

~~Will Johnson is a Certified Rolfer and the author of a number of books about the role of the body in spiritual practices, including The Posture of Meditation and Breathing Through the Whole Body: The Buddha's Instructions on Integrating Mind, Body, and Breath. He will be teaching a sitting meditation retreat in the~~

~~Buddhist tradition, focusing on the deeply body-oriented practices and perspective of this article, April 26 – May 3, 2013 in Crestone, Colorado. As an integral component of this retreat, and as direct support for the practice, he has assembled a team of structural integrators to participate, so that each retreatant will receive four SI sessions~~

~~during the retreat. Contact Will for more information, or register at [www.dharmaocean.org](http://www.dharmaocean.org). Also, anybody wishing to communicate with him about the functional exploration of The Line and its effect on consciousness may do so through emailing [will@embodiment.net](mailto:will@embodiment.net).~~

# Rolfing® SI and the Buteyko Breathing Method

By Robert Litman, Buteyko Breathing Association Educator & Trainer, and Helen Luce, Certified Advanced Rolfer™

The premise of this article is to demonstrate that true respiratory health facilitates structural change. As breathing rhythms return to their adaptable nature, structural changes of the connective tissue are easier to affect, reducing effort on the part of the Rolfer. Adaptable, fluid breathing rhythms facilitate both a balance of the respiratory gases and a responsive, relaxed body.

The Buteyko Method evolved from the scientific principle discovered in 1904 by Christian Bohr that subsequently became known as the Bohr Effect. This principle states that when levels of carbon dioxide in the blood become too low due to chronic over-breathing, blood pH becomes too alkaline (known as “respiratory alkalosis”) causing *the distribution of oxygen from the hemoglobin in the red blood cells to the tissue cells to slow down*. As a result, the cells of the tissue switch from aerobic respiration to anaerobic respiration and lactic acid build-up begins, causing tissue acidity – also known as “metabolic acidosis.” As respiratory gases become unbalanced, our organism operates on survival circuits due to a decrease in the flow of oxygen from the blood to the cells. This response causes deep organ distress and deterioration.

Let’s take a look at how this works. The three primary respiratory gases that need balanced proportions within the organism are nitrogen, oxygen, and carbon dioxide. Most people assume that the need for oxygen drives the breathing rate and that when we feel we cannot get enough air we need to breathe more deeply. In actuality, carbon dioxide drives both the rate and depth of breathing. Carbon dioxide (CO<sub>2</sub>), often referred to as a waste gas, is actually a hormone, performing many

regulatory processes in the body. In the “old paradigm” thinking that CO<sub>2</sub> is a waste gas, it is then mistakenly perceived as something to get rid of – hence the frequently heard exhortations, “In with the good and out with the bad!” and, “Take a **big** breath in through the nose and then blow it all out your mouth!”

These instructions are actually dangerous. They invite people to release more CO<sub>2</sub> than the body intended. Think about someone terrified of public speaking as he stands behind a podium. You might see the person hyperventilating to the point that he begins to feel as if he might faint. If you know the old folk remedy, you will rush up with a paper bag and instruct him to breathe in and out into it, and soon he will start to feel better. What do you suppose really happens? This person, breathing in his own CO<sub>2</sub>, regains consciousness as CO<sub>2</sub> levels return to normal, causing an increase in oxygen distribution into the brain, clearly demonstrating the Bohr Effect.

CO<sub>2</sub> is also a poison, however. The respiratory center of the brain always monitors CO<sub>2</sub> to keep levels steady. It does this by setting the respiratory set point (rate and depth of breathing) in the brain stem. When more CO<sub>2</sub> is needed to be released it increases the rate of breathing, when less CO<sub>2</sub> is needed to be released our breathing slows down. Our bodies self-regulate these amounts properly if our breathing habits do not interrupt this process. Unfortunately, we all have developed survival skills that can limit the range of responsiveness in breathing, leading to a compression of structure. Since the tissues will not move, the brain accommodates by limiting respiration. Here

we are able to see the negative feedback loop: compressed structure = reduced respiratory adaptability = less breath = reduced requirement for adaptable tissue. The breathing rate locks into a very specific and non-variable frequency.

This perspective alters the paradigm from “symptoms cause breathing difficulties” to “stress disrupts breathing and produces symptoms.” Dr. Konstantin Buteyko revealed over 150 diseases that are breathing-related. His scientific research validated this hypothesis and his method was accepted into the Russian medical system, becoming part of hospital protocols. In this scientifically-based paradigm, shifting a person’s breathing patterns can ameliorate symptoms and alleviate the need for medications.

