

Also by Patrick McKeown

*Buteyko Clinic Method 2hr DVD, CD, Manual;
the Complete Instruction to Reverse Asthma,
Rhinitis and Snoring Permanently*

*Buteyko Kids Meet Dr Mew [DVD set]: The
Complete Buteyko Breathing Method for
Children*

Asthma Free Naturally

*Anxiety Free: Stop Worrying and Quieten Your
Mind*

*Sleep with Buteyko: Stop Snoring, Sleep
Apnoea and Insomnia*

*Buteyko Meets Dr Mew [Book]: The Complete
Buteyko Breathing Method for Children and
Teenagers*

*The Oxygen Advantage: The Simple,
Scientifically Proven Breathing Technique for a
Healthier, Slimmer, Faster, and Fitter You*

SHUT YOUR MOUTH

**Buteyko Clinic self help
manual for high blood
pressure, fatigue, insomnia,
chronic hyperventilation,
asthma, snoring, and
sleep apnea**

PATRICK G MCKEOWN

This edition was first published in 2015

© Patrick McKeown 2012

Web: www.ButeykoClinic.com

Email: info@buteykoclinic.com

Tel Intl: 00 353 91 756229

The information contained in this book is not intended to serve as a replacement for professional medical advice. Any use of the information in this book is at the reader's discretion. The author and the publisher specifically disclaim any and all liability arising directly or indirectly from the use or application of any information contained in this book. A health care professional should be consulted regarding your specific situation.

All rights reserved.

No part of this publication may be copied, reproduced or transmitted in any form or by any means, without permission in writing from the publishers. This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold or otherwise circulated without the publishers prior consent, in any form of binding or cover other than that in which it is published and without similar condition including this condition, being imposed on the publisher.

Contents

Chapter 1: Improve Oxygen Delivery with the Buteyko Clinic Method	7
Important: Guidelines	28
Chapter 2: Buteyko Clinic Exercises	33
Exercise 1: Decongest your nose easily	40
Exercise 2: Reduced Breathing:	
By relaxation;	46
Attention on chest and tummy;	50
Blocking one nostril;	55
Cupping hands.	55
Exercise 3: Getting the most from physical exercise	60
Exercise 4: Breath holds during exercise	64
For Children and Teenagers	69
Exercise 5: Steps exercise for children and healthy adults	73
Exercise 6: Many Small Breath Holds to stop anxiety, asthma or panic attack	76
Chapter 3: Lifestyle Factors	79
Getting a great night's sleep	79
Foods that help, foods that hurt	85
Stress and breathing	88
Correct breathing during talking	92

Chapter 4: Tailoring Buteyko to your needs	95
Programme for older person, low control pause or unwell	95
Programme for high blood pressure, panic attack, sleep apnea and anxiety	97
Programme for children and teenagers	98
Programme for busy adults	101
Appendix 1: International Buteyko Clinics	107
Appendix 2: Recommended Reading and Viewing	108
References	109
Diary of progress	112
Short summary of Buteyko Clinic Program	121

CHAPTER ONE

Improve Oxygen Delivery with the Buteyko Clinic Method

Breathing is an innate bodily function which most of us take for granted – it only gets attention when it is not up to par. In addition to providing the body with oxygen, breathing also helps to regulate other vital bodily functions, including biochemistry, the opening and closing of blood vessels and airways, and the stress response. In simple terms, poor breathing habits deprive literally disrupt biochemistry and deprive the body of oxygen.

If you were to observe and monitor the breathing of a random group of people as they sit together in a room, noticeable differences would be evident. Some people might breathe through their noses, while others might breathe through their mouth. Some will have gentle, slow and quiet breathing, while others will be taking much louder, larger breaths. Some people sigh habitually every few minutes, while others display a regular breathing pattern. Some may use their diaphragm to breathe into the tummy, while others breathe from the upper chest.

Causes of chronic hyperventilation

Since breathing is a natural process and so vital to life, it begs the question: why do we all breathe so differently? The causes of over-breathing vary from individual to individual but are often due to environmental factors or lifestyle habits. Often, chronic hyperventilation is simply the result of a lifelong habit of breathing through the mouth. The following six factors are more common in countries of increasing modernisation and affluence:

- 1. Diet:** Over-eating increases breathing volume due to the additional work that is required by the body to process and digest the extra food. Eating processed foods puts further pressure on the digestive system since these foods are generally acidic, thereby altering the pH of the blood. As the body strives to correct this imbalance, breathing increases in order to remove excess carbon dioxide (CO₂).
- 2. Talking:** When we speak, we need to take in large breaths of air between each sentence. When we speak at length, over-breathing occurs. People who work in retail, telesales and teaching know all too well how tired and constricted they can feel following a day's work.
- 3. Stress:** When we are under stress, the 'fight or flight' response is activated. We react the same way to modern day stresses as we did

when coming face to face with a predator thousands of years ago. The difference is, when confronted by a physical danger, we had the option of fighting it or running away as fast as possible. In modern stressful situations, our breathing increases to prepare us for physical activity, but rarely do we perform the required physical exercise to burn off the adrenaline.

- 4. Sedentary lifestyle:** When we move our muscles we generate the gas carbon dioxide, which helps to maintain body oxygenation. (explained in more detail later) A lack of exercise results in lower production of CO₂ and a larger breathing volume. Fifty years ago it is estimated that we performed four hours of physical exercise each day. Today, many people are lucky if they have half an hour of exercise daily.
- 5. Big breathing:** The widely-spread belief that it is beneficial to take big breaths is a major cause of over-breathing in the Western world. Stress counsellors, gym instructors, sports coaches, and media personnel who are misinformed about correct breathing volume often encourage the practice of taking deep breaths to bring more oxygen into the body. However, very often a deep breath is confused with a 'big' breath. A deep breath is what a baby takes naturally – a gentle, quiet inhalation using the diaphragm, as demonstrated by relaxed movements of the tummy. In contrast,

a big breath is often taken in loudly through the mouth and generally involves upper chest movement, encouraging over-breathing.

- 6. Higher temperatures:** Modern homes and workplaces are generally well-insulated but not always well ventilated. Stuffy central-heated rooms make it difficult for our bodies to regulate body temperature through the skin, therefore encouraging us to revert to the primitive method of heavier breathing.

When I talk about breathing, I am not just referring to the amount of air that we breathe while under stress, during an asthma attack, panic attack or physical exercise. There is no doubt that our breathing increases during these events, but they are usually temporary, only occupying a small amount of time in any day or week. What I mean by breathing is the amount of air we take in during everyday breathing, every minute, every hour of every day. Our everyday breathing habits are of far greater consideration than the amount of air we breathe during the short term, and it is this everyday breathing that is gradually affected by our environment and lifestyle.

Incorrect breathing has a significant effect on the oxygenation of the body, causing constriction of the blood vessels and airways, and reducing oxygen delivery to the cells.

Depending on genetic predisposition, breathing more air than what the body requires contributes to the following:

- » High blood pressure
- » Stress
- » Anxiety
- » Depression
- » Sleep-disordered breathing (including snoring and sleep apnea)
- » Asthma
- » Fatigue

If you suffer from any of these symptoms or generally feel lacking in energy, I strongly encourage you to take a look at the way you breathe. To make positive physiological changes to your health, it's important to re-train your breathing habits – and I'm not talking about the 'big breaths' often espoused in Western yoga, pilates, physiotherapy and other common relaxation techniques – in fact, I am talking about doing the opposite.

All about healthy breathing

Healthy people breathe gently, quietly, calmly, and effortlessly with a natural pause on the exhale. Each breath is taken in and out through the nose, even during light physical exercise such as walking. There should

be no feeling of breathlessness during rest – if you are breathing in a healthy manner, you should not even be aware of your breath.

On the opposite end of the spectrum, poor breathing habits create noticeable breathing. Unhealthy breathers often use their mouths to take in air, breathing from the upper chest with large, obvious breaths. They probably snore at night and their regular breathing may be interspersed with sighs. Breathlessness, wheezing, or chest-tightness may also be experienced during rest. Despite taking a greater amount of air into the body than necessary, over-breathers still often feel that they are not getting enough. For many people who habitually over-breathe, breathing volume can be as much as two to three times that of a normal individual.

A worthwhile exercise at this point is to observe your own breathing habits. Find a quiet place to sit calmly for five or ten minutes and follow the movements of your breathing:

- » Are you breathing through your nose or mouth?
- » How big is the 'wave' of each breath?
- » As soon as you breathe out, do you need to breathe back in straight away or is there a natural pause between breaths?
- » Is it easy for you to see your breathing movements?

If your breathing is noticeable and requires effort during rest, it is likely that you are breathing too much air for your bodily needs. Later on in this section, you can test your breathing with the control pause exercise, which measures the length of time you can comfortably hold your breath. This will serve as a useful method of tracking the reduction of your breathing volume and measure your progress.

During workshops I often ask my students to picture the breathing of people they know who experience symptoms of asthma, anxiety, chronic fatigue, diabetes, high blood pressure, panic attacks or breathing difficulties. Observing how other people breathe can often be a valuable educational experience. In general, the sicker the person, the more you will notice their breathing.

Just as noticeable breathing during rest is testament to poor health and a lack of fitness, quiet and gentle breathing is a sign of general well-being and good health. Imagine that you are taking a moderately-paced run alongside an elite athlete. How would you expect their breathing to be? Would you expect the athlete to be puffing and panting? Do you think they would be caught for breath? Would they take a long time to recover after their run? It is far more likely, of course, that the athlete would display light breathing with relatively little breathlessness. Their breathing would probably be so light that they could maintain a conversation throughout the run (even if you were unable to talk back!). Their recovery time would only be a minute or two. This is what good breathing is all about.

The essential role of carbon dioxide

To understand how oxygen is delivered throughout the body, we need to examine the role of the gas carbon dioxide (CO₂). Carbon dioxide is generated when your body oxidises the fats and carbohydrates you eat. CO₂ is then carried by your veins to your lungs where the excess is exhaled. For normal function, the human body requires a certain amount of carbon dioxide within the blood to ensure healthy oxygenation of the organs and muscles. However, when you over-breathe, the chemoreceptors in the brain become sensitised to the presence of carbon dioxide and exhale too much, leading to a cycle of habitual over-breathing.

Carbon dioxide is not just a waste gas, it is essential for a number of vital bodily functions and the prevention of various health issues, including:

Delivery of oxygen

Oxygen is relatively insoluble, so approximately 98% of the gas is carried by haemoglobin molecules in the blood. The release of oxygen from haemoglobin is dependent on the quantity of carbon dioxide in your alveoli and arterial blood. If carbon dioxide is not at the required level of 5%, the oxygen 'sticks' to haemoglobin and therefore cannot be released to tissues and organs. The connection between carbon

dioxide and haemoglobin is known as the Bohr Effect and was discovered in 1904. The Bohr Effect is well-documented and can be found in any standard medical textbook, and yet the importance of carbon dioxide in the oxygenation of the body is too often ignored in traditional treatments.

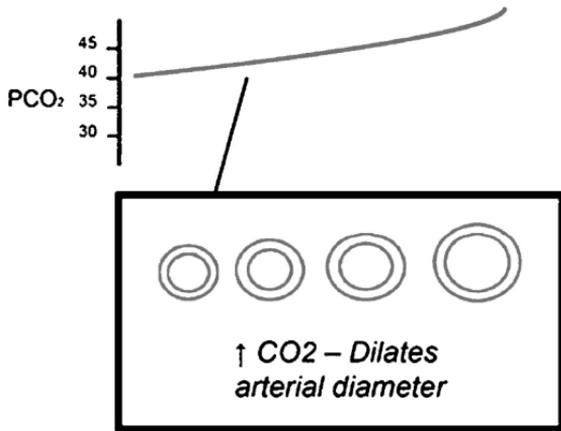
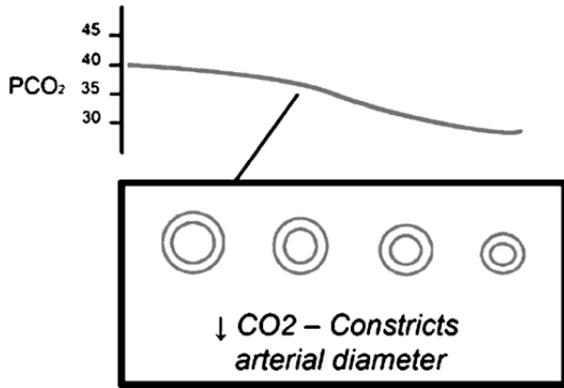
The body is generally very efficient at oxygenating the blood – normal oxygen saturation of the blood for a healthy individual is 95-99%. In fact, the body does not use the majority of oxygen we breathe. If you breathe a healthy volume of air (4-6 litres per minute), 75% of oxygen intake is exhaled. Even during intense exercise, when the body requires more oxygen than normal, it is estimated that we exhale as much as 25%. Therefore, if we already have an excess of oxygen, it goes without saying that breathing a volume greater than normal will not increase the amount of oxygen in your blood. Instead, it does the very opposite. Over-breathing lowers CO₂ levels in your lungs and blood, which in turn reduces the delivery of oxygen from haemoglobin to working muscles and organs. Rather than focusing on breathing in more oxygen, we should be focusing on retaining the carbon dioxide in our blood, which facilitates the delivery of oxygen throughout the body. The greater the amount of air taken into your body, the less oxygen is delivered.

To oxygenate tissues and organs, we need to breathe less, not more.

Dilation of blood vessels and airways

Carbon dioxide relaxes the smooth muscle that is embedded in airways, arteries and capillaries, enabling smooth breathing and healthy blood flow. For those genetically predisposed to asthma, the loss of CO₂ caused by over-breathing leads to constriction of the airways. By breathing calmly and quietly, you will retain healthy levels of carbon dioxide and your blood vessels and airways will remain open and clear.

A primary response to hyperventilation can reduce the oxygen available to the brain by one half.¹ It is no coincidence that symptoms like fatigue, anxiety and poor concentration are so common nowadays – chronic over-breathing contributes to all these issues, as well as more serious conditions such as high blood pressure and heart disease.



The essential role of Nitric Oxide

Healthy breathing which includes breathing through the nose is vital to allow the body to utilise the gases nitric oxide and carbon dioxide, both of which play a role in opening the blood vessels. Christian Bohr demonstrated the importance of carbon dioxide in body oxygenation back in 1904, but it was not until the 1980s that the incredible benefits of nitric oxide were fully understood. Until then, nitric oxide was considered a toxic gas, responsible for the environmental pollution and smog found in overpopulated cities.

The paranasal sinuses are a group of four air filled spaces that surround the nasal cavity, and in 1995 it was discovered that nitric oxide (NO) production takes place in this part of the body.² As we breathe in through the nose, large amounts of NO are released within the nasal airways.³ Nitric oxide then follows airflow to the lungs where it helps to increase oxygen uptake in the blood.²

The miracle work of NO includes maintaining a non-stick surface inside the blood vessels to allow blood to flow freely and to help prevent a build-up of cholesterol and fatty plaque deposits. Another vitally important function of nitric oxide is to relax the smooth muscles that allow blood vessels to dilate. When blood vessels are open, blood is able to flow freely, helping to maintain normal blood pressure.

Without nitric oxide the walls of the blood vessels become sticky, allowing fatty deposits to attach and build up, eventually causing a restriction to blood flow. This obstruction raises blood pressure as the heart has to work harder to push blood through the body. In turn, the heart receives less blood flow and oxygen which can cause chest pains and poor cardiovascular health. The presence of nitric oxide acts as a highly effective defence against the constriction of blood vessels, and yet breathing correctly to produce this simple and naturally-produced gas is rarely – if ever – cited as a method for lowering high blood pressure and preventing cardiovascular disease.

Just a habit

The good news is that over-breathing is just a habit. When the central chemoreceptors in your brain (which regulates the amount of air you breathe) become accustomed to breathing too much, a vicious cycle is created and receptors become oversensitive to the presence of carbon dioxide in the blood.

Using the exercises outlined in this book, I will teach you how to bring your breathing volume down toward normal levels, leading to often dramatic improvements to your health. In other words, I will teach you to breathe less.

Measure your progress with the Control Pause

With breath re-training, there are two measurements that are used to monitor your progress. These are the pulse, which is a measurement of the number of heart beats taken usually over a period of one minute, and the control pause [CP], which is the length of time for which you can comfortably hold your breath.

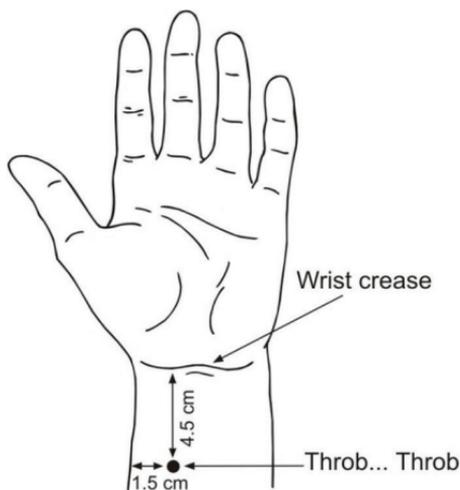
Pulse

(The CP is the primary measurement and the Pulse is secondary. If you are unable to count your pulse, you can skip it. Begin instead with measuring your CP and proceed to reduced breathing exercises.)

The pulse should be taken before and after each set of Exercise 2: Reduced Breathing exercises. When these exercises are performed correctly, with relaxation and reduced volume of breathing, the pulse at the end of exercise will be lower than at the start. Reducing breathing relaxes the smooth muscle of the blood vessels which results in less pumping work for the heart.

However, if breathing exercises are practised with too much effort or tension, the pulse will actually increase. It is important to spend time practising all breathing exercises with relaxation of muscles, even those involving physical activity. It should also be noted that the pulse rate will vary throughout the day, depending on factors such as diet, eating patterns and activity levels. As mentioned above, the pulse is measured by counting the number of heart beats per minute. Another option is to measure the number of beats over thirty seconds and multiply by two. Measuring for fifteen seconds and multiplying by four leaves too much room for error and is not advisable.

When measuring heartbeats, make sure to measure your pulse and not to count the number of seconds on your clock or watch.



Measuring the pulse

Locate the pulse about one inch up from the wrist and about one centimetre inwards on the thumb side of the hand. Place two fingers from the free hand onto the groove or channel in this area of the wrist where the slight throb of the pulse can be felt through the fingertips.

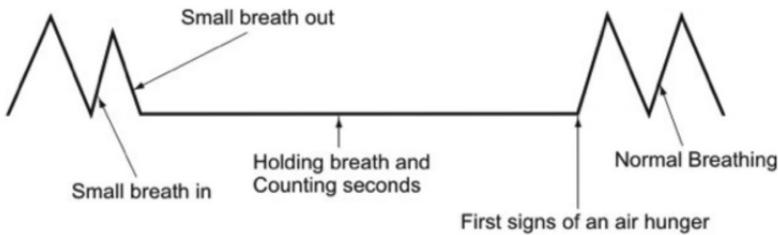
In general, the lower the resting heart rate, the healthier the individual is. Normal healthy adults will have a pulse rate of 60 to 80 beats per minute at rest. Physically fit individuals will have a lower pulse rate than this, although some individuals have a naturally low pulse rate.

The normal pulse range for a child is higher than that of an adult. A child's pulse can vary from 60 to 100 beats per minute which decreases as the child gets older.

The maximum recommended pulse rate for any individual while participating in physical activity is 220 minus their age. For example, the maximum recommended pulse rate for a twenty-five-year-old is 195 beats (220 minus 25) per minute. The pulse will vary depending on a variety of factors. It may be adversely affected by, for example, food consumption levels, food allergies, stimulants such as coffee or chocolate, and factors such as excitement, anxiety, excessive talking and, of course, big breathing.

Control Pause

During the 1960s Dr Konstantin Buteyko analysed the data from hundreds of patients and developed the concept of 'breath hold time' to measure how light or heavy we breathe – a measurement known as the Control Pause (CP). To measure your breathing and determine your own control pause, follow the instructions below.



Measuring the Control Pause (a)

In order to accurately determine this measurement it's important to sit down and rest for at least 5-10 minutes and begin the exercise with your regular rate and volume of breathing.

You will also need a clock or timer to make a note of the length of your Control Pause.

- » Take a normal breath in through your nose;
- » Exhale a normal breath out through your nose;
- » Pinch the nose with your fingers to hold the breath;

- » Begin timing and note how long it takes until you feel the first distinct urge to resume breathing – this may occur as a twitching in your neck or stomach muscles, or a feeling of air hunger;
- » Release your nose and resume normal breathing.

Common mistakes include:

- » Holding the breath after an inhalation
- » Trying to empty out the lungs completely – this will result in immediate discomfort

Measuring your CP in the morning before breakfast will provide the most accurate representation of your state of health. In the depths of sleep, breathing is a subconscious activity that cannot be interfered with. For this reason, the morning CP gives a true measurement of carbon dioxide tolerance. During the first few weeks there should be a noticeable improvement of 3-4 seconds in your Control Pause. After that, progress will continue at a slightly slower pace. Physical exercise can be gradually introduced to increase the CP above 20 seconds.

When breathing exercises are practised correctly, the body will become conditioned to tolerate a higher level of carbon dioxide. If your very first Control Pause is 10 seconds, it will take at least three weeks to reach a Control Pause of 20 seconds, and six months in order to reach a Control Pause of 40 seconds. Improvement

will be dependent on how much attention you bring to reducing your breathing. The more focus you give to your breathing each day, the better.

Your progress will be reflected in a higher Control Pause, having lighter breathing and feeling better. As far as Buteyko breathing is concerned, the Control Pause is the most important measurement of an individual's health.

Increase in CP - your health is improving

Decrease in CP - your health is deteriorating

It is important to note here that the control pause measures how many seconds you can hold your breath for comfortably - it is *not* a measurement of how long you can endure holding your breath and you should not try to push beyond the first distinct urges to breathe. Continually practising the control pause will not change the result. Your control pause will only increase when you correctly practise Buteyko Clinic exercises and begin to reduce your breathing volume towards normal.

The lower your breath hold time, the larger the volume of air you breathe – every minute of every hour of every day. According to Buteyko, if your control pause is ten seconds, you are breathing enough air for six people. If your control pause is twenty seconds, you are breathing enough for three people. If your control pause is thirty seconds, you are breathing enough for two people.

Ideally, for excellent health and a normal breathing volume, your control pause should be at least forty seconds.

Although breathing is an involuntary activity, we can exert considerable influence on our breathing by gently slowing it down, relaxing, and reducing breathing volume. By making the switch to breathing through your nose and correctly applying the breathing exercises in this book, your control pause will start to rise. And with every five second increase of your control pause, you will begin to feel vast improvements to your energy levels and general health.

Important: Guidelines

The breathing exercises in this book are very safe for most people. However, for some people certain precautions are necessary. If you are unsure of your ability, do not attempt any of the breathing exercises without seeking advice from your doctor or Buteyko Clinic practitioner.

Category 1: Only practise nasal breathing, walking with nasal breathing and relaxation if you suffer from any of the following conditions:

- » Type 1 diabetes (as reduced breathing can lower blood sugar levels, it is important to monitor more frequently)
- » Epilepsy
- » Schizophrenia
- » Chest pains
- » Sickle cell anaemia
- » Arterial aneurysm
- » Any heart problems in the past six months
- » Uncontrolled hyperthyroidism
- » Cancer
- » Kidney disease

Relaxation mp3 file can be downloaded free of charge from: ButeykoClinic.com/123.php

Category 2: If you have any of the following conditions practise Exercise 2 (Gentle reduced breathing), or Exercise 6 (Many small breath holds), so long as only a mild feeling of air shortage is experienced:

- » Severe asthma
- » Emphysema
- » COPD
- » Type 2 diabetics
- » High blood pressure
- » Pregnancy (do not practise reduced breathing during the first trimester)
- » Anxiety/depression
- » Migraine

If you are in **Category 1 or 2** you should make sure that you never create an air shortage greater than what you might normally feel during a gentle walk. An even better option would be to find an experienced practitioner to help formulate a programme tailored to your needs and abilities. A list of practitioners can be found at ButeykoClinic.com.

If you are predisposed to anxiety or migraines it's best to increase your CP gently. If your CP increases too quickly you may experience a temporary aggravation of your symptoms. This is a temporary and your CP will continue to increase when it passes.

Detoxification

As your Control Pause increases, you may experience the effects of detoxification. This is indicative of the powerful physiological changes the body undergoes when breathing volume is reduced towards normal levels. Over-breathing impairs the functioning of the kidneys, liver, intestines and other organs, and as a result, a large amount of incompletely oxidised waste products, salts, residual drugs and toxins may accumulate in the body. Practising the Buteyko Method helps to normalise metabolic activity, improving the body's excretory functions and clearing the body of harmful products. In general, the more severe a person's condition and the greater amount of medication normally required, the stronger and longer the detoxification reaction. While it is best to refrain from intense physical exercise during this process, walking regularly in the open air is an excellent way to ease symptoms.

During the cleansing period it is very important to continue with your breathing exercises, otherwise detoxification will not be completed. It is also beneficial to drink a glass of warm water with $\frac{1}{2}$ teaspoon of good quality sea salt dissolved in it each day.

You may find that the symptoms experienced during a detoxification involve a brief aggravation of your condition. For example, if you have asthma, you may experience excess mucus production in the nose and airways, especially during physical activity with nasal breathing.

You may also experience other mild side-effects such as a slight headache, diarrhoea, increased yawning, a head cold, insomnia, a bad taste in the mouth and reduced appetite. Experiencing detoxification is simply a sign that your body is readjusting to a healthier way of life. In general, symptoms are not disruptive to normal life, and will pass in two or three days. Like any detoxification process, there is always a short adjustment phase. In fact, many people look forward to experiencing a reaction as it provides direct feedback that their body is cleansing itself after all the years of bad breathing.

CHAPTER 2

Buteyko Clinic Exercises

Buteyko Clinic Exercise Summary

EXERCISE 1: Decongest your nose easily

(Suitable for everyone except category 1 or 2 on pages 28 & 29, or if you have CP of less than ten seconds)

Air shortage: medium to large

EXERCISE 2: Reduced Breathing

- » Reduced breathing through relaxation
- » Reduced breathing with attention on chest and tummy
- » Reduced breathing by blocking one nostril
- » Reduced breathing by cupping hands

(Suitable for everyone except category 1 on page 28)

Air shortage: tolerable

EXERCISE 3: Getting the most from physical exercise

(Walking with mouth closed is suitable for everyone)

Air shortage: tolerable

EXERCISE 4: Breath holds during exercise

(Suitable for children and healthy adults)

Air shortage: medium to large

EXERCISE 5: Steps

(Suitable for children and healthy adults)

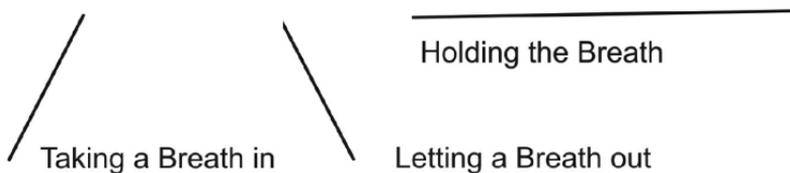
Air shortage: medium to large

EXERCISE 6: Many Small Breath Holds

(Suitable for everyone except category 1 on page 28)

Air shortage: gentle

My objective for this section is to strip away any unnecessary explanation and simply provide you with the instructions you need to make progress. Each breathing exercise is accompanied by a line diagram. To interpret these illustrations it is essential to understand the following symbols:



How to interpret breathing instructions

Important: All breathing exercises should be performed following an exhalation, including the Control Pause. Holding the breath after exhalation provides greater consistency for measuring progress, involves less stress on the lungs, and produces a higher concentration of both nasal nitric oxide and carbon dioxide which relaxes and dilates the airways. Breath hold exercises should also be practised on an empty stomach, or at least not directly after eating, as digestion increases breathing and will interfere with your progress.

Each exercise in this programme has been designed to correct breathing volume and reverse chronic hyperventilation. The goal is for your breathing to become quiet, gentle, calm and regular. As your CP increases, so will your symptoms decrease. Once you have broken the habit of over-breathing and achieved normal breathing volume, the difference to your quality of life will be significant – whether you suffer from asthma, rhinitis, allergies, high blood pressure, snoring, sleep apnea, insomnia, fatigue or stress – reduced breathing exercises are the tools to get you there.

You are now on an air diet.

When you practise any of the following breathing exercises, it is necessary that you feel a hunger for air. The extent of the urge for air will depend on the breathing exercise, but the sensation of air hunger

is a good signifier that you are performing the exercise correctly as it means carbon dioxide levels are increasing within the blood. When you reduce your breathing, your respiratory centre reacts to the changes in blood gasses by trying to stimulate breathing in order to exhale the additional CO₂. After 9-12 minutes of creating a hunger for air, the increased CO₂ penetrates your blood-brain barrier and resets the respiratory centre a little more towards normal. This will be indicated by a higher CP measurement when taken a few minutes after completing 15-20 minutes of breathing exercises.

Imagine your over-breathing habit is an over-eating habit and you are eating ten meals each day instead of the normal three. If you were told to reduce your meal consumption to the normal amount, you would initially feel hungry because your body is accustomed to eating a larger amount of food. However, within a few days, as your body readjusts to the new routine, this feeling begins to disappear. It doesn't take long to reset the receptors in your brain to accept a new volume of food – or air. When correcting your breathing, you must purposely reduce your breathing to create a temporary feeling of air hunger if you want to make progress. It's important to understand that this sensation of air hunger is not due to your body being deprived of oxygen, but simply a reaction to the accumulation of carbon dioxide in the blood.

There is just one primary rule for reducing breathing volume. Without it, you will make little progress:

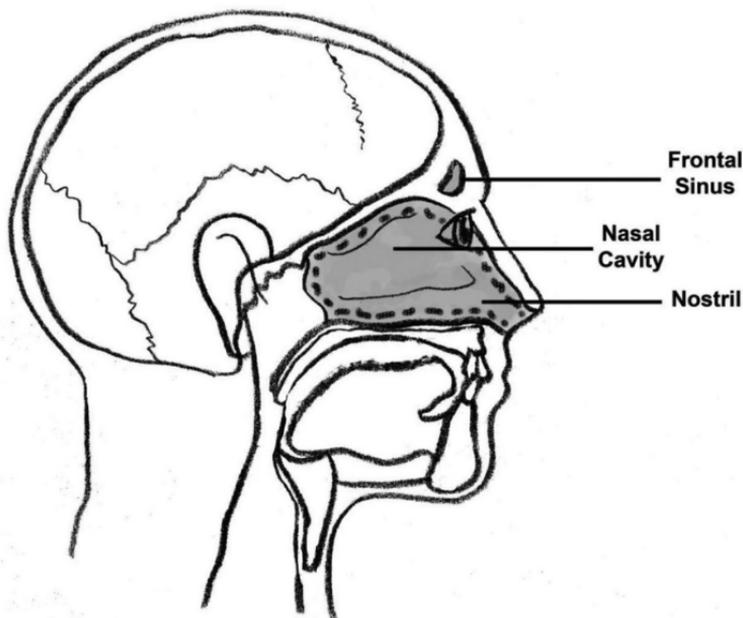
The only way that you know that you are reducing your breathing is when you feel a need for air.

This need for air is similar to the experience of breathlessness when you go for a brisk walk. While it is not a particularly pleasant feeling, it is not unbearable either, and can easily be tolerated for short periods of time while practising the exercises.

To familiarise yourself with the feeling of air hunger, try performing the following exercise:

- » Take a small silent breath in through your nose;
- » Gently breathe out through your nose;
- » Hold your nose and wait until you feel a distinct but non-stressful need to breathe in;
- » The urge for air might present as a tightening of your stomach and neck muscles, or involuntary movements of the diaphragm;
- » Release the nose and resume calm breathing.

Nose breathe to improve oxygen uptake



The first step to increasing your control pause and addressing poor breathing patterns is to switch from mouth to nose breathing. Even though its primary functions are to filter, moisten and humidify incoming air before it is drawn into the body, the nose is often underused for the essential task of breathing. Many children and adults breathe through their mouths instead, either out of habit or because of nasal obstruction. I too was a habitual mouth-breather, from childhood into my early twenties, bypassing my nose completely. My breathing habits went hand in hand with my respiratory issues, but despite being hospitalised

for recurrent asthma attacks and the overwhelming evidence of the detrimental effects of mouth-breathing, I was never once told to breathe through my nose. Instead, I accepted my constant snoring, fatigue, tension, stress, asthma, and poor concentration as part of who I was, without realising that all these issues and more could easily be addressed with a few corrections to my breathing. Prolonged mouth-breathing also caused an alteration to the structure of my face, resulting in a high upper palate, undeveloped jaws, smaller airways and crooked teeth. Little did I know the development of the lower half of the face and jaws is largely influenced by whether the mouth is open or closed during the formative years of childhood. Not only does mouth-breathing lead to uneven teeth and disrupt growth of the face, there is also much documented evidence showing that it is a significant factor in developing obstructive sleep apnea, a condition that is closely linked with high blood pressure, reduced quality of life and fatigue.¹⁻⁶

Nasal breathing, on the other hand, performs at least thirty functions on behalf of the body.⁷ Along with providing a sense of smell, the nose is nature's way of preparing air before it enters the lungs. As the nostrils are much smaller than the mouth, they create approximately 50% more resistance in comparison to mouth breathing, resulting in a 10-20% greater oxygen uptake in the blood.⁸ Breathing optimally through the nose not only increases blood oxygenation, but also increases the amount of oxygen delivered to tissues and organs.⁹ Breathing through your nose also facilitates

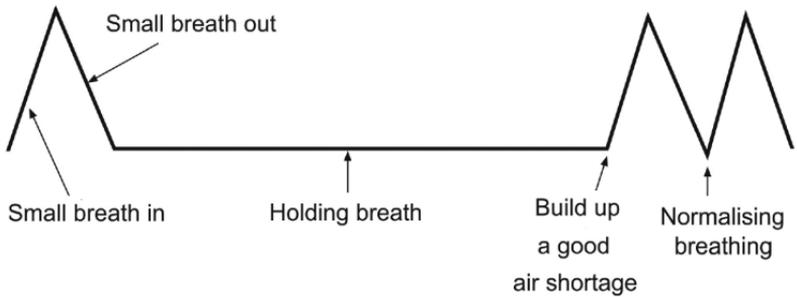
the transfer of nitric oxide from the nasal cavity to the lungs. Nitric oxide is a naturally occurring gas which has a significant effect on many bodily functions, including the reversal of the build up of cholesterol and plaque in the blood vessels. Breathing gently and slowly through the nose allows greater concentrations of nitric oxide to be picked up by the incoming air for improved blood circulation as well as airway dilation.

Exercise 1: Decongest your nose easily

Rhinitis or hayfever are a leading cause of nasal congestion¹⁰ and a significant contributory factor to numerous comorbid disorders, including dentofacial and craniofacial alterations.¹¹⁻¹³

The most common treatment for rhinitis and hay fever includes avoidance of triggers, decongestants, corticosteroids or allergy shots, and while these offer therapeutic benefit, they are effective only for as long as treatment continues.

A different perspective put forward by Dr KP Buteyko is based on the premise that breathing a volume of air in excess of metabolic requirements causes nasal congestion. Upon the first onset of nasal congestion, a feeling of air hunger occurs causing one to switch to mouth breathing. This in turn increases breathing volume, thus completing the vicious circle. The nose can be decongested for both allergic and non allergic rhinitis by holding the breath as follows:



How to unblock the nose naturally

- » Take a small, silent breath in and a small, silent breath out through your nose.
- » Pinch your nose with your fingers to hold your breath.
- » Gently nod your head up and down (or sway your body) with your breath held. Try to build up a large air shortage, without overdoing it of course!
- » When you resume breathing, do so only through your nose; your breathing must be calmed immediately.
- » After resuming your breathing, your first breath will usually be bigger than normal. Make sure that you calm your breathing as soon as possible by suppressing your second and third breaths.
- » You should be able to recover this breath hold within two to three breaths. If you cannot, you have held your breath for too long.
- » Wait for about a minute or so and then repeat.

- » Repeat this exercise five or six times until the nose is decongested.
- » After doing this exercise a few times your nose will be unblocked.

If you continue to over-breathe or take big breaths, your nose will become congested again. When your morning Control Pause is at least 20 seconds you will notice a significant reduction of nasal congestion. Perform this exercise each time your nose becomes blocked. Even if you have a cold, make sure to breathe through your nose. You may think you can't clear your nose when you have a heavy cold, but it is possible with a little focus and effort.

When you first make the switch from mouth to nasal breathing, the volume of air you inhale with each breath will immediately reduce. This is likely to feel a little strange to begin with as you will experience a slight air shortage, as the volume of air inhaled through the nose is less than you are used to inhaling through the mouth. Air hunger is a good sign of progress, and any discomfort will reduce in a couple of days. Your body may try to trick you into breathing more by yawning, sighing or sneaking in the odd mouth breath. Try not to increase your breathing in these ways. When you feel the need to 'breathe big', for example by sighing, **swallow immediately to suppress the feeling.**

Nasal Remedy

If you suffer from constant nasal congestion, you should practise nose unblocking exercises along with rinsing out the nose daily with the following remedy. This is especially important to anyone who has become dependent on nasal sprays. Yogi have realised the benefits of nasal cleansing for thousands of years and use a special vessel called a neti pot to pour the solution into each nostril. These can be purchased at most chemists, along with other nasal rinsing aids, such as bulb syringes and rinse bottles.

Dissolve half a teaspoon of quality natural sea salt (Celtic or Himalayan) and half a teaspoon of bicarbonate of soda in one pint of boiled water and let it cool. Use a rinsing aid to rinse one nostril at a time – either by pouring, squeezing or sniffing the solution through the nostril until it reaches the back of the throat. Spit the water out and repeat with the other nostril.

If you don't have a rinsing aid, you can pour a little of the warm salt water into your cupped hand and sniff the water up into the nose one nostril at a time while blocking the other nostril.

Adopt a passive approach to applying the Buteyko Clinic Method

People who are prone to developing over-breathing habits often have perfectionist tendencies. In striving to achieve flawlessness, they set excessively high performance standards and are overly critical of themselves. But when these personal demands are in excess of our capabilities, they place unnecessary stress on the body, leading to burn-out, ill health and fatigue. Learning to appreciate performing to the best of our abilities can be extremely rewarding, as it brings both a sense of accomplishment and self-satisfaction to a job well done.

For those of you with perfectionist tendencies, I suggest that you adopt a passive mental attitude to the following relaxation and breathing exercises. To achieve this approach, I often tell my students not to focus on the outcome or worry about doing it right first time. It can be difficult to adapt to not worrying about your performance when you're used to striving for perfection, but learning how to relax is at the core of these exercises, and you can't do that if you're constantly trying to be the best. Making the commitment to take your attention from the mind, placing it on the breath, and gently slowing down the breath is all that matters. In actual fact, the less you interfere with your breathing during the practice the better. Good breathing habits cannot be forced into place. Breathing can only be guided and gently coaxed into forming new habits.

Allow your breathing to quieten. Allow your body to sink into relaxation. Don't be concerned with the outcome. If your mind is wandering and tension remains throughout your body, that's fine. In time, it will dissipate. Bringing your attention out of your head and onto your breath and inner body is the most beneficial practice anyone can do to create relaxation. As you observe your breath and bring a feeling of calm into the body, tension will gradually dissolve away, and a new relaxed state will come into being.

In each of the following four approaches the objective is to breathe a smaller quantity of air than normal into the body. 'Normal' here refers to the breathing volume you are used to, which in most cases is in excess of what you actually need. The purpose of these exercises is to help reset the part of the brain that regulates breathing – the central chemoreceptors – to adapt to a reduced volume of breathing.

I suggest that you try all four approaches and then choose the exercise that you feel best suited to, or create a combination that works for you. All four approaches aim to achieve a reduction of breathing volume by relaxation, and will become easier with practice. The first approach involves bringing a feeling of relaxation to the body in order to slow down and quieten your breathing. The second approach involves creating a slight resistance to your breathing. The third approach simply helps you to practice breathing through your nose. The fourth approach involves monitoring air flow and reducing the amount of air entering the body.

Exercise 2: Reduced breathing through relaxation

(Alternatively, listen to CD from Buteyko Clinic set or from: www.buteykoclinic.com/123.php)

This exercise is ideally suited to beginners, or for anyone who suffers from high blood pressure, obstructive sleep apnea, anxiety, or panic attacks. The objective is to bring a feeling of relaxation to the body, slowly conditioning the body to breathe a lower volume of air. This primary goal of this exercise is to assist with body relaxation, which naturally reduces breathing volume. You should not feel a hunger for air while you practise, but your breathing should gradually become calmer and quieter.

For this exercise, turn off your phone, close the door, and request not to be disturbed for fifteen to twenty minutes. If there are things on your mind that might distract you, write them down and put them aside so that you can return to them later. This is a time for you to take attention from the mind and focus it on the relaxation of your body and breathing. It is a time to give your body some attention. It's normal for the mind to wander during meditative exercises – if this happens, gently bring your attention back to the relaxation of your inner body and wait for your thoughts to quieten.

Sit up straight with your bottom and lower back fitting snug against the back of the chair. Sitting with correct posture enables better functioning of the breathing muscles. Imagine a string of thread gently holding you up from the top of the back of your head, and the space between your lower ribs widening as you straighten your upper body.

With your mouth closed, jaw relaxed, and while breathing gently through your nose, begin to bring a feeling of relaxation to your body. Allow your body to relax and hold your attention on each part of the body for ten to fifteen seconds while imagining and feeling your muscles relaxing. Begin with your feet, breathing away tension and repeating the following words quietly in your mind as you move slowly up your body, relaxing each part in turn:

My feet are relaxed, my ankles are relaxed, my calves are relaxed, my thighs are relaxed, my legs are relaxed, my pelvis is relaxed, my abdominal muscles are relaxed, my chest is relaxed, my shoulders are relaxed, my neck is relaxed, my face is relaxed, my jaws are relaxed, the muscles around my eyes are relaxed, the top of my head is relaxed, the back of my head is relaxed...

Let every muscle in your body relax, including the muscles of your head, face and neck, as you bring your attention to your breathing. Observe the breath and follow the breath – there is no need to think about the breath. Simply observe the pattern of your breathing and don't try to make any changes to it. As you listen to your breathing, count quietly in your mind and encourage your body to relax even further:

One, two – relax deeper, deeper, and deeper.

Three, four, five – deeper still, deeper still, and deeper still.

Six, seven – by now your eyes should feel like shutting if you haven't already closed them. If they are still open, allow them to close now and focus completely on the breath.

Eight, nine, ten – deeper and deeper still. Now, with your eyes closed, imagine that you are going on a holiday, all expenses paid, to a part of the world where you are immeasurably happy. Imagine yourself enjoying your favourite relaxing activity: playing golf, swimming in the sea, lying on the beach, or taking a gentle walk through the countryside.

As you relax further and further, broaden your imagination to create idyllic surroundings which take up the full focus of your mind. Take, for example, the walk down a country lane:

As you walk leisurely along the country path, you see in the distance a garden, full of beautiful coloured plants and trees and shrubs. As you approach the garden each step takes you closer and closer to this magnificent view. A sudden turn in the path brings you right into the garden, and you are taken aback by the beauty of the sights all around. The sun is shining, white clouds are floating across the blue sky, the green foliage of the trees overhead matches the lush green grass beneath your feet, and yellow, red and blue flowers fill your surroundings. You can hear birds singing in the trees and feel the warmth of the sun, and right at this moment life is wonderful. As you walk around the garden, the

flowers bloom around you and everything grows in such abundance that you feel as if you are in a dream state.

As you continue to visualise your dream holiday in your dream location with your dream people, continuously bring a feeling of relaxation to your body. Disperse your attention from your head throughout the body, imagining and feeling every part of you relaxing even more.

Expect your mind to wander from time to time during this exercise. When it does, simply bring your attention back to your visualisation or inner body sensations, and continue to enjoy the feeling of relaxation. Use whichever technique works best for you. Some people will find it easier to hold their attention on relaxing different parts of their body one by one, while others will prefer to go on a mental journey to an idyllic place. To evoke even deeper inner relaxation, direct your eyes upwards without raising your head and gently let them close. This will allow you to bring your attention inwards, to concentrate better, and to relax completely.

Today's busy world is constantly clamouring for our attention, and it is so important to take the time to allow our bodies and minds to relax. This relaxation time is an opportunity for you to connect with your body and to give it the attention it deserves, as well as gently training yourself to breathe in a relaxed manner.

Exercise 2: Reduced breathing with attention on chest and tummy

The following exercise involves allowing your breathing to reduce just enough to create a tolerable hunger for air. A tolerable air hunger is the feeling that you would like to take a slightly bigger breath, or the feeling that you are not getting quiet enough air. This sensation of air hunger tells you that your breathing volume has reduced to a little less than the level at which you started the exercise. Achieving a slight or tolerable air hunger is very helpful for resetting breathing volume towards normal.

Since we don't store air within the body, whatever we breathe in, we also breathe out. Therefore, when we reduce our air intake, we also reduce the amount of air that we exhale from the lungs. By taking a slightly shorter breath in and allowing a relaxed slow breath out, carbon dioxide accumulates in the blood, which gives a signal of air hunger to tell the body that it is not getting as much air as it is used to. This feeling of air hunger is valuable feedback that you are performing the exercise correctly and reducing your breathing volume towards normal.

Breathing slowly and lightly also enables nitric oxide to accumulate in the nasal cavity and be carried to the lungs where it diffuses into the blood and performs its miracle work throughout the body. With gentle, light, and soft breathing, the blood becomes enriched with both gases, opening the blood vessels and allowing

more oxygen to be released from red blood cells to feed tissues and organs.

This exercise brings your attention to the physical movement of your breathing and encourages you to gradually reduce your breathing volume. Find a quiet place to sit where you will be undisturbed for fifteen minutes or so, and follow the instructions below:

- » Sit up straight with your mouth closed, jaws relaxed, and breathe normally through your nose. Place your hands on your chest and tummy. Observe your breath as it enters your nose and observe your breath as it leaves your nose. You may feel your chest move up and down or you might feel your tummy move in and out. At this point, don't try to adjust anything; simply become aware of your breathing.
- » When you are able to follow your breathing easily, apply gentle pressure with your hands against your chest and tummy to create some resistance to your breathing. Create just enough resistance that you can feel your breathing against your hands.
- » While applying gentle pressure with your hands against your chest and tummy, take a slightly shorter breath in than you feel you need – this is usually approximately 80% of a regular breath.
- » At the top of the inhale, bring a feeling of relaxation to your body and allow a slow,

relaxed breath out. The air should leave your body slowly and effortlessly. (It is very important not to consciously interfere with your breathing muscles or restrict your breathing during this exercise. Don't tense your stomach to reduce your breathing – instead, allow your hands to do the work by applying gentle pressure.)

- » Once again, take a smaller or shorter breath in by placing a little pressure against your chest and tummy with your hands.
- » As you breathe out, bring a feeling of relaxation to the body, allowing the air to leave the body effortlessly.
- » Continue in the same way: shorter breath in, relaxed breath out, shorter breath in, relaxed breath out
- » Practise this exercise for three to five minutes. Take a break for one minute and repeat again.

The air hunger you feel during this exercise should be tolerable, or at the same level as at the end of the control pause. If you notice that your breathing rhythm is getting fast or chaotic, then the need for air is too much. In this case, stop the exercise and breathe normally for half a minute, then resume gentle light breathing with your hands against your chest and tummy to create a tolerable need for air.

As you become more comfortable with this exercise you can proceed in merging your breathing with diaphragmatic movements. The diaphragm is the main breathing muscle during rest and should be responsible for about 80% of our breathing. You can feel your diaphragm working as your tummy moves in and out when you breathe. You should only notice breathing movements from your upper chest during physical exercise, but for normal breathing your chest should only form around 20% of body movement.

With your hands on your tummy and chest, focus on keeping each breath calm and gentle, allowing diaphragmatic breathing to move your lower hand in and out, while your upper hand remains relatively still. As you slowly reduce your breathing during this exercise, begin to co-ordinate your tummy movements with your breath:

- » As you breathe in, gently imagine your tummy moving outwards
- » As you breathe out, gently imagine your tummy moving inwards

Note that your tummy moves in the opposite 'direction' to your breath. Breathe in: tummy out. Breathe out: tummy in. As you get used to diaphragmatic breathing, gently encourage your breathing volume to slow down in order to create a manageable need for air. In other words, breathe deeply into the tummy, but also

breathe less. If you find it difficult to reduce breathing volume as well as to breathe using the diaphragm, then I suggest concentrating only on reducing breathing volume. Learning to breathe less while slowing down your breathing is primary; diaphragmatic breathing is secondary, and will become easier with practice.

If you feel that the exercise makes you panic, take a rest for half a minute and start again. This time, simply focus on allowing your breathing to calm down ever so gently in order to create a hint of an air shortage. This exercise should not be stressful in any way, but for people who are prone to panic attacks, reducing their breathing can create tension, bringing on a feeling similar to what is experienced during a panic attack. If you are struggling to stay relaxed during this exercise, try **Exercise 6 (Many Small Breath Holds)** below instead.

Exercise 2: Reduced breathing by blocking one nostril

When one of your nostrils is partially blocked, create a need for air by placing your finger over the unblocked nostril and trying to breathe through the partially blocked nostril. By blocking your free nostril you will reduce your air intake and should experience a feeling of air hunger. Try to maintain this for 4 minutes at a time.

The effectiveness of this exercise will depend on the strength of your urge for air. As a bonus, after a few minutes of breathing through your blocked nostril you should help to ease the congestion. (For more help unblocking your nose, see **Exercise 1.**)

Exercise 2: Reduced breathing by cupping hands

This exercise involves cupping your hands together and placing them over your nose to concentrate on reducing breathing volume. Cupping your hands serves two purposes. Firstly, the inside of your hands are very sensitive and provide an excellent barometer of the amount of air that you are breathing. As you breathe into your hands you will feel the warm air accumulate within your palms – the more air you breathe, the greater the warmth inside your hands. Secondly, breathing into your hands allows carbon dioxide to accumulate, which you then re-breathe back into the lungs, increasing CO₂ levels in the blood.

This exercise is very straightforward and helps to reduce your breathing volume while enabling you to pay close attention to the breath. Find a comfortable, quiet place to sit and practise this exercise, and follow the instructions below:

- » Cup your hands around your nose, close your mouth, and breathe calmly in and out through your nose.
- » Focus on the amount of air you breathe as it enters and leaves your nostrils. Focus on a small area just inside the nostril. Feel the air as it enters your nose. Feel the air as it leaves your nose.
- » Concentrate on slowing down the speed of the air as it enters the nostrils.
- » Concentrate on slowing down the speed of the air as it leaves the nostrils.
- » The objective is to slow breathing down to the point where you feel a tolerable need for air. If the need for air is too much, or if you feel a little panicky or stressed, then take a slightly larger breath or take a rest from the exercise for half a minute or so.
- » Continue the exercise for three to five minutes. Take a break for about one minute and repeat again.

Suggested ten minute routine for Exercise 2:

- » Measure your pulse
- » Take Control Pause
- » Reduced breathing for 4 minutes
- » Take Control Pause
- » Reduced breathing for 4 minutes
- » Wait 1 to 2 minutes before taking your final Control Pause
- » Measure your final pulse

The CP measurement taken at the end of the short ten minute routine should be 10 to 20% higher than the first.

Suggested twenty minute routine for Exercise 2:

- » Measure your pulse
- » Take Control Pause
- » Reduced breathing for 4 minutes
- » Take Control Pause
- » Reduced breathing for 4 minutes
- » Take Control Pause
- » Reduced breathing for 4 minutes
- » Take Control Pause

- » Reduced breathing for 4 minutes
- » Wait 3 minutes before taking your final Control Pause
- » Measure your final pulse

The CP measurement taken at the end of the twenty minute routine should be around 20% higher than the first.

You should start to feel warmer as your breathing reduces due to increased dilation of the blood vessels. If you don't feel warmer, ensure that you are creating an air shortage and that you are able to sustain it for 4 minutes at a time.

During these exercises your mind may wander – this is completely normal and you will learn to keep your focus the more you practise – simply return your attention to creating a need for air and continue the exercise.

Practising for 20 minutes first thing in the morning is an excellent way to reverse any heavy breathing from the night before. Repeat again at least once during the day and last thing at night to steadily increase your CP and reduce breathing volume. Reducing your breathing before bed will also ensure calm, restful sleep and good energy levels when you wake in the morning. If you are able to schedule it into your routine, another option which works very well is to practise reduced breathing for 10 minutes every hour.

While practising **Exercise 2**, try to maintain a feeling of air shortage for the whole 4 minutes. Stay relaxed and approach the exercise gradually – there's no point in drastically reducing your breathing for the first 30 seconds and then breathing heavily for the remaining three and a half minutes!

When you are competent at these exercises, they can be performed anywhere!

Remember: The more often you practise reducing your breathing the better. You can perform **Exercise 2** while in school or at work, watching TV, reading a book, or during any activity where you can comfortably sustain an air shortage.

Exercise 3: Getting the most from physical exercise

In my experience, people who partake in regular physical exercise have better control of their breathing than those who don't. This section is all about exercising safely and getting the maximum benefit.

Nasal breathing during exercise

When you habitually breathe through your mouth, your Control Pause measurement will be low. If your CP is less than 20 seconds you should aim to breathe through your nose both day and night, and especially when engaging in low-intensity exercise. Constant nasal breathing and the regular practice of gentle breath hold exercises will increase your CP and reduce breathing volume. When your CP is greater than 20 seconds you can safely breathe through your mouth for short periods of time during sports and exercise, if necessary.

Initially, maintaining nasal breathing during exercise might feel impossible due to the ingrained habit of mouth breathing, but with a little practice it is easy to master. At first you might find that you are not able to walk as fast as you can with your mouth open due to a greater feeling of breathlessness. However, in a few days, as your CP increases, this feeling will pass and your performance will steadily improve.

Breathing volume naturally increases during exercise. This is not a problem when there is a reasonable match between breathing volume and metabolic requirements,

but the lower your CP, the poorer the match. When your CP measurement is low, you are at a greater risk of experiencing exercise-induced symptoms and must take it slowly until your CP starts to lengthen.

If your CP is less than 20 seconds – nasal-breathe only.
If your CP is greater than 20 seconds – you can mouth-breathe during exercise for short periods.

Feel the need for air

To reap the most benefit from physical activity, you need to create a need for air. This feeling of breathlessness should always stay within your control, and is a positive result of reducing your breathing – it should not be the same breathlessness experienced when your breathing is out of control.

When your CP is low it is very easy to disrupt your breathing so be careful; go gently and don't push yourself to a point where you cannot relax your breathing. At the same time, try to create a tolerable need for air so that you will continue to progress with your reduced breathing programme.

There are three ways to create a need for air using exercise:

- 1.** Go faster with your mouth closed
- 2.** Breathe less during physical exercise
- 3.** Practise breath holds as described in

Exercise 4

If your need for air is too much and you need to open your mouth to breathe during exercise, slow down and calm your breathing. If you keep your mouth closed, you will recover faster.

How to determine if you are breathing correctly during physical exercise:

- » Measure your CP before exercise;
- » Warm up gently for 10 minutes using breath holds;
- » Perform physical exercise;
- » Measure your CP 30 minutes to one hour after you have completed physical exercise. Your final CP measurement should be greater than your CP measurement before exercise.

There are two points to bear in mind when measuring your CP before and after exercise:

- 1.** If your CP is measured immediately after physical exercise it will probably be lower than your starting CP due to the build-up of an air shortage.
- 2.** If after 30 minutes to one hour following physical exercise your CP is still lower than your starting CP, it means you were breathing excessively during exercise.

CP and sports

If you were to line up a sports team and measure each member's CP, you would find that those with a lower CP measurement would tire and become breathless more easily, produce more lactic acid, and would not have the stamina of those with higher CP scores. The higher the CP, the less air is required to run a specific distance at a given pace. With each five second increase of the CP, physical performance will improve.

For any sports coaches reading this, try introducing the Control Pause into training as a simple way of measuring the performance of individual players. To increase performance, increase CP through reduced breathing exercises and nasal breathing.

For a programme specially formulated for athletes which simulates high-altitude training in order to attain maximum sports performance; visit OxygenAdvantage.com.

The higher your CP, the greater your efficiency during sports.

The lower your CP, the poorer your efficiency during sports.

Exercise 4: Breath holds during exercise

This exercise involves holding your breath on the exhalation during physical activity. You can do this while walking, skipping, using a trampoline, cycling, or whichever exercise you prefer.



The Jumps

This is a very effective exercise and should be used in conjunction with nasal breathing during the day, keeping your breathing reduced, calm and gentle. The length of each breath hold will depend on the state of your health and CP.

Caution: If you have any of the conditions listed on pages 28 & 29 then it is better to avoid **Exercise 4**. Instead, practise **Exercise 6** (Many small breath holds), **Exercise 2** (Reduced breathing) and **walking with mouth closed**.

Before you begin Exercise 4, measure your CP:

- » If your CP is less than 10 seconds, you will not need to hold your breath to create an air shortage as physical exercise alone will be sufficient;
- » If your CP is between 10 and 15 seconds, the length of each breath hold should be short (see illustration below);
- » If your CP is greater than 15 seconds and you do not have any conditions listed on pages 28 & 29 then the length of your breath hold may vary to achieve a medium to strong air hunger.

Physical exercise with short breath holds:

(Suitable for people with a relatively low CP)



- » While walking, take a small breath in, breathe out and hold your breath (either by pinching your nose or closing the muscles of your throat);
- » Walk 5-20 paces while maintaining the breath hold;
- » Resume relaxed nasal breathing and continue to walk;
- » After 30-60 seconds of walking with nasal breathing, repeat the breath hold;
- » Repeat this sequence six to eight times with a small breath hold every 30-60 seconds;
- » Maintain control of your breathing throughout.

Physical exercise with medium to strong breath holds:

(If you have any condition as listed on pages 28 & 29 or a CP of less than 15 seconds then please refrain from this exercise.)



- » While walking, take a breath in, breathe out and hold your breath (either by pinching your nose or closing the muscles of your throat);
- » Walk 20-100 paces while maintaining the breath hold. Create a strong need for air but do not lose control of your breathing;
- » Resume relaxed nasal breathing and continue to walk;
- » After about one minute of walking with nasal breathing, repeat the breath hold;
- » Repeat this sequence six to eight times with a breath hold every minute or so;
- » Maintain control of your breathing throughout.

Creating a large air shortage is the best way to move your CP from 20 to 40 seconds.

Remember: It is important that your breathing is under control at all times while holding the breath during physical movements.

You don't have to be walking to perform this exercise. You can practise breath holds during any physical exercise of your choosing. Some footballers hold their breath during training or while sprinting – holding the breath for just a few steps can create a strong air shortage that benefits performance and body oxygenation.

Whether you cycle, play golf, lift weights or jog, you can incorporate breath holds into your exercise. I have even seen this exercise used to good effect by carpenters, bricklayers, painters, plasterers, bar staff, and gardeners – breath holds can be used by anyone who is active as part of their job.

So long as your breathing is under control, you may practise between six to eighteen breath holds throughout the day. Larger breath holds reset the respiratory centre to encourage a lower breathing volume and can help to increase a stubborn CP.

For Children and Teenagers

The factors that lead to excessive breathing in children and teenagers generally include over-eating, lack of physical exercise, wearing too many clothes or spending time in stuffy environments. Children under five years of age will find it difficult to perform breathing exercises, so it is important for parents to take preventative action to avoid the factors that contribute to over-breathing. It can be helpful to monitor the breathing of younger children after eating a meal or a particular food you suspect may be triggering over-breathing, such as dairy or wheat. Avoid overdressing your child and keep the temperature in your house cool and well-ventilated. Encourage your child to play outside and to do as much physical activity as possible while breathing through their nose.

Children always mirror their parents, even in the way they breathe. If Dad is walking around the house with his mouth open, puffing and panting and being unobservant of his breathing, then the child will do likewise. Addressing dysfunctional breathing is a family affair and will be beneficial for everyone involved. Teaching the child to do one thing while everybody else in the house continues with their own bad habits will not help the child. The only way to ensure success with breath re-training is to lead by example.

It is important for your child to understand the concept of breathing too much and how it causes them to wheeze, cough, feel tired and have a stuffy nose. The best way to explain 'big breathing' is to show the child a physical demonstration. Ask your child to hold out a finger and blow a large puff of air onto it. Let them feel the force and quantity of air on their finger and explain that this is big breathing. Next, blow a tiny amount of air onto their finger, so lightly they can barely feel it, and explain to them that this is correct breathing. Have your child explain the concept of good breathing to other people in your household – by doing so, the child will spend time reflecting on their breathing methods, and their storytelling will indicate to you whether they have understood the theory.

Motivating Children

An integral part of helping children and teenagers to change their breathing habits is to explain why it is so important to breathe through the nose. For example, nasal breathing will improve sleep, concentration and sports performance, help to avoid bad breath, and ensure normal development of the face. When I work with children and teens I ask them which reasons they consider to be most important for breathing through the nose. The most popular replies tend to be improvements to athleticism and the development of a good looking face. However, it's imperative not to highlight the negative

features of mouth-breathing – such as set-back jaws or a narrow face – instead, reassure your child of the many benefits of reduced nasal breathing on their health, and ensure they hold onto their beautiful faces.

Children sometimes find it difficult to understand the concept of reduced breathing exercises, so a slightly different approach needs to be used. Teaching children the Buteyko Method through stories is an excellent way to ensure they remember the technique. The following story of the cat and mouse can be used as a reminder for children to reduce their breathing whenever you notice that they are breathing heavily and noticeably. Sit with your child somewhere quiet and ask them to relax and drop their shoulders. Next, ask them to pretend they are a little mouse, while you are a big, hungry cat. The cat has very good hearing and is listening carefully for the breathing of the mouse. The child must breathe very quietly, otherwise the cat will chase them. If the cat cannot hear their breathing then they are safe.

The following two exercises are excellent ways to help children learn to reduce their breathing:

Mouse Breathing

Using the cat and mouse story detailed above, instruct your child to:

- » Sit down with their back straight. Relax and become as soft and wobbly as jelly;
- » Place a finger under their nose to monitor air flow;
- » Breathe so gently that they cannot hear their breathing and have no movement from their chest and tummy;
- » The reduction in breathing will create a feeling of air shortage, and your child will experience an urge to take big breaths. Encourage them to keep their breathing soft so the cat does not hear them, maintaining the air shortage for the duration of the exercise;
- » Perform the exercise for several sets of 1-2 minutes.

Exercise 5: Steps exercise for children and healthy adults

Children often make great progress with the Steps exercise – in many cases exceeding their parents' scores! The Steps exercise can also be used as a helpful measurement of progress if the child has difficulty in applying the Control Pause correctly. Steps combines muscle activity (which increases carbon dioxide levels) with breath holding (which allows both carbon dioxide and nitric oxide to accumulate in the body).

To perform Steps, instruct your child to:

- » Take a gentle breath in;
- » Allow a gentle breath out and pinch the nose to hold the breath;
- » Walk as many steps as they can until they feel a relatively strong urge to breathe. Count the steps and see if they can beat their previous score each time;
- » When they breathe in, it must be through their nose and their breathing must be calmed immediately;
- » The first breath following the exercise will usually be bigger than normal. Make sure your child reduces or suppresses the second and third breaths to keep their breathing gentle. You can also combine this exercise with the cat and mouse story, reminding them to breathe like a little mouse when they stop so that the big cat cannot hear them.

The Steps exercise should be performed in sets of six and practised two to three times per day. Count the steps aloud and record your child's score so that their progress can be monitored from day to day. Compare each week's Steps with the previous scores to evaluate improvement and encourage your child to increase the amount of steps they take. The goal is for your child to be able to walk 80- 100 steps without having to take a breath. The Steps exercise can also be incorporated into other activities such as skipping or running.

Be observant of your child's breathing during the day. If at any time you can hear your child breathing, or see them breathing with their mouth open, remind them to breathe gently through their nose. Ensure that your child does not let any air sneak in through the mouth – this too can be made into a game, telling off the 'sneaky' air for trying to get in, and reinforcing the importance of keeping the mouth closed.

Everyone knows children can have short attention spans, so if your child becomes bored with practising the exercises detailed above, you can replace Steps with breath-holding while playing hopscotch, performing jumping jacks, or jumping on a trampoline.

Beginners' Steps

Very young children can be introduced to the Steps exercise by asking them to hold their breath and walk a short distance of five paces or so. Having another adult or an older sibling to help can be useful here, with one of you standing at either end of the walking distance so that the child can walk back and forth from one to the other.

Adult one ← Distance of five paces → Adult two

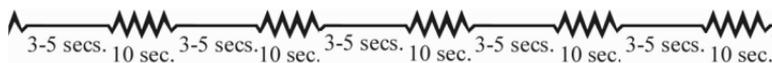
You may wish to place a piece of paper tape across your child's lips before they begin the exercise to ensure that they don't breathe through their mouth. As detailed above, the child should breathe in and out gently through the nose, then pinch the nose to hold the breath while walking five paces to the second helper. When they reach the other side they can release their nose and resume gentle nasal breathing. Wait 30 to 60 seconds before repeating the exercise.

When you have established that your child is able to hold their breath over a short distance, you can gradually increase the amount of steps. You can do this by either increasing the distance between the two helpers, or keeping the five-pace distance and have your child walk back and forth an increasing number of times before releasing the breath.

Exercise 6: Many Small Breath Holds to stop anxiety, asthma or panic attack

**(A free video of this section is available at
www.ButeykoDVD.com)**

This exercise is suitable for everybody, especially older people and those with severe asthma, emphysema, panic attacks, or stress. It produces results similar to the old brown paper bag technique but is a lot safer since oxygen levels are maintained throughout.



Perform many small breath holds of 3-5 seconds each:

- » Take a small breath in, breathe out and hold your breath by pinching your nose;
- » Hold your breath for 3-5 seconds only. Do not try to hold your breath for longer than this as it will increase your breathing and may aggravate symptoms;
- » For this exercise, your maximum breath hold should be no greater than half your Control Pause measurement (for example, if your CP is 4 seconds, then only hold your breath for 2 seconds);
- » After each breath hold, breathe normally for 10-15 seconds. Don't try to interfere with your breathing;

- » Continue to do a small breath hold followed by gentle breathing for 10-15 seconds until symptoms have reduced.

Generally, an asthma attack or period of breathing difficulty will not occur without advanced notice. In most situations you will start to feel a gradual tightness of the airways, a blocked nose, or the beginnings of a wheeze. When you feel the first symptoms of an asthma or panic attack, it is very helpful to practise Many Small Breath Holds straight away to prevent your symptoms worsening.

**VERY IMPORTANT: TAKE
MEDICATION IF YOU NEED IT!**

Breathing exercises will only alleviate asthma or panic attack when applied during the early stages of symptoms. If an attack has been occurring for more than five minutes it will be difficult to control using breathing exercises, especially if your normal CP is less than 20 seconds.

After five minutes of an asthma attack, take your medication. (If you are having a severe attack, take your medication immediately!) If your symptoms do not respond to your medication within five minutes, seek medical attention.

It's important to note that the exercises in this book are meant to be used in conjunction with your normal day-to-day treatment. If you have asthma, make sure to continue your preventative asthma medication and take relievers when necessary. In time, with continued nasal breathing and the practice of reduced breathing exercises, you should find that you rely less and less on medication.

Many Small Breath Holds can also be practised hundreds of times per day. If for any reason you are unable to formally practise reduced breathing exercises, then you can incorporate many breath holds into your day. This will allow you to experience the benefits of nasal nitric oxide as well as temporarily increasing carbon dioxide. If you are doing this without any other breathing exercises, it is necessary to perform 100 to 500 breath holds per day to receive the same benefits.

CHAPTER 3

Lifestyle Factors

Getting a great night's sleep

A low CP corresponds to a large breathing volume and will result in many of the sleep-disordered breathing symptoms below. How many do you experience?

- » Snoring
- » Sleep apnea
- » Disrupted sleep
- » Insomnia
- » Nightmares
- » Night time asthma symptoms (3-5am)
- » Needing to use the bathroom at around 6am
- » Bedwetting in children
- » Fatigue first thing in the morning
- » Dry mouth
- » Symptoms upon waking, such as wheezing, coughing, breathlessness or a blocked nose

Breathing through the nose during sleep will also help to reduce snoring and obstructive sleep apnea. Severe snoring can be extremely disruptive to sleep for both

snorer and their sleeping partners. Snoring occurs due to a large volume of air passing through a narrow space, causing turbulence in the soft palate, nose or back of the throat. There are two factors in play here: the first is that the individual is breathing too noisily and heavily during sleep; the second is that their nose may be congested, causing narrowing of the upper airways.

Many studies have highlighted the relationship between nasal obstruction, mouth breathing, snoring and sleep apnea, and for decades the Buteyko Method has been successfully implemented to reduce and eliminate these symptoms.¹⁻⁶ Simply by unblocking the nose, switching to nasal breathing and reducing breathing volume, snoring and sleep apnea can be greatly improved.



**Sleeping on left side with
closed mouth**

**For a great night's sleep,
try the following suggestions:**

- 1.** Practise reduced breathing for 15 minutes before sleep (you can do this while watching some light television or relaxing in bed). Place one hand on your chest and one hand on your tummy. Gently soften your breathing to create a slight need for air. Continue with this exercise for a period of approximately 15 minutes. Not only is it an excellent way to help with sleep-disordered breathing, it also helps you relax and fall asleep easier;
- 2.** Avoid having a large meal or drinking alcohol late at night. Although alcohol can send you off to sleep quicker, it results in poor quality sleep and waking in the middle of the night. Eating too late at night creates similar problems as the body spends considerable energy digesting food while in a state of semi relaxation;
- 3.** It is vital to breathe through your nose during sleep. You can tell if you have been breathing through your mouth at night as you will wake up with a dry mouth (and most likely smelly breath – mouth breathers have a higher level of gum disease and teeth cavities than nasal breathers!). Your mouth should be naturally moist when you wake up in the morning; nasal breathing ensures this. If you have a tendency to mouth-breathe during the night it

is important to apply the guidelines on taping the mouth below. You will experience a better night's sleep and feel more refreshed when you awake in the morning.

- 4.** Taping the mouth at night initially may seem like a scary prospect but it has been used to great success in Buteyko Breathing clinics around the world and does not take long to acclimatise to. If you struggle to keep your mouth closed at night, placing a short length of micropore tape across your mouth before you go to sleep is an excellent way to eliminate sleep disordered breathing and encourage permanent nasal breathing. I have no doubt that the single best thing I ever did to improve my sleep was to tape my mouth at night.

Micropore tape can be purchased from most drugstores or pharmacies (a good choice is 3M one-inch tape). Tear off about 10 centimetres (approx 6 inches), fold over a small tab either end to make removal of the tape easier, and place horizontally across the lips before you go to sleep. To overcome any initial anxiety about having your mouth taped, try wearing the tape for 20 minutes while getting ready for bed. It's likely that the tape will fall off during the first couple of nights if you're used to breathing through your mouth. However, within a few days, the tape will remain in place as your body re-learns to nasal breathe at night. It may

well be the best night sleep that you have ever experienced.

Please note: this method is not suitable for children under five-years-old. Any child taping their mouth at night must be able to remove the tape if they feel the need to. If during the night you find it difficult to breathe while using the tape then gently reduce your breathing until you feel comfortable. Try not to remove the tape, as you will likely revert to mouth-breathing during sleep which will only make your symptoms worse. **Important: do not use tape at night if you are feeling nauseous or have been drinking alcohol.**

5. If your nose is partially blocked before going to bed then first clear your nose using the nose unblocking exercise. If you are wearing tape at night, your nose will never become completely blocked. This is because nasal breathing will help to dilate the nasal passages. However, if you breathe heavily during the night while wearing the tape, your nose may partially block. You may also find it helpful to wear an anti-snoring strip on your nose at night (Breathe Right is a popular brand that is widely available in chemists and supermarkets). Anti-snoring strips can be purchased at most pharmacies and are very helpful to reduce nasal obstruction. A plastic strip is placed on the outer part of the nose

to dilate the nasal passages and alleviate snoring. However, these strips are only a temporary measure. In time, if you follow the breathing exercises and techniques above, as your nasal congestion reduces you will no longer require them. Remember: your nose will only become completely blocked when you switch to mouth breathing.

- 6.** To measure whether you are over-breathing during the night, measure your Control Pause before you go to bed and again when you wake in the morning. If your Control Pause is lower upon waking than the night before it means you have been big breathing during sleep.
- 7.** If you regularly wake up with breathing difficulties during the night it is advisable to sleep in an upright position and set an alarm clock to wake you every few hours. Waking regularly will prevent you falling into a deep sleep while your breathing is uncontrollable. When you wake to the alarm, measure your Control Pause and perform gentle shallow breathing exercises. Only go back to sleep when your breathing is better under control. This can be determined by your CP and by how you feel.

Foods that help, foods that hurt

A link has also been established between **processed foods** and over-breathing, although the reason why is not yet fully understood. In a book entitled *Nutrition and Physical Degeneration*, written over eighty years ago by Dr Weston Price, I was intrigued to read that when the Gaelic people living on the Hebrides off the coast of Scotland changed from their traditional diet of seafood and oatmeal to a modernised diet of 'white bread and many white flour commodities, marmalade, canned vegetables, sweetened fruit juices, jams, and confections', first-generation children became mouth-breathers, and their immunity to the diseases of civilisation reduced dramatically. Following the change to a modern Western diet, a drastic change in breathing habits took place within just one generation. It is very likely that the consumption of processed foods caused the nose to become congested, and the resultant feeling of not taking in enough air led to children breathing through their mouths, instead. Within a few weeks or months, the habit of over-breathing would have been established. Today, mouth-breathing is endemic across the Western world, and experts suggest that around 55% of children habitually breathe through the mouth.

Dr KP Buteyko guidelines on diet:

- » Only eat when you feel hungry. Your body will tell you when it is time to eat. If you don't feel hungry, then you do not need to eat. If you eat when you are not hungry, your body uses energy to process food it does not need, increasing your breathing. Get out of the habit of eating simply because you are used to eating meals at a certain time of day. Listen to your body and stop when you are full. Contrary to what your parents might have told you, you don't have to finish everything on your plate;
- » Increase your vegetable intake. Nutritionist and author Patrick Holford advises dividing your main meal into the following proportions: 50% vegetables, 25% meat and 25% starch, such as potatoes or rice;
- » Fresh food is best. Some foods are harvested twelve months before they are consumed, and the amount of nutrition in these foods is substantially lower than if the food was eaten straight after harvesting;
- » Cooked food increases breathing more than raw food. This is likely to be reason behind the growing interest in raw food as a therapeutic intervention over the past decade;
- » Avoid eating heavy meals before going to bed as it will increase breathing during the night, disrupt your sleep, and lead to weight gain;

- » Limit stimulants such as sugar, coffee and black tea;
- » Add sea salt to cooking – it provides an excellent source of magnesium and other natural minerals;
- » Drink plenty of water. Water makes up over 70% of your body and is the single most important constituent of your diet. You lose water each day through perspiration, breathing and the elimination of waste, and it is vital to replenish water loss. Dehydration raises histamine levels, causing inflammation and swelling of the airway walls, which contribute to over-breathing. The colour of your urine is probably the best indicator of whether you are sufficiently hydrated. Urine should be light in colour; dark urine indicates dehydration while clear urine indicates drinking too much. To help reduce water loss, breathe only through your nose – one of the functions of the nose is to trap moisture carried in the air we exhale.

Stress and Breathing

Many vital functions of the human body operate on an unconscious level; you don't need to tell your heart to beat or your lungs to take in air, your body takes care of it for you. These basic functions are the responsibility of the autonomic nervous system (ANS) which controls heart rate, digestion, respiratory rate, salivation, perspiration, pupillary dilation, urination, and sexual arousal. Most autonomous functions are involuntary, but some are also under some degree of conscious control, such as breathing, swallowing and sexual arousal.

The ANS is classically divided into two subsystems, known as the parasympathetic nervous system (PSNS), which is responsible for rest and relaxation, and the sympathetic nervous system (SNS), which is responsible for stress responses.

Throughout human evolution, we have relied on our immediate bodily responses whenever we are confronted with danger – whether it's fleeing from a charging elephant, panicking about an interview, or being dragged up by your friends to sing karaoke in public. Known as the fight or flight response, this automatic reaction of the sympathetic nervous system was first described by American doctor Walter Bradford Cannon, who lived from 1871 to 1945. Cannon noted that a perceived threat aroused the SNS and resulted in certain physical reactions, including an increase in blood pressure and rate of breathing, and a release of adrenaline to help us run faster or fight harder.

In prehistoric times, when confronted by a predator, immediate and intense physical exercise would have

been required to fight it or run from it. In this situation, the stress was short term, lasting just a few minutes. Once out of danger, breathing and heart rate would quickly normalise, allowing operating systems to revert to regular function.

Today's stresses are different in a number of ways. Firstly, they are not usually accompanied by physical exercise, which is required to help the body's operating systems revert to normal. Secondly, and more importantly, modern stresses often last longer, or are spread over a prolonged period of time. Modern life includes a myriad of worries and anxieties – finances, relationships, work, sometimes all three combined – and this constant state of stress can have serious implications on a person's health.

Humans are well-adapted to cope with short term stresses, but long term stress, in my opinion, exerts more harm on the body than anything else. You can probably get away with eating a relatively poor diet, or doing very little physical exercise, for as long as twenty years, but twenty years of stress will almost certainly make you ill. My own father exercised regularly, ate a good diet, didn't smoke, and drank very little alcohol throughout his life. He was, however, a worrying man, and I am in no doubt that his stress levels caused his early passing at the age of sixty-four years.

The most damaging of long term stress symptoms is habitual over-breathing. Increased breathing is a perfectly normal response to temporary stress as a rise in heart rate and breathing rate are necessary to prepare the body for a potentially sudden burst of action. But

this natural response becomes abnormal when stress is sustained over the long term and breathing volume does not have an opportunity to normalise. As a result, the habit of breathing a volume of air greater than the body requires is developed, causing levels of carbon dioxide in the blood to lower. Too little carbon dioxide in the blood limits blood flow, reducing oxygenation of the heart and brain. It's somewhat ironic that the brain receives less oxygen during the very time when alertness and mental concentration are acutely required, but this is exactly why it's so difficult to think clearly under stress – how can a brain that is deprived of oxygen be expected to work properly?

The first accounts of the effects of stress on breathing were documented during the 1870s by military doctor De Costa after he observed an array of symptoms amongst soldiers returning from the front line. These soldiers had endured heavy stress over many months which altered their breathing habits and caused a biochemical change, resulting in symptoms such as:

- » Fatigue upon exertion
- » Breathlessness
- » Palpitations
- » Excessive sweating
- » Chest pain

Even when the soldiers returned to civilian life they faced a long and arduous process to regain their health. In 1937, scientists Kerr and colleagues coined the term *hyperventilation syndrome* to describe the main cause of these symptoms. In other words: over-breathing.

When working with clients, I often ask them how their breathing changes when they are stressed. The response is almost always the same: breathing becomes faster and more noticeable. I then ask the client to take a deep breath, to which they respond with a quick breath, often through the mouth, and with obvious movement from the upper chest. Finally, I ask them how they would feel if they continued to breathe that way. Invariably, the response is that they would begin to feel light headed or dizzy. Stress causes us to breathe more, so taking a deep breath to calm yourself down just doesn't make any sense, and only serves to keep you in a continued state of stress. Instead, the opposite is needed – slow, quiet, calm breathing that allows blood gases and operating systems to restore to normal. The following responses will give you an idea of the correct way to deal with symptom of stress:

Stress Activation

Breathing becomes faster

More frequent sighing

Breathing from the upper chest

Breathing through the mouth

Breathing becomes more noticeable

Breathing becomes erratic

Relaxation Activation

Slow down breathing

Suppress sighs if possible

Breathe from the tummy

Breathe through the nose

Quieten and silence breathing

Take slow, gentle, calm, quiet breaths

Correct breathing during talking

Speaking for prolonged periods of time leads to over-breathing. Anyone who works in a profession where talking is a necessity (for example: sales or teaching) should pay particular attention to the link between talking and breathing volume.

Research has shown that excessive talking can increase breathing volume, and many minutes' rest may be required for carbon dioxide levels to be restored.⁷ Speaking for long periods of time dries the airways, leading to irritation, excess mucus production, nasal blockage, dehydration, coughing and fatigue. If your occupation involves a lot of talking, it is important to learn to breathe through the nose as much as possible and follow these guidelines:

- » If you talk a lot during your workday, make sure you set aside some 'quiet time' to conserve and restore carbon dioxide levels;
- » Try to avoid breathing through your mouth before speaking. Initially this will be a little difficult as you will no doubt be in the habit of taking a big breath before starting to talk, and it can take some extra effort to pay attention to what you are about to say as well as observing your breathing. You can practise by reciting the alphabet in front of a mirror, making sure to only breathe through your nose every time you need to pause. In fact, you may find

you become more succinct as the calming influence of nasal breathing helps you to choose your words carefully!

- » Shorten your sentences. Long-winded sentences result in large exhalations of carbon dioxide. Instead, shorten your sentences, or pause mid-sentence to breathe through your nose;
- » Pay attention to the bad breathing habits of other people. Listen to other people on the phone or in general conversation, and notice the way they take large, sharp inhalations prior to talking. This preparatory breath alone can be enough to maintain low carbon dioxide levels;
- » Most people with asthma are aware that laughing can bring on an attack of hyperventilation. Laughter involves big inhalations and exhalations, causing a substantial decrease in carbon dioxide. If you find yourself in a fit of laughter, be conscious of your breathing and try to reduce the size of your breaths.

CHAPTER 4

Tailoring Buteyko to Your Needs

The course of action best suited to you will depend on the present state of your health, your CP and which exercises you prefer. See which of the following suggested programmes suit your needs and preferences, according to your age, health and CP.

Programme for older person, low control pause or unwell:

- » Nasal-breathe both day and night;
- » If you suffer from symptoms at night, try sleeping in an upright position;
- » Try to keep your breathing calm at all times;
- » Avoid excessive talking or other activities that will increase breathing;
- » Eat food in small quantities;
- » Never push yourself beyond the point where you are unable to control your breathing during physical activity. For example, when getting out of bed, roll over very gently and slowly sit up before getting to your feet. While climbing the stairs, take it one step at a time and rest as often as necessary;

- » Practise **Exercise 2 (Reduced Breathing)** and/or **Exercise 6 (Many Small Breath Holds)** for 10 minutes every hour. Choose whichever exercise is most suited to you. If you choose **Exercise 2**, ensure that you create a gentle air shortage for the duration of the exercise. Practising **Exercise 2** or **6** for 10 minutes every hour will guarantee a significant reduction of symptoms and allow you to progress;
- » Take a gentle walk each day while breathing through your nose;
- » Set an alarm clock to break your sleep every 2-3 hours. Continuous heavy breathing over a 6-7 hour period of sleep will maintain a low CP. By waking several times during the night and practising **Exercise 6** to get your breathing under control, you will help your CP to increase and enjoy better quality of sleep.

Programme for high blood pressure, panic attack, sleep apnea and anxiety:

- » Breathe through your nose both day and night;
- » Spend six by ten minutes daily doing any of the following;
- » **Exercise 2:** Reduced Breathing with relaxation (sleep disordered breathing- 15 minutes before sleep). For persons prone to panic attack, reduced breathing creates an air hunger similar to that experienced during an attack. Therefore, it is important to gently condition your body to the air hunger. For the first week, practise reducing your breathing for periods of between 30 seconds and two minutes. In time, as you become more comfortable with the feeling of air hunger, the duration of practise can be increased.
- » **Exercise 3:** Walking with mouth closed;
- » **Exercise 6:** Many Small Breath Holds to stop anxiety, asthma or panic attack.

Programme for children and teenagers:

- » Use the nose unblocking exercise (**Exercise 1**) if your nose gets blocked;
- » Breathe through your nose at all times;
- » Use **Exercise 6 (Many Small Breath Holds)** when wheezy or coughing;
- » When you have no symptoms, practise at least 18 repetitions of **Steps** each day (for example, 6 before breakfast, 6 during the day and 6 before bed);
- » Keep a record of your **Steps** score and try to increase it by 10 paces each week;
- » Become familiar with the concept of reduced breathing and ensure that your breathing is quiet day and night;
- » Perform breath holds during exercise (**Exercise 4**).

Their **Steps** score should increase by 10 paces every week, with a goal of reaching and maintaining a score of 80-100 paces. When a child can do 80-100 paces during **Steps**, they should continue to practise enough repetitions to maintain this figure. For example, after a few weeks the child might be able to maintain 100 paces with just 3 repetitions of **Steps** each day.

Here is an example of a child's likely progress with **Steps**:

Week 1: 26 steps

Week 2: 35 steps

Week 3: 47 steps

Week 4: 60 steps

Week 5: 69 steps

Week 6: 80 steps

Week 7: 80 steps

Week 8: 70 steps

Week 9: 80 steps

Week 10: 100 steps

It is relatively easy to maintain a high **Steps** score after it has been reached. Success will depend on your child's awareness of their breathing. If your child is not very observant of their breathing and frequently sighs, has noisy breathing, mouth-breathes or demonstrