

*Spotlight on ESM Therapies*

## The Buteyko Method: Breathing Your Way to Cure

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Prevailing asthma treatments and their focus on acute care are not a long-term, sustainable solution for this condition. Despite the increased prescription of asthma medications, the number and severity of incidence continues to grow. Steroidal and bronchodilating treatments are symptomatically palliative and do not cure the illness. These medications are costly, both to the individual and to society, and perpetuate a dependence on hospital-based medicine. Bronchodilators in particular reinforce the anxiety, fear and helplessness many asthmatics feel in the face of their illness by providing short-term, immediate relief of the asthma attack, the sufferer's moment of desperation.

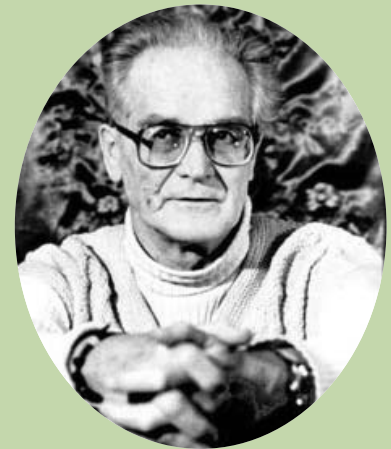
The intention of this article is to give an overview into the history and method of an effective asthma treatment that seeks to improve the physical state of the patient, reduce and even eliminate the need for pharmaceutical interventions, and shift the treatment paradigm from a dependence on the physician and acute-care drugs to the responsibility and domain of the patients themselves.

### **The History of the Buteyko Method Dr. Konstantin Buteyko**

In the 1949, the Russian medical student Konstantin Buteyko was given a practical assignment that involved monitoring

patients in the acute respiratory ward. He spent hundreds of hours sitting by patients' bedsides, recording their breathing patterns prior to death. Buteyko noticed that patients who reduced their breathing began to recover, while those who increased their breathing rate deteriorated. This fact had been noticed before, but Buteyko's subsequent 30 years of research on hyperventilation (or "over-breathing") and application of his observations resulted in his developing a systematic regimen to treat a range of respiratory illness, asthma primary among them. While his method was initially treated with a great deal of skepticism by Russian medical authorities, it was eventually officially adopted for economic reasons—the Soviet government and citizens could not afford expensive asthma drugs.

An Australian who was hospitalized during a business trip to Russia in the early 1990's and taught the Buteyko Method brought a Russian Buteyko expert back to Australia. The expert, Alexander Stalemates, taught a large number of Buteyko courses throughout Australia, a country that remains the stronghold of Buteyko practice in the western world, with considerably more practitioners than anywhere else outside of Russia. Since then, the amount of Buteyko practitioners has steadily increased and, although there are not large numbers of Buteyko courses available in the US, Buteyko



*Konstantin Buteyko*



The theory behind the Buteyko technique is quite revolutionary: asthmatics breathe too much.

teachers can be found throughout the country (see page x for a directory of US practitioners).

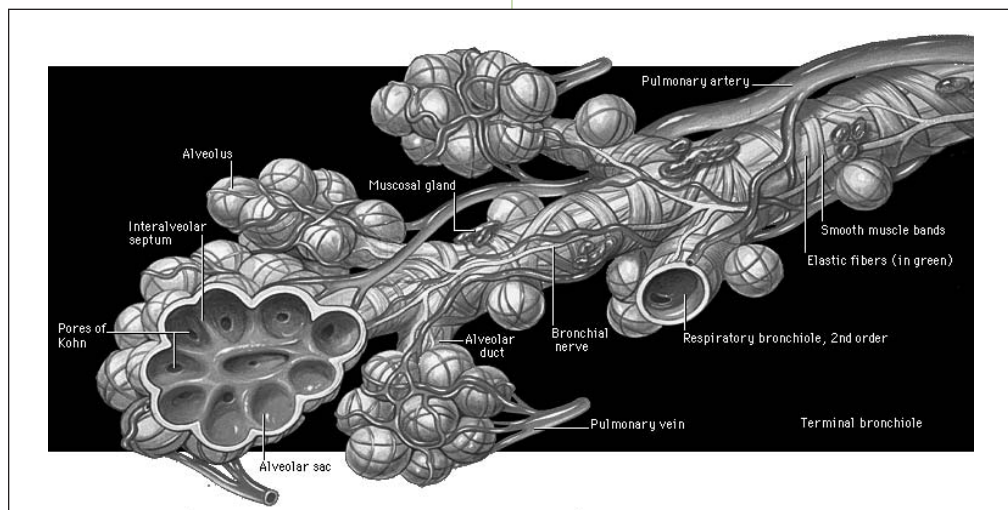
### Basic Physiology

The theory behind the Buteyko technique is quite revolutionary: asthmatics breathe too much. Everyone knows we breathe in oxygen, which passes through the lungs into the blood stream, and breathe out the waste gas carbon dioxide (CO<sub>2</sub>). However, few people realize the human body needs CO<sub>2</sub> in the lungs, at a concentration between 5.5% and 6.5%. The gaseous composition of the atmosphere was approximately 20% CO<sub>2</sub> when human life first appeared on the planet; now it is only about 0.03%. (An interesting aside is the gaseous mix in the womb is between 7% and 8% CO<sub>2</sub>). Human evolution has dealt with this dilemma of needing more CO<sub>2</sub> than the air around us provides by creating an autonomous internal air environment within the alveoli, tiny air sacs in the lungs. With normal, healthy breathing, the alveoli contain about 6.5% CO<sub>2</sub>.

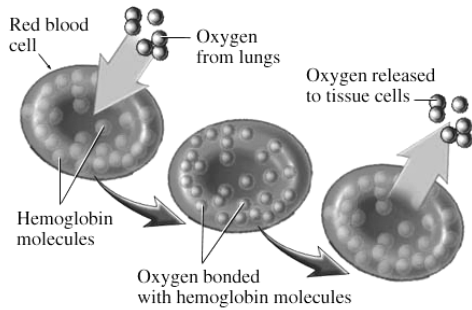
At the end of the last century Russian physiologist Verigo and Dutch scientist Bohr independently discovered that without carbon dioxide, oxygen is bound to the hemo-

globin of the blood. Carbon dioxide allows oxygen to pass efficiently into the blood and a fall in carbon dioxide results in reduced oxygenation of tissue and vital organs. This strengthened bond between the hemoglobin and oxygen is now known as the Verigo-Bohr Effect, and leads to oxygen deficiency in the tissues of the brain, heart, kidneys and other organs.

Because carbon dioxide is a very light gas, breathing too heavily dilutes the carbon dioxide stored in the air sacs and in the blood. If we breathe in too great a volume of air for our bodies' needs, we breathe off too much CO<sub>2</sub>. Doctors call this hypocapnia—literally, too little carbon dioxide. Dr. Buteyko called this hidden hyperventilation, because it often goes unnoticed. Asthmatics' bodies compensate for hypocapnia with corrective mechanisms to limit the release of carbon dioxide, like the tightening of the bronchial muscles and the production of excess mucus in the airways, which are well-known asthma symptoms. The usage of bronchodilating inhalers to relieve these symptoms opens the bronchioles which encourages over-breathing and the loss of CO<sub>2</sub>, re-triggering the body's corrective mechanisms, exacerbating the symptoms,



*Human Alveoli*



An illustration of oxygen molecules' passage from the lungs, into the red blood cells, and out into the tissues of the body. Oxygen molecules are absorbed into the red blood cells (left); when CO<sub>2</sub> is high enough, they are effectively released into tissue cells (right); however, if CO<sub>2</sub> levels are too low, the oxygen molecules stick to the hemoglobin (center) and less oxygen is released to feed the body's tissues.



## The Buteyko Breathing Method is ESM

increasing the dependence on inhalers and perpetuating the cycle.

To combat the problem of over-breathing, Buteyko developed a series of breathing exercises to teach patients who over-breathe to breathe a normal volume of air for the rest of their lives.

### How Does One Practice the Buteyko Method?

First, it must be noted that the Buteyko technique relies 100% on patient compliance for effectiveness. Learning it from a script is like learning yoga or martial arts from a book—while it is possible, it is far preferable to have a trained practitioner teach and monitor in the initial stages. Most people will experience changes in their bodies as their carbon dioxide levels rise. These changes vary from one individual to another. The Buteyko practitioner helps patients understand and handle these changes, keeps patients motivated and ensures that they are doing the exercises correctly.

Second, the patient should not make any changes to drug regimens without first consulting a doctor. Some asthma regimens—corticosteroidal in particular—can be extremely harmful to the human body if suddenly stopped. For example, as noted in the previous article on asthma, cortisol is

one of the body's own natural steroids and is essential for life and well-being. When a person takes high doses of steroids over a long time, the adrenal glands become suppressed and may decrease or stop cortisol production. If a steroid regimen is suddenly stopped, it can leave the body without any essential steroids at all.

### Those caveats aside, the basics of the Buteyko Method can be addressed here:

The first step is to train the patient to *inhale and exhale through the nose only*, as opposed to the mouth, utilizing the smaller of the two possible paths of air ingress. This involves taping up the mouth while sleeping to encourage nose breathing using a light, easily removable, micro-pore tape. Of course, this should not be done if the patient has any nasal congestion. There is also the potential that this may cause anxiety, especially in children, and should be avoided in these cases. However, there have been no reported cases of injury to patients who engage in this practice.

The second step is to **cultivate reduced, or shallow, breathing**. The patient's aim is to develop a feeling of slight hunger for air, to sustain this over a set period of time and do this frequently. The patient sits in front of a mirror and watches himself breathe,

- Safe and harmless: no adverse effects to the human body
- Clean and non-toxic: requires no drugs, chemicals or synthetics
- Cost-effective: free; only apparatus needed is a stopwatch
- Non-polluting: no industrial processes or synthetic products involved
- Adaptable and flexible: patients can adjust their practice to their own needs and condition
- Renewable; protective of life on earth, the environment and natural resources: does not use any resources other than time and breath
- Synergistic with human life and planetary well-being: brings conscious attention to the fundamental process of breathing
- Connected to the web of life: achieving a balance of gases between the internal body environment and the external atmospheric environment



## Breathing Levels

### Normal Breathing

3 to 5 liters/min

### Over-breathing

5 to 10 liters/min

### Hidden Over-breathing

10 to 20 liters/min

### Severe Over-breathing

20 to 30 liters/min

*From Every Breath You Take,  
Dr. Paul J. Arneisen*

bringing awareness to his breathing pattern. Again, breathing only through the nose, he may hold a finger under his nostrils to feel how much air is being inhaled and exhaled. Then he takes in just a little less air on each breath, developing a slight hunger for air. Initially the patient should sustain shallow breathing for two minutes, then try five, and then ten. He is to resume normal breathing after each set of shallow breathing.

Step three is to **increase the control pause**, or the time it takes to breathe out normally, and then hold the breath until the *first signs* of discomfort are felt. The patient should start a stop watch as he breathes out then hold their breath just until it becomes uncomfortable. At this moment, the patient stops the stopwatch and resumes normal breathing. The patient should not take a deeper breath before the pause, and not make any extra attempt to empty the lungs before the pause.

Asthmatics typically have a control pause of five to 15 seconds; however, not everyone with a short control pause has asthma. The aim is to achieve a control pause greater than 40 seconds, while 60 seconds or more is considered the measure of success, providing optimum CO<sub>2</sub> levels. If the patient can maintain the control pause for no more than 10 seconds, this is an indicator that he has been over-breathing.

The last step is to **increase the maximum pause**, or the time it takes to breathe out normally and fully, hold the breath in the out position, and prolong this amount of time well past the moment of initial discomfort through techniques such as self-distracting. While seated and holding the nose shut, the patient breathes out to the maximum and then closes his mouth. The patient holds the breath in expiration (lungs “empty”) despite discomfort, distracting himself through body gyrations (rocking side to side, moving the torso around) and mobile exercises (standing up, walking around, jumping).

The aim is to lengthen the maximum pause to the point it can be utilized instead of a bronchodilator when an attack is coming on. When the patient senses an imminent attack, he is to perform one maximum pause, three minutes of shallow breathing, and then another maximum pause. As mentioned before, patients retain their inhalers and other medications in case no attack relief is felt through utilization of the maximum pause.

