaturnaya Gazeta” (“Literary Newspaper”) “Breathe deeper! Should we?” “Sovetskaya Rossiya” (“Soviet Russia”) on 14 January 1968 had an article that was “defending Doctor Buteyko”, “Sel’skaya molodezh” (“Country’s Young People”) now made a step to explain our theory. Additional information can be found in these popular articles, and scientific information, I repeat, in scientific publications, which can be found in bibliographic reference books.

Now, very briefly, I will explain the search itself because it is only in the universities that questions of systematic scientific exploration and sources of new emerging thoughts and ideas are investigated. We frequently explain all this to people who study philosophy, common problems of sciences, biology, and physiology. These professionals are interested in knowing about thoughts and ideas which run contradictory to the main dogmas, now present in medicine.

I must warn you in advance not to be surprised or indignant of anything. Therefore please submit your questions at the end of the lecture since much will be clarified during the lecture.

Can everybody hear me? Otherwise it would be very disappointing to be told only at the end of the lecture that the microphone was working poorly. However, it is possible to go on without microphones if they get in the way.

The main conclusion, which should become evident at the end is the necessity to radically reconstruct the main prophylactic treatment and methods of prevention and treatment of the most common diseases of man which concern damage of the nervous system, lungs, blood vessels, and metabolism. All these conditions should be treated using a method contrary to what had been used before. This result will possibly be interesting to you. I will also touch upon questions concerning the hygiene of intellectual work and our ability to increase our mental capacities, to improve memory, orientation, and sleep. Judging by the scope of these questions, it is obvious that the problem is too broad to be considered within the current 2 hours.

Thus, let us start with the search for truth. First doubts, which appeared and perhaps provided the first push towards original thinking already took place in 3-rd year at the Medical Institute, when we had a therapeutic practicum. I had observed how the healthy and the sick, forced to breath deeply during examinations of their lungs, experienced sudden worsening of their health state: lightheadedness, developments of asthma attacks, stenocardia (**coronary artery spasm*), cessation of breathing and seizures.

The most remarkable event took place during my 3-rd year of the Medical Institute when I was examining my very first patient and carefully listening to his lungs. During this examination, the sick people, as well as healthy ones were made to breathe deeply. In a few minutes this patient, a heavy weight athlete, collapsed as if he had been shot. I rushed up to him: he was like corpse: pale with sharpened facial features. I thought that the man had died. This happened in no more than some 3 minutes after I had listened to his lungs.

I rushed out into the corridor, called the nurse on duty (this took place in the clinic near the Petrov gates), yelling out that a healthy man was dying. She calmly said, “Even the sick do not die here”, and peeking into the room said, “You made him over breathe!” This was of little comfort, but it did calm me down. I asked for an assistant, and when he rushed in, the patient had turned blue. He took one breath, then another, opened his eyes, got up and asked: “What happened to me?” I just could not answer!

However, the assistant explained that this was due to deep breathing. Deep breathing oversaturated the body with oxygen which resulted in the sad state of affairs. This explanation aroused a gamut of questions in my mind: can deep breathing be dangerous? Deep breathing has been taught for centuries (everybody practices deep breathing to get more oxygen into their system). If 2-3 minutes of deep breathing almost killed a man, then why do we practice deep breathing? Is it not dangerous?

This case forced me to search for answers to the above questions since the assistant refused to discuss this at all. Thus, even then (this was in 1949) it was possible to collect enough facts in order to explain what was going on with the person if their breathing became deeper. It was already known that deep breathing produces negative effects on the organism; and it is exactly this mechanism that we are going to explain now.

Let us analyze 3 scenarios: What are the effects of normal breathing; what are the effects of deep or intensified breathing; and what are the effects of shallow breathing (or breathing less than the norm)?

Considering the effects of any function on the human organism, it is necessary to take into account all 3 scenarios: what are the effects of normal eating, overeating, and reduced eating or fasting. We shall similarly consider breathing.

Apparently, there are enough factors in order to establish the effects of breathing on the human body, that warrant using laws, i.e., to develop the action of breathing as a theorem in the exact sciences using known axioms: the laws of physiology. It is possible to show this using symbols: what the effect of this is or something other than breathing.

But before considering any problem, we should pay careful attention to terminology. Much confusion and many disasters happened in the numerous branches of science due to the fact that they did not specify the terminology. As it happened they were speaking using the same terms about different matters and, of course, could not agree.

Therefore, we should discuss terminology first of all. Our outer breathing has 2 parameters:

1. Frequency of breathing.

If we record the breathing act, we shall get: inhalation-exhalation (this is the first breath); inhalation-exhalation, (this is the second breath); inhalation-exhalation, (this is the third breath) etc. Assume that we recorded the volume of inhalation-exhalation. Inhalations can be counted during one minute and expressed as frequency of breathing. It is a very personal value: from 4 to 20 and more. Therefore, the frequency of breathing does not play an important role. We even forbid our patients to think about it.

What is important is to change the depth of breathing.

2. Depth of breathing, i.e., the volume of air that enters and leaves the lungs. This volume of air is called “breathing volume”, whereas the general public uses the term “depth of breathing”

**These 2 terms (frequency of breathing and depth of breathing) are translated literally from Russian, as they are used by scientists in the Russian language. The relevant Western physiological terms and international norms are:*

V_t - Tidal volume (air volume breathed in during a single breath), 500 ml at rest (the normal value)

f - Respiratory frequency (number of breathing cycles per minute), 12 breaths/min at rest (the normal value)

Although Dr. Buteyko almost rejected breathing frequency as being insignificant, this seemingly illogical step, has a deep practical meaning for Dr. Buteyko. I will try to explain. It will become clearer below that the main danger of deep breathing and the reason why he strongly argues against deep breathing alone is the excessive removal of CO₂ from the body. Theoretically, the respiratory frequency is a very important factor that directly participates in the CO₂ removal and, hence, the regulation of chemical balances in the body. Why then did Buteyko declare it unimportant? For any particular person, or in real life, both parameters generally change together in the same direction. For example, when we get sicker or experience acute episodes (like asthma attacks, stroke, heart attacks, etc.) both depth of breathing and its frequency become greater. Similarly, stress or overeating can produce deep and frequent breathing. When we improve our health, both parameters (tidal volume and respiratory frequency) get reduced. This is the way the breathing centre generally works in some 95-98% of cases. Therefore, from a practical viewpoint only the depth of breathing (or tidal volume) is what really matters. Doctor Buteyko will explain this at the end of this lecture.

Dr. Buteyko and his colleagues tried to incorporate and use breathing frequency in the 1960s (there was another attempt in the 1980-90s) as one of the parameters during breathing exercises by patients learning the Buteyko method. However, the addition of respiratory frequency did not simplify matters for them. It was, in fact, more difficult for patients to pay attention to this factor during breathing exercises. And this is exactly what he meant when he told the audience about the doctor prohibiting patients to think about breathing frequency.

Depth of breathing can be greater than the norm, normal, or less than the norm. Let us discuss these 3 situations:

- 1) Normal breathing
- 2) Deep breathing
- 3) Shallow breathing.

Deep breathing means that each breath is greater than the norm, and shallow breathing less than the norm. We should immediately forbid such a term as “correct breathing” [or right breathing] to be allowed or to be published in the mass media and to be read by people who are entirely unfamiliar with the physiology of breathing. They [mass media people] think that the function of breathing is a trivial matter and anybody can explain everything about it. Thus, the term “correct breathing” emerged. First of all, this is not a physiological term: it cannot be used to specify the function.

It is wrong to say “correct temperature” or “correct blood pressure” - these are the wrong terms. The concept “norm” exists: normal temperature, normal blood pressure, and normal breathing. But this would be half the problem, if it were the only mistake. The trouble is that propagandists of deep breathing believe that the right breathing is breathing which is deeper. They consider deep breathing correct, and shallow and normal breathing wrong. This is an absurdity. The term “deep breathing”, as a deviation from the norm, already in itself contains the concept of disease. What is disease? It is a deviation of a function from the norm. Hence, naturally, normal breathing, as normal diet, and normal activity keeps the whole organism healthy. Hence, normal breathing corresponds to a healthy organism.

What would be the effects of deep breathing or an acute deviation of the function? It turns out that there are enough laws of physiology, discovered 20-30 years ago that justify the toxic action of deep breathing.

THE FIRST STATEMENT:

1. DEEP BREATHING DOES NOT INCREASE OXYGEN CONTENT IN THE ARTERIAL BLOOD.

Why you ask? The fact is that during normal breathing our hemoglobin cells are 96-98% saturated with oxygen. About 1-3% of the blood “is bypassed”, flows past the lungs and, therefore, does not participate in the act of breathing. The first statement was discovered by [John] Haldane, as a law, about 30 years ago.

**John Scott Haldane (1860 –1936), a famous Scottish physiologist who is revered for his key advancements in respiratory physiology. He determined the exact reason for carbon monoxide’s toxicity (carbon monoxide binds hemoglobin, which prevents its crucial role in carrying oxygen throughout the body). This discovery would not be appreciated for over a half a century. He clearly showed that, except under extreme conditions, the regulation of breathing depends much more on the amount of carbon dioxide in air that is inhaled than on the amount of oxygen. This crucial finding was not applied clinically until after World War II. Haldane developed the method for stage decompression to prevent the development of nitrogen bubbles in tissue spaces upon ascent is common among deep-sea diving operations and in underwater construction. Most of Haldane’s findings were summarized at his greatest academic accolade, the Silliman lectures at Yale in 1916. This lecture was published into a book in 1922, and after a revision in 1935, became the standard guide in respiratory physiology.*

It would seem to us that deep breathing is senseless since it does not increase oxygenation of the arterial blood. However, deep breathing has another side: removal of carbon dioxide from the organism as a toxin. Yes, the second statement can be considered as an established fact which is as follows:

2. DEEP BREATHING, ACCORDING TO THE LAWS [OF MECHANICS], REMOVES CARBON DIOXIDE AND DIMINISHES ITS CONTENT IN THE LUNGS, BLOOD, AND IN TISSUES

This fact is conclusive: the truth is irrefutable. However, what are the consequences?

a) An increase in the excitability of the nervous system. For over 60 years carbon dioxide has been known as a calming, soothing and even an addictive substance. Therefore, a reduction of carbon dioxide in the nervous cells excites them. Those who learn deep breathing experience the following symptoms: insomnia, irritability, memory impairment and right up to spasms of an epileptic nature.

When all the nervous system is excited, the subcortical system is excited, the regulation of the function is disrupted. Thus, deep breathing, first and foremost destroys the nervous system. Furthermore, those who acquired deep breathing and experience these symptoms, visit doctors for years trying to find a specialist, who would be able to diagnose the disease or, moreover, to cure it. Therefore you can well understand how deep breathing causes asthma, stenocardia, hypertension, heart attacks, strokes etc.

So the first phase, the neurotic picture, it forces the patient to go from the psychiatrist to the neurologist and therapist, but they find nothing. Thus, they [patients] visit doctors for years having problems with the nervous system, until they suffer a heart attack or stroke, and then they are treated [by doctors]. Hence, excitement of the nervous system is the first reaction to deep breathing.

b) Reduction of carbon dioxide causes a reduction in pH (concentration of hydrogen ions) in the blood, and shifts acidity to alkalinity since a solution of carbon dioxide gas is a weak acid. If carbon dioxide decreases, then the environment and organism becomes more alkaline or is shifted in the direction of alkalinity. This causes the following abnormalities:

c) Change in the activity of enzymes and vitamins: some of them increase their activity, while others decrease. And this inevitably leads to:

d) Abnormalities of the metabolism, which is the foundation of life i.e. enzymes (there are about 700 of them which have already been discovered) and vitamins (there are more than 20), all these control units of the metabolism start to work abnormally. The metabolism is abnormal, the foundation of life is abnormal. If carbon dioxide decreases below the limiting norm, then there is a termination of the chemical processes, death of the cells and organism.

How can one actually decrease carbon dioxide in the organism? This was the task of [Yandell] Henderson in 1907, when devices for forceful breathing appeared.

** Yandell Henderson (1873-1944), Yale University Professor Emeritus; Honorary Medical Doctor; leader of US respiratory physiology and resuscitation; Chairman of the Section of Physiology and Pathology of the American Medical Association; the recipient of many honors; the father of cardiorespiratory physiology; an author of first physiological textbooks. During World War I he was appointed Chief of the Medical Section of the U. S. War Gas Investigations, a division of the Bureau of Mines, which developed into the research division of the Chemical Warfare Service of the U. S. Army, and in this capacity he organized the laboratories for studying the physiology of aviation and developed the medical tests for aviators.*

He connected them to the animals which, within a few minutes died from spasms caused by deep breathing. Now there are thousands of such studies of people having experienced such deep breathing and the effect was similar to what my first patient had experienced. Some could not be revived.

** When he states, "Now there are already thousands of such studies", he means studies about the negative effects of hyperventilation on different systems and organs of animals and humans. In the last sentence, he describes the tragic situation of death since most chronically ill people die in conditions of severe hyperventilation. Hence, he suggests that, while his first patient hyperventilated voluntarily and was able to regain consciousness naturally, the critically ill people have very heavy breathing, just before their death, due to other factors, and are not able to survive.*

It is without a doubt now that any person or any animal prevented from physical activity (so that carbon dioxide is not produced) or in the state of rest can be killed within minutes by deep breathing. The toxic effects of deep breathing are connected with the loss of carbon dioxide. This unchanging law is confirmed by thousands of experiments as cited in the corresponding literature. Thus, deep breathing is poisonous due to reduction in the content of carbon dioxide.

If we instantaneously diminish carbon dioxide content, then this leads to paralysis of all functions of the metabolism and the death of cells of the whole organism. What about slight decrease? This will not lead to

such disastrous consequences. At the same time, the immune abilities of the organism weaken: the immunity is abnormal. And such sick patients, i.e. deep-breathers, react to an infection so that they have frequent colds. They will be among the first people to become ill with tuberculosis, rheumatism and confined infections (sinusitis, chronic tonsillitis, and caries). Abnormalities of the metabolism impair immune reactions and transform them into allergic reactions, i.e., when inadequate or abnormal reactions to external triggers emerge.

** The last sentence clearly describes the fundamental cause of various allergic and immune abnormalities that are normal for people with asthma, hayfever, allergies, and many other autoimmune disorders. This is exactly what happens to millions of people worldwide. When the stress-free breath holding time drops below 20 s, the immune system of most people is unable to resist various infections in the sinuses, bronchi, lungs, ears, eyes, GI tract, and other parts of the body. At the same time, the immune system can become over-sensitive to many natural or innocent things such as dust mite droppings, pollen, mold, cats dander, proteins, gluten, peanuts, tomatoes, and hundreds of others.*

This leads to appearance of hives, psoriasis, eczema, chronic cold infections or asthma etc. The chemical composition of the blood is changed causing abnormalities in the formation and regeneration of bones. The term “salt deposits” are not deposits of salts, but irregularities in the formation and dissolution of bone tissues, i.e. in their metabolism. Such mistaken ideas are being imposed on the general public. The joint overgrowths that are visible are not salts, but an overgrowth of bone tissues. Therefore, some parts of the bones could be destroyed or broken and salts deposited in other places. Teeth decay etc. and, finally, a dryness of the skin, brittleness of the nails and a loss of hair should appear. All these phenomena should develop in deep-breathing people. Ultimately, if we take into consideration that tumors also represent a type of abnormal metabolism, then it is natural that the person who is mainly deep breathing should get cancer. As expected, the person with a normal metabolism will be safeguarded by the organism’s resistance,

We already have the first encouraging results, when benign tumors in the form of fibrous antipathy and fibroma of the womb in women disappear, if deep breathing is eliminated. All these are real things. Here are the effects of deep breathing: loss of carbon dioxide. But why suddenly, is carbon dioxide toxic according to our old ideas, if deficiency of this “poison” causes these sufferings and these terrible abnormalities in the organism?

To answer this question, it is necessary to briefly consider the history and evolution of Earth and life and the atmosphere of our planet. There is no doubt now that life appeared on Earth about 3-4 billion years ago. If we consider the development of Earth during the past 7 billion years, then somewhere in the middle of this period life emerged. The atmosphere then consisted mainly of carbon dioxide and other incompletely oxidized products. It was seemingly entirely toxic in its composition; oxygen was practically absent. Nevertheless, life still appeared in this oxygen-free environment. Oxygen was totally absent. It was only present in compounds, i.e. it was inert. Mainly there were carbon dioxide, methane, hydrogen supplied and incompletely oxidized products. In general, it was the same atmosphere that there is now on Venus, as results of our spaceship missions have shown.

Venus is a younger planet in cosmogenetic development and its atmosphere is similar to the atmosphere on Earth during those times, as we believe, when the life emerged. Our investigations and measurements confirmed that, yes, indeed, the atmosphere on Venus is 90% of carbon dioxide and only about 2% oxygen. That is, theoretical assumptions about the conditions of the origin of life on Earth were brilliantly confirmed by our interplanetary investigations.

Meanwhile, every living thing on Earth is produced from carbon dioxide, and is built on it. We simply do not realize this. As you know, Timiryazev and his school clearly established that plants utilize carbon dioxide

from air, by attaching water molecules during the reaction of photosynthesis and releasing oxygen, as the waste product.

**Kliment Arkadyevich Timiryazev (1843-1920): a Russian botanist and physiologist; Professor of the Moscow University; the founder of the Russian school of plant physiology; Honorable Doctor of Cambridge, Geneva and Glasgow Universities; discovered and investigated composition and optical properties of chlorophyll, physical and chemical conditions for photosynthesis (breakdown of carbon dioxide), parameters and spectrum of sunlight that participate in photosynthesis, qualitative relations between consumed energy and generated work during this process; constructed the first greenhouse in 1870s.*

Still some other elements are taken from the soil and an organism comes into existence: plants, fruits, and seaweeds. The main source of the life on Earth is carbon dioxide from air. Plants are eaten by animals, and we eat both. This means that we are built due to energy of the Sun from the carbon dioxide of air and water. Therefore carbon dioxide is the main element in the construction of all living things on Earth.

**Above-mentioned Yale Professor Yandell Henderson suggested the following about CO₂, “Carbon dioxide is, in fact, a more fundamental component of living matter than is oxygen. Life probably existed on earth for millions of years prior to the carboniferous era, in an atmosphere containing a much larger amount of carbon dioxide than at present. There may even have been a time when there was no free oxygen available in the air...” Henderson Y, Carbon dioxide, in Cyclopedia of Medicine, ed. by HH Young, Philadelphia, FA Davis, 1940.*

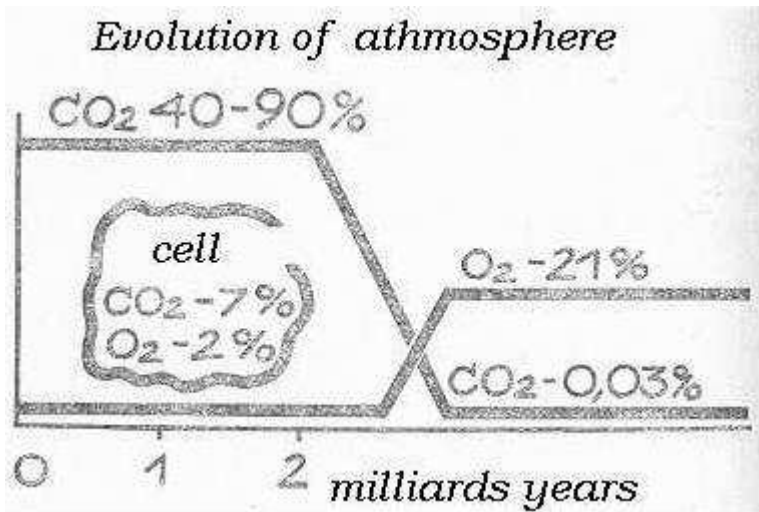
As plants and animals developed, they started to utilize more carbon dioxide than was produced by volcanoes, geysers, etc. And huge carbon dioxide reserves were eaten up by vegetation and transported underground, under sediment rocks, forming turf, oil, coal, shale, and soil - all of them below the soil covered with cosmic and earthy dust. With the disappearance of carbon dioxide from the air all living things on Earth will die, life will end.

As you can see, the main reserves of carbon dioxide on Earth have been already exhausted only 0.03% remain [in the air]. A minuscule amount! - one/30,000th of the total gas composition of air. And if this amount disappears, then life on Earth will end completely since the plants and man will have nothing to eat. The problem of migration of life to Venus, where huge reserves of carbon and carbon dioxide are present, arises, followed by a migration of people there, when plants and animals will have created the appropriate oxygen concentration.

It is already evident that life on Earth continued with high concentrations of carbon dioxide for billions of years and was built from carbon dioxide. CARBON DIOXIDE is THE MAIN SOURCE OF DEVELOPMENT OF LIVING creatures and an extremely necessary component of the environment for metabolism.

Today's atmosphere has abruptly changed. There is 21% oxygen in the air, and 0.03% carbon dioxide. It is as if we got scissors and cut off the head of life on Earth.

**What Dr. Buteyko means by “scissors”, are the graphs of CO₂ and O₂ concentrations in the air during the several million years of Earth's evolution. This graph was present in numerous Russian sources devoted to the Buteyko method.*



However, life resists and adapts. Therefore, it is still preserved, though by volume and types of species it has declined considerably. This is due to the fact that the main source of moisture are living creatures. Vegetation contains about 95% water. Therefore, moisture can be only where vegetation is present. Thus, vegetation will be in places where there is carbon dioxide which is decreasing on Earth.

If vegetation disappears, then life on Earth disappears. This process can be traced through the annals of history. Deserts, prairies, and salt-marshes are advancing on continents and life is retreating. This is a logical process of life vanishing on Earth due to the fact that resources of CO₂ are decreasing. However, the cells of animals and humans i.e. cells of the heart, brain and kidneys still need about 7% CO₂ and only 2% O₂ in the surrounding environment, in order to survive. But now the air has 10 times more oxygen and 250 less carbon dioxide. It is not suitable for our cells as its composition is very different from what our cells need.

** The math is simple here: if cells require 2% O₂, but our air has 20% O₂, clearly we have 10 times more oxygen in the air than required for our cells. Similarly, if cells require 7% CO₂, but our air has only 0.03% CO₂ (outer air has about 250 times less CO₂ than our cell requirement).*

This fact is confirmed by embryology: during recent years finally detailed studies of gas blood exchange were done in both human and animal embryos. It was found that during those 9 months we live in an environment which has 3-4 times less oxygen and 1.5 times more CO₂ (both as partial pressures) in comparison with adults. Obviously, the organism of the mother creates similar conditions for the embryo to what they were a billion years ago. This supports the Law of Haeckel-Severtsev: "ontogeny recapitulates phylogeny" (**or the embryo, in its development, repeats the general evolutionary stages*).

** Haeckel claimed that individual biological development, or ontogeny, parallels and summarizes its species' entire evolutionary development, or phylogeny. Professor Severtsev, the director of the Institute of Biological Development, supported these ideas.*

While Haeckel's theory is not completely accepted, it is absolutely obvious that formation and development of prototypes of human lungs took place at a time when the O₂ concentration in the air on Earth was less than 1%, while CO₂ was over 7%. Hence, control of breathing by the nervous system was based on a necessity of hyperventilation in cases of higher metabolic requirements or greater oxygen needs. Therefore, any stressful situation, including fight, flight, exercise, and even digestion required more oxygen and, hence deeper breathing in the past.

It makes sense to conclude then, that hyperventilation became and remains a fundamental instinct or reflex of the human organism that can be easily triggered by a large variety of internal and external triggers. It

remains hidden in the background for healthy people, but controls many main physiological processes in the sick. When we are born, we immediately start to gasp for air driven by this primitive conditioning that air has minimal oxygen content. When we die from chronic diseases, the same instinct easily takes over the control of the body which intoxicates us with air that is devoid of CO₂ and too rich in oxygen.

Everything that goes on in the organism of a fetus is a repeat of history of life on Earth. During birth and the first 2-3 breaths, there is a sudden increase in blood oxygen content and a sudden drop in carbon dioxide.

The child is virtually disease-free in the womb of the mother. It is only after the birth that diatheses and all other horrible abnormalities of metabolism appear because of a sudden change in air. The wisdom existing in Europe and, especially in the East surprises us. The new-born is tightly swaddled, and in some cases even tied to a wooden plate. The chest is covered with layers of felt. Our grandmothers covered the cradle with the infant using a material covering [leaving a small hole for air exchange], i.e., they swaddle [the baby] tightly and covered it in addition. Folk wisdom well understood that this air, which is especially poisonous for the new-born, requires gradual adaptation.

** It wasn't only Europe and the East that used swaddling of new-borns and infants until they start to exercise and generate more CO₂. In my view, all tribes, cultures, and societies from all continents had been using swaddling in the past. Those that did not use swaddling died due to infections and diseases within 2-3 generations, similar to ours. This is why we have an unprecedented epidemic of pediatric reports concerning children, only months or years old, who develop severe asthma, diabetes, obesity, cancer, heart disease etc. Such a pitiful state of today's children is something that is unknown in the history of medicine, but agrees with the ideas advanced here.*

Today our doctors immediately send the new-born to the oxygen chamber. We give him 100% oxygen and, in addition, breathing gymnastics moving the arms up and down, and so on. We are already teaching him even if he does not understand what is going on. Wherever hyperventilation is popular, children momentarily become blind, in a few days. Then the experiments with baby rats were conducted by keeping them in pure oxygen. The result was blindness in 2-3 days.

In this instance immediate sclerosis of blood vessels in the retina of eye takes place. It is obvious why it takes place. Such high oxygen content was found neither a billion years ago, nor in the womb of the mother. The human requires 2% oxygen, instead of 100%, as it is given. Therefore this becomes a negative factor as the organism was not accustomed to this.

Today at the end of the lecture you will understand more fully your prejudices in this matter. It seems that we have been doing the exact opposite in relations to our breathing and diseases. This is not surprising because we relied on prejudices and these should be done away with as soon as possible. The first prejudice is about the usefulness of deep breathing and mankind has been dying due to deep breathing. It is responsible for the fact that 80-90% of civilized people perish from diseases connected with deep breathing.

Thus, it is clear in which direction these facts are pointing. A vast amount of material has been accumulated. For example, oxygen psychosis is unlimited search for oxygen. They are now trying to give it under pressure to increase [surrounding pressure] up to 5-6 atmospheres and to force [oxygen] into the organism. In Moscow and Kiev special chambers are under construction for this purpose. They will take patients there so as to revive them. Physiologists have already done similar experiments long ago.

1. Pure oxygen at 1 atmosphere pressure kills a mouse within 11 days,
2. At a pressure of 5-6 atmospheres the mouse dies within 40 minutes at the same concentration of oxygen.

This means that old prejudices are leading us in the wrong direction, and clearly as to why: our cells in their development did not experience concentrations of oxygen above 2%. It is evident that 21% oxygen in the air is too high for our organism. We have not as yet adapted to this sharp change in the environment. It is evident that 10-15% oxygen content in the surrounding environment will be useful for our cells.

This is approximately the same as that at an altitude of 3,000 – 4,000 m above the sea level. And this is why longevity is prevalent in the mountains: oxygen poisoning is less there, and there is no carbon dioxide here, nor in the mountains which is about 0,03% and we need 7%. But oxygen content there is below the norm, and this provides a better life for the human organism. Moreover, people there are less sick with asthma, hypertension, stenocardia, heart attacks, stroke, and sclerosis. This is an established fact.

If people with asthma, hypertension, stenocardia and even schizophrenia are transported to that altitude (there are many such experiments now), they function better under these conditions and even think better. If animals are transported to such altitudes and they adapt, then it is more difficult to kill them by bloodletting, poisons, radiation, etc. Hence, in conditions with lower oxygen concentrations, the organism of both human and animal become more resistant. Apparently the poisoning action of oxygen is reduced.

Hence, at sea level we have excessive oxygen and it is necessary to hold it back on as much as possible, not something we have been trying to do so far: more and more the situation with carbon dioxide becomes clear now - if it were a poison, then we would have been poisoned long ago.

On contrary, we are craving for beer, kvass, and mineral waters. We even have ordinary water carbonated. We saturate it with carbon dioxide and drink it. These are the examples that a person instinctively seeks the source of life. If on radio and everywhere they repeat that carbon dioxide is poisonous, and man tries to get more of this poison, surely this is done for a reason that is at least pleasant. If, in fact, carbon dioxide was a poison, we would get a damaged gastrointestinal tract and all of us would have terrible diseases like ulcers of the esophagus and stomach. It turns out to be on the contrary: if one regularly consumes carbonated water, then the state of those suffering from gastritis, colitis, and stomach ulcers improves and sometimes ulcers are even cured.

Why is this so, you ask? It seems that for millions of years all animal cells have been living at high concentrations of carbon dioxide, and we were developing in the mother's womb also at high concentrations of carbon dioxide also carbon dioxide taken internally cures all diseases connected with deep breathing and deficiency of carbon dioxide. Here is how all of this appears. It turns out to be the opposite of what we imagined and this is not surprising. Thus a reduction of carbon dioxide due to deep breathing is extremely bad. This is quite clear as all the sciences and their development throughout confirm this without a doubt based on facts. Everything we thought such as: "Deep breathing is useful"; "The more oxygen - the better"; "Deep breathing is a guarantee of vitality", and "Carbon dioxide is a poison"; all are exactly the opposite.

It turns out that deep breathing causes abnormalities in the activity of smooth muscles (spasms and illnesses). It reduces our life. Carbon dioxide is the most valuable source of life. Excess carbon dioxide is harmful, just as an excess of any other substance. It should be at the optimum or normal level. Since the main preventive strategy for diseases is deep breathing, then you can see that this strategy causes diseases instead of preventing them. But to see this it is necessary to finalize our theory.

** In the last sentence, he probably means that it is necessary to make further clinical observations (or to share them with the audience) in order to show how deep breathing causes diseases.*

V. According to the laws of physiology, in particular to the teachings of Academician Anokhin (our physiologist) diseases appear when constants, boundaries, and norms are shifted. Therefore, Anokhin

believes that CO₂ content is the important constant of the organism, calling it the most important constant that determines the norms of life of our organism.

**Pyotr Kuzmich Anokhin (1898 – 1974); Academician of Academy of Medical Sciences of the USSR and the Member of the Academy of Sciences of the USSR; Doctor of Medicine; a biologist and physiologist who made important contributions to cybernetics and functional systems; elaborated the theory of functional systems (FS) which tied together subtle neuro-physiological mechanisms and integral activity of an individual; pupil of the most famous Soviet physiologist Ivan Pavlov.*

The CO₂ level is lower during deep breathing. The lower the level of the constant, the closer the person is to death. And if the carbon dioxide level is above the norm, it's not that dangerous because 3% of carbon dioxide in the cell is the lower limiting level (admissible) and anything below that level causes the cell to die. Nothing terrible happens if it is above the norm since animal cells for billions of years were living at high concentrations of carbon dioxide and also in the mother's womb.

There is no total one-sidedness: if we increase carbon dioxide above the norm (the middle norm), then an interesting phenomenon arises which I will explain later such as super-endurance [or super-resilience], a special stability of certain processes, a special stability of the nervous system, etc. Now we shall connect this with the secrets of yogi, which thus far have not been decoded. It turned out that we discovered the way to decipher super-resilience of yogi and their miracles.

** He mentioned the miracles produced by yogi which have been known to many Soviet and Western people. During the 1950s and 60s many respectable western and Soviet journals extensively wrote about the abilities of yogi to do various unusual things with their bodies. For example, they could change and regulate their heart rate in a very wide range (e.g., from 10-20 up to 120 or more beats per minute); change and regulate temperature of, for example, one arm; move a volume of water inside the small and large intestine in both directions; be buried in a sealed coffin for several days and come out alive afterwards; go into a state similar to hibernation of animals with very low heart rate and body temperature for many hours or days (some yogi did not survive the last two endeavors), etc. These miracles were often witnessed and described by western scientists. In many cases these abilities of yogi were measured and confirmed using corresponding devices, such as EKG, thermometers, X-rays, etc.*

All these miracles are based on the fact that yogis accumulate CO₂, and all their secrets are connected with a reduction of breathing. Over 30 years ago [John] Haldane found that the organism regulates CO₂ level with 0.1% accuracy (the threshold of CO₂ regulation). Since this is the level of accuracy, CO₂, obviously, is very important. Is oxygen regulated with the same precision? Only when oxygen decreases by more than 5%, the organism reacts to restore it.

** It is an accepted physiological fact that our breathing does not change if our air gets only 15% O₂ and not 20%. However, our breathing will be different, if the CO₂ is increased by 0.1%.*

Let's consider the fact when oxygen content gets higher? You can breathe a 100% oxygen and there will be no defense mechanism since the organism has never experienced such oxygen concentrations and is not adapted to having a defense mechanism. An organism can defend itself only from those factors, from which it died in the past. Since CO₂ is regulated with a 50 times greater accuracy than oxygen, this means that the biological value of carbon dioxide is 50 times higher than that of oxygen. This then is in agreement with the statements made by Anokhin.

During the process of evolution, when carbon dioxide started to disappear from our atmosphere, the organism should have formed the defensive mechanisms against the losses of carbon dioxide. Therefore, the third point

of this theory is that this is a defense against losses of carbon dioxide or from deep breathing. Similarly, we shall call point 3:

DEFENSIVE REACTIONS FROM HYPOCAPNIA (OR FROM DEEP BREATHING)

a) Independent defensive reactions are spasms (**or constrictions*). Constriction of valves reduces CO₂ losses; spasms of bronchi (**bronchoconstriction*), blood vessels (**vasoconstriction*), intestines, urinary tracts, all smooth muscles, and all muscles of organs of elimination become traumatized. This is the very nature of spasms. The defensive reaction against CO₂ losses is accomplished by narrowing of the channels of CO₂ removal.

b) Decrease in blood pressure or hypotension. Hypotension develops after 1-3 minutes of deep breathing, the blood pressure drops, and shock and fainting take place. And, indeed, my first patient lost consciousness not only from spasms of blood vessels and reduced blood flow to the brain, but also from low blood pressure.

** Note that drop in blood pressure is the immediate reaction to breathing more. In the long run, people who are genetically predisposed to high blood pressure and accumulation of cholesterol gradually develop these problems, and this is the next effect.*

c) Increase in production of cholesterol regardless of the diet. Cholesterol is a biological product which has insulating properties. It protects nerve fibers, membranes of vessels from various influences, and protects the organism from CO₂ losses. We took 25 hypertensives, as they are called (hypertension or stenocardia with high cholesterol). The vegetarian diet, which they previously had, was abolished, medication was abolished (they drank liters of iodine trying to fight cholesterol unsuccessfully). When they started to reduce their breathing and increase CO₂, the cholesterol started to fall even though they were allowed to eat fatty meats and bacon.

We established a law, according to which a decrease in CO₂ by 0, 1% increases cholesterol by 10 mg%. We published this work for the therapists' congress in Irkutsk in 1965. It is available in the corresponding proceedings. The law of cholesterol regulation was also established. All the never-ending discussions that cholesterol is harmful, or useful, is increased, or not increased, all get clarified. If deep breathing is present, cholesterol will be elevated in spite of any medications or treatments nothing will lower it. If breathing is diminished, no increase [in cholesterol level] will take place irregardless of diet. How quickly can cholesterol be reduced? After a week of proper training there is a sharp shift in the direction of reduction.

d) It turns out, that loss of CO₂ intensifies secretion of mucous membranes and cells' permeability, and this causes edema, appearance of puffiness under eyes, facial swelling, chronic rhinitis, secretion of mucus, and increased secretion in the stomach. All mucous membranes start to generate their fluids that serves the given function of this mucosal surface.

Therefore, secretion for asthmatics and pulmonary patients is useful. One should not try to cough it out, because it protects the lungs from excessive losses of carbon dioxide. In the past we would tell an asthmatic: "Cough it up, spit it out, and over-breathe". He would cough and his cough would rupture alveoli. It would develop emphysema, overload his heart, produce fainting, damage bronchial tubes, and provoke attacks. But if his breathing is decreased down to the norm, or deep breathing of our asthmatics is eliminated, then a cleansing reaction takes place, secretions of mucus emerge and disappear without any coughing, sometimes within a day. Thereafter it is no longer produced since it is not necessary.

e) Lastly, hyperfunction of the thyroid gland (or intensification of metabolism) can develop from deep breathing as well.

f) Sclerosis of vessels, bronchial tubes and lungs is, in general, a defensive reaction from losses of carbon dioxide. Sclerosis is a defensive hardening [or stiffening] of tissues, their protection from the external toxic environment. This is its biological role. If it is difficult to judge the state of blood vessels, then it is easy to observe, particularly in 10 year-olds, the development of chronic pneumonia, asthma, bronchitis, sclerosis, and pneumosclerosis. When breathing is decreased down to the norm, the lungs are cleared. In six months we do X-ray pictures: sclerosis is no longer visible. When breathing is reduced down to the norm, the lungs are clear. Sclerosis is dissolved and no need for its existence!

Our sick, deep-breathing patients, who acquired high cholesterol due to deep breathing, often get its deposits on eye lids (yellow spots and blots). So far they have been removed through surgery, because they never disappear by themselves and only increase. But during the process of getting reduced breathing down to the norm these blots dissolve visibly within 2-3 weeks, i.e. cholesterol dissolves even on the skin.

Apparently, the same process takes place in blood vessels. Therefore, this process is reversible. This is a brief list of protective reactions. But after passing a certain level, these protective reactions become damaging reactions; the pathological reactions create their own symptoms of deep breathing and the following effects in the chain of pathological processes.

VI. Therefore, the 4-th statement can be suggested as follows:

THE SPASM OF BRONCHIAL TUBES AND BLOOD VESSELS DIMINISHES INFLUX OF OXYGEN TO TISSUES AND CAUSES OXYGEN DEFICIENCY [OR TISSUE HYPOXIA].

And this is true of deep breathing. The deeper the breathing, the less oxygen reaches the tissues of the brain, heart and kidneys because of the spasms of the blood vessels and bronchial tubes. Nature happened to be economical. It should have created one set of bronchi and blood vessels for oxygen transport, and another set for the removal of carbon dioxide. Nature did not know that our environment would be changing and such pernicious conditions would come about. This led to the physiological trap or pitfall. When the spasms of bronchial tubes and vessels take place, to diminish the losses of carbon dioxide, then, since oxygen using those same channels, is automatically decreased. Therefore, deep breathers have neither carbon dioxide nor oxygen.

** This effect was known to Yale University Professor Yandell Henderson (see above). In his article "Carbon dioxide", published in Cyclopedia of Medicine (ed. by HH Young, Philadelphia, FA Davis, 1940), he wrote, "...under clinical conditions low oxygen and low carbon dioxide—anoxemia and acapnia—generally occur together. Each of these abnormal states tends to induce and intensify the other." Hence, Professor Henderson also stated that:*

- 1) Heavy breathing reduces body oxygenation*
- 2) This situation is typical for sick people.*

Both physiologists, Professor Henderson and Dr. Buteyko, of course, speak in general terms or in relation to some 80-90% of patients. In certain conditions (severe asthma, emphysema, etc.), when gas exchange in the lungs is not normal (so called "ventilation-perfusion mismatch"), carbon dioxide in the blood can become much greater than the norm, while blood and tissue oxygenation drastically falls to critically low levels. Such patients are among the first candidates to breathe pure oxygen, which increase the amount of unbound oxygen (freely dissolved) and can provide only temporary relief due to large oxidative stress for the alveoli.

There is no balance here. These two substances are entirely different in their actions: carbon dioxide is the source of life and the regenerator of functions of the organism, but oxygen is the energizer. They are only

united by the same routes of delivery and removal, but, in reality, they are entirely different things, no balance is possible here. They are regulated entirely independently of each other, but in this instance deep breathing diminishes the content of carbon dioxide in the organism and diminishes oxygen content as well. Therefore, I emphasize the fact or law established long ago: the less the depth of breathing, the more oxygen is delivered in the organism, and vice versa, the deeper the breath, the less oxygen is delivered in the organism. This is reflected very well in the PhD thesis of Igor Aleksandrovich Kovalenko. His doctoral dissertation was approved in 1967 at Parin's Institute.

** Dr. Buteyko is speaking about the Institute of Medico-Biological Problems (Moscow) headed in 1965-1969 by Professor Vasily Vasilyevich Parin, who was the founder of Soviet cosmic medicine.*

He [Kovalenko] in his dissertation showed these numerical relationships on animals. By the way, his PhD thesis at the University Library has disappeared, but there is a detailed abstract which you can read. This law is specified there. Hence, what is said on radio and written in newspapers "Breathe deeper and you will get more oxygen" is not simply a falsehood, not simply physiological illiteracy, but an idea turned on its head. And why does this happen? Unfortunately people who are illiterate in physiology act, and they are permitted to act, consequently deep breathing is widely propagandized. Neither [John] Haldane himself, or [John] Priestley, nor any of the known physiologists had stated such nonsense, "Breathe deeper", because this is absurd.

**John Scott Haldane (see the note above) worked, together with John G. Priestley in the University Laboratory of Physiology at Oxford studying the role of oxygen and in particular carbon dioxide in the control of breathing. Their key paper in 1905 was titled "The regulation of the lung ventilation", where careful measurements of CO₂ in alveolar gas under a variety of conditions showed its critical role in the control of breathing.*

For some unclear reasons, it is allowed to deviate only one [physiological] function from its norm[: breathing]. If one says, "Eat as much as possible", then people will say that this doctor is mad. But if one says: "Breathe deeper", then people think this is quite normal. These prejudices stick in our brain. However our brain is very imperfect and it can be poisoned by prejudices. Therefore, doing away with prejudices is very difficult.

V. REDUCTION OF OXYGEN IN TISSUES OF THE BRAIN CELLS AND IN KIDNEY CELLS LEADS TO REDUCTION OF OXYGEN IN VENOUS BLOOD.

Oxygen content decreases in veins, because its content is minimal in the blood flowing through the tissues. Therefore, the difference in oxygenation between arterial and venous blood increases. There is about 96-98% oxygen in arterial blood and during normal breathing, oxygen, and in venous blood the norm is about 80%, whereas for deep breathers it drops down to 70% or less. Oxygen content in the venous blood decreases; this is observed clinically. But hypoxia, it turns out, expands [venous] blood vessels and bronchial tubes so that during deep breathing the arterial vessels are narrowed (spasms).

**There are two ideas here which can be difficult to understand even for people with a knowledge of physiology and medicine. The first idea is about low oxygenation of the venous blood during hyperventilation. One may expect that, if tissues get less oxygen, then venous blood, which leaves hypoxic tissues, should have higher oxygen concentrations in comparison with normal breathing, when more oxygen is released in capillaries. The paradox is explained by the greatly reduced blood flow. The ebb and flow of blood is much slower during hyperventilation, but the tissues consume a lesser amount of oxygen than during normal breathing, the losses of oxygen in slow-flow conditions will be much greater simply because of the slowness.*

The second idea is in his last sentence about constriction of arteries. He already mentioned vasoconstriction as a reaction to hypocapnia: arteries and arterioles become narrower when CO₂ in the arterial blood is reduced. Here, he has probably suggested another, purely mechanical effect: if veins expand due to hypoxia, redistribution of the blood should lead to further constriction of arteries and arterioles, and this effect is explained by the examples he gives next.

We can see that in the eyes of hypertensives, the arteries are constricted, but veins are dilated more than the norm. This can be explained now, whereas the old hypothesis did not. There was some strange reaction of the organism: all venous blood vessels of the body are dilated (venous textures of the nose are dilated leading to the blocked nose during chronic tonsillitis). For deep breathers, the blocked nose is the “valve” or an attempt of the organism to decrease breathing. But, instead of decreasing breathing (then the nose will be unblocked), the person opens his mouth. During mouth breathing CO₂ losses are greater, and the nose is blocked even more. He goes to doctors and asks for treatment. The question arises as to how to cure him if he himself has created his blocked nose! The stagnant veins intensify their secretions. We have explained this theoretically.

Venous textures of the esophagus are expanded. Sometimes even bleeding is possible. Veins on the legs are dilated, where gravitational pressure is higher. Hemorrhoidal veins are expanded, and hemorrhoid affects the unfortunate deep-breather. It will form again if cut out and this effect now has a theoretical explanation.

The structure of pathological actions of deep breathing causes these numerous disease processes which have neither a theoretical explanation, nor practical treatment. Unfortunately, I must admit along with many famous physicians that medicine is in a state of impasse in relation to many diseases. We actually cannot cure anything. Asthma is incurable which is what the sick person is told quite frankly if he demands a cure. Hypertension, as all know, is practically incurable. Stomach ulcers are incurable. Even the chronic cold can't be cured so far, nor eczema.

IT TURNS OUT THAT ALL THESE INCURABLE DISEASES ARISE FROM DEEP BREATHING.

**Are all these diseases really caused by chronic hyperventilation? While ulcers, for example, can be triggered by horrible dietary habits, regardless of breathing, physiologically, he is absolutely correct. The inability of the organism to heal the ulcer will be based on poor oxygenation and perfusion and a weak immune system. All are direct and immediate consequences of hyperventilation.*

Since the sick, with these health conditions, are taught to breathe deeper, they then cannot cure the disease but only aggravate it. This means that “incurable” diseases arise from deep breathing. They can't be cured because the treatment was directed toward intensifying the breathing and pathological mechanisms. However, if the breathing decreases, then an asthma attack or chronic tonsillitis can disappear shortly thereafter. As these [pathological] reactions, I mentioned, can appear [due to hyperventilation] in 3-5 minutes, whereas the improvement [due to reduced breathing] will begin in 10-20 seconds. The reactions are instantaneous.

I hear a whisper of indignation and joy, “Is he saying that all diseases are caused due to deep breathing?” No, not all. There is only one disease that appears due to deep breathing. The disease of deep breathing and it causes a wide range of abnormalities. It makes metabolism, the foundation of life of all cells, abnormal and wherever there is a stronger body part or a weaker one, then one or another symptom will prevail and strongly manifest itself as a disease.