The most essential point that Buteyko makes regarding learning to breathe for optimal health is that *only* the nose is used, both in inhalation and exhalation, whenever possible – including during exercise. We also stress the importance of pacing your daily activity so that you can breathe through your nose most of the time. “Fight or flight” circumstances and moments of sudden excitement are exceptions to this rule.

Mouth-breathing triggers the sympathetic response for fight and flight. Nose-breathing regulates the nervous system to balance the parasympathetic (“rest and settle”) with the sympathetic so that the organism spends more time settled and rested. This allows more sustainable resources in handling the stresses of everyday life. We develop a more responsive attitude to stress rather than a reactive one. Mouth-breathing, which keeps the nervous system in a high state of activation, then translates into a state of anxiety in our organism. We are capable then, of inducing our own anxiety simply by the way we breathe! There are some forms of exercise, i.e. yoga, Pilates, etc., that use mouth breathing to create specific results, and these are also exceptions to the nose-breathing rule. Neither yogic nor

## Reasons to Nose-Breathe

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### Breathing through your nose:

- Warms the incoming air to body temperature, the optimal temperature for the lungs.
- Moisturizes the incoming air, providing the lungs with approximately a liter of moisture per day.
- Filters the incoming air through the hairs and mucous membranes that line the nose to remove particles.
- Stimulates secretion of healthy mucous to help keep the airways moist, preventing coughing and throat-clearing.
- Regulates the direction and velocity of the air stream to maximize exposure to the protective nasal mucosa, whose blanket of cilia provides a protective barrier against bacteria, chemical, or gaseous stimuli.
- Keeps your sinus membranes lubricated and functioning well, lessening the chance of stagnation that can lead to sinus infections.
- Facilitates the production of nitric oxide, an essential bronchodilator that also sterilizes the air in your sinuses on the way to your lungs.
- Triggers the release of immunoglobulins (anti-bacterial molecules) that help to clean the incoming air and increase the functioning of your immune system.
- Creates pressure differences between your lungs and nose, assuring the flow of air and oxygen to the heart and lungs.
- Imposes a resistance to the flow of air that results in 10% – 20% more oxygen uptake, helping to maintain elasticity of the lungs and ultimately the effectiveness of the heart.
- Minimizes loss of CO<sub>2</sub> during exhalation, thereby allowing CO<sub>2</sub> to do its job of reducing constriction in your airways and blood vessels, facilitating the release of oxygen from your red blood cells, and thus maximizing oxygen delivery to the other cells of your body.

### In addition, breathing through your nose

- Heightens your sense of smell, linking it to the limbic system – the seat of your emotional body – to allow you to make more choices about how you feel about things you encounter in your immediate environment.
- Maintains your sense of hearing by cleaning the environment around the inner auditory tube at the back of the upper throat, to keep it free from stagnating debris.

### Regular nasal breathing helps keep the nasal passages open for all the benefits on this list. It also:

- Brings air into your sphenoid sinuses to cool your pituitary gland and help regulate your body temperature.
- Regulates sleep by reducing CO<sub>2</sub> emissions, helping to keep your nervous and cardiovascular systems' chemistry in balance.
- Activates turning of the head and body from one side to the other during sleep, ensuring maximum rest and possibly reducing symptoms of backache, numbness, cramps, and circulatory deficits that can occur from sleeping in only one position.
- Activates healthy movement at several head and neck joints: the atlanto-occipital joint, the atlanto-axial joint, the sphenobasilar joint, and sutures of the facial and head bones – nourishing your central nervous system and helping to relax your neck and shoulders.
- Moves the air past your nasal septum, slowing the movement of air and facilitating a more complete integration of the process of ventilation with other biological processes.
- Provides any excess tears a clear passageway for drainage.
- Channels the air past the structures that mark the center of your head, helping to keep you balanced and centered.
- Reduces snoring.
- Stimulates formation of sinus growth in childhood through the movement of air.

### And lastly – and maybe most importantly – breathing through your nose:

- Reduces anxiety by regulating the speed of respiration and encouraging maximum inflation of your lungs, producing a calming effect.
- Deepens your connection to yourself and helps bring your attention to the present moment.
- Facilitates meditation and allows you to tap into your innate sense of well-being.

Pilates breath techniques were intended to be used in normal, everyday situations. Nose-breathing during other forms of exercise increases performance due to the above-mentioned increase in oxygenation. Nose-breathing, with its numerous positive physiological benefits therefore becomes a mandate for everyday living (see the sidebar Reasons to Nose-Breathe on p. 23.)

By teaching clients to understand the science and art of breathing, we empower them to permanently self-correct their breathing style. As blood chemistry is balanced, mutability and adaptability return, oxygenation of the body's tissues returns, and fluidity of movement once again becomes possible. This is the interface of Rolfing Structural Integration (SI) and the Buteyko Method. Rolfing SI prepares the body to accommodate the various changes in air volume that represent healthy breathing, which in turn facilitates deeper structural change due to the increase in tissue oxygenation that practicing the principles of Buteyko makes available.

The implication for Rolfing SI goes deeper. CO<sub>2</sub> in its role as a hormone (regulating oxygen distribution from the red blood cells to tissue cells and mitochondria) also dilates smooth muscle. It relaxes the breathing airways and the vessels of the circulatory system, as well as the connective tissue. The recent discoveries that smooth muscle cells populate within the connective tissue has implications for the pliability of the connective tissue as well as the ability of Rolfing SI to effect change.

As connective tissue moves into a more receptive and relaxed state due to the dilating effect of CO<sub>2</sub>, the Rolfer finds the tissue more responsive and capable of sustaining the changes that a good Rolfing series can produce. Teaching clients to track their own breath during sessions can bring an enormous sense of aliveness and excitement to the work. Rolfers have a great opportunity to educate clients in the single most powerful resource they have available to them: their own respiration, and its ability to heal, inform, release, and energize every cell of the body. I (Helen Luce) have experienced numerous cases of clients who are, in their own words, terribly anxiety-ridden, nervous, or in a constant state of ill health report within a session or two that they already feel like a "new person" – noticing a substantial decrease in their nervous symptoms, better sleep, sharper thinking, etc. Thanks to my study of

the Buteyko Method I have been able to help clients stop an asthma attack in less than two minutes – without use of an inhaler!

The Rolfer's work is less effortful overall, as both the client and practitioner are breathing in a healthy, sustainable manner during the sessions. The positive entrainment that occurs when the Rolfer her/himself demonstrates in every moment what healthy breathing looks – and more importantly *feels* – like, is a beautiful experience. Understanding respiratory physiology enhances every aspect of a Rolfer's work and, I believe, made a huge difference in the well-being of all my clients.

If this brief article has sparked your curiosity and you would like to learn more about the Buteyko Method, you can contact Robert Litman and Helen Luce at their respective email addresses: robert@thebreathablebody.com or helen@thebreathablebody.com. You can also take a look at the Buteyko organization's website, www.buteykoeducators.org or the following books: *The Carbon Dioxide Syndrome* by Russell and Jennifer Stark (Australia: Buteyko Works, 2002) and *Breathing Free* by Theresa Hale (New York: Three Rivers Press, 2000).

*Robert and Helen teach many Buteyko Method classes each year, both in Tucson, Arizona and around the world. They are also available for*

*private sessions, Skype sessions, and classes for other types of educators interested in learning these techniques.*

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*Helen Luce was trained twenty-nine years ago as a Rolfer and got her advanced certification six years later. She has been practicing primarily in Tucson, Arizona. Helen has been a student of Angwyn St. Just in Trauma Energetics, and has studied extensively with Emilie Conrad, Susan Harper, and Hubert Godard. She has also studied craniosacral therapy, visceral manipulation, the Buteyko Method, homeopathy, and herbal medicine. Her Rolfing SI is deeply informed by all the influences of her years of passionate study, but most especially by the sensitive and fluid touch of Continuum and craniosacral work. Her sessions always include much attention to the client's perceptual field and breathing patterns, in addition to structural and movement patterns.*

## ~~Middendorf~~ ~~Breathexperience Work~~

~~By Judith Mayanja, Certified Advanced Rolfer™ and Middendorf Breathexperience Practitioner~~

~~I remained ambivalent for months as to whether I should contribute an article about Middendorf Breathexperience Work (MBW) to *Structural Integration: The Journal of the Rolf Institute*®. Then I read a quote attributed to the Dalai Lama. It is said that when he was asked what surprised him most about humanity, he answered, "Man. Because he sacrifices his health in order to make money. Then he sacrifices money to recuperate his health. And then he is so anxious about the future that he does not enjoy the present, the result being that he does not live in the present or the future; he lives as if he is never going to die, and then~~

~~dies having never really lived." The impact from his last sentence catapulted me out of my ambivalence. ". . . and then dies having never really lived." If one could thwart such a pitiable end, it would be of infinite value.~~

~~I sent this quotation to a breath colleague of mine, inspired by the Dalai Lama's insight. Her reply to it was, "Wonderful! At least we have breath and knowledge of how to be in the moment. I'm learning more and more about that." Living, breath, and the present are inextricably connected, and if I could contribute to even one more person learning about and/or possibly trying this somatically-oriented style of breathing work~~