After learning these steps, the patient engages in sets of breathing exercises. Below is a typical set of exercises:

1. Take the pulse
2. Control pause
3. 3 minutes of shallow breathing
4. Maximum pause
5. 3 minutes of shallow breathing
6. Control pause
7. 3 minutes of shallow breathing
8. Control pause
9. 3 minutes of shallow breathing
10. Maximum pause
11. 3 minutes of shallow breathing
12. Control pause
13. 3 minutes of shallow breathing
14. Take the pulse again

*(From Every Breath You Take)*

If done correctly, a set will result in the pulse rate decreasing and the control pause increasing.

### Evidence for Effectiveness: Clinical Trials

Apart from numerous anecdotal reports of the Method's effectiveness from patients, there have been three major clinical trials on Buteyko. The first official trial, not surprisingly from Russia, took place in the 1980s. “Buteyko's method proved to be very efficient in the complex treatment of bronchial asthma and helps to decrease the number and severity of attacks, at the same time reducing

medication or completely revoking the need to take the medication”, said Dr. S. Burenkov, Chair of the Childhood Diseases Centre at the First Moscow Institute. The findings indicated the Buteyko Method helps to decrease the number and severity of attacks as well as the dosage of medication; as a result of this therapy, the indicators of lung ventilation improved; the method may be taught to children from 3 years of age up either in hospital or as outpatients; and the method is most effective in acute periods of bronchial asthma in very ill patients.<sup>2</sup>

In November 1994 a medical trial sponsored by the Australian Association of Asthma Foundations was started at the Mater Hospital, Brisbane<sup>3</sup>. The results of the trial were published in the December 1998 issue of the Medical Journal of Australia (MJA). In the study, 39 people with asthma were randomly assigned to either do Buteyko breathing techniques or to be in a control group who were given relaxation techniques and breathing exercises that did not involve hypoventilation. The results showed that three months after following the Buteyko program, the asthmatic participants were experiencing 81% less symptoms. As a result, they had reduced their anti-inflammatory reliever medications by an average of 96% and their steroidal preventatives by an average of 49%. Those who practiced the Buteyko breathing method also showed a trend towards greater improvement in quality of life measures.

Interestingly, however, there was no difference between the groups (Buteyko breathing method and the control group) in objective measures of airway function, such as forced expiratory volume in one second (FEV<sub>1</sub>) and peak expiratory flow (PEF). So, by conventional lung function measures, the lungs of those using the Buteyko Method did not function any better than those of the people in the control group.

More recently in the UK, Nurse Jill McGowan led the world’s largest clinical trial to measure the effects of the method<sup>4</sup>.

Of the initial 600 participants, 384 (64%) completed the trial. Those patients who were taught the Buteyko Method all experienced significant improvement in asthma, with reduced symptoms, reduced medication and improvement in quality of life:

- Asthma symptoms decreased by an average of 98%
- Use of reliever inhalers decreased by an average of 98%
- Use of preventative inhalers decreased by an average of 92%
- Instance of cold or flu decreased by an average of 20%

Dr. John Harvey, chair of the British Thoracic Society Communications Committee, commented, “As lung specialists, we know from clinical experience that spending even a small amount of time teaching patients how to manage their condition and to control their breathing appropriately can reduce both the number of asthma attacks and improve their quality of life.”

The trial’s lead researcher, McGowan, said: “This study clearly demonstrates that teaching people with asthma to breathe correctly with the Buteyko Institute Method provides significant improvements. The Buteyko Institute Method will be key in reducing patients’ reliance on their inhalers and helping people manage their asthma with significantly less medication and feeling more in control of their condition.”

#### REFERENCES

- 1 Ameisen, Dr. Paul J. (2001) *Every Breath You Take* (2nd ed.), Ridgefield, CT: Enhancement Books. This is an indispensable text for the theory and practice of the Buteyko Method.
- 2 SI Burenkov, Minister for Health, *Special order from the Ministry of Health Number 591*; 1985
- 3 Bowler et al, 1998; 169: 575-78
- 4 British Thoracic Society/McGowan et al, 2003



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— Nurse Jill McGowan,  
head of the largest clinical study  
of the Buteyko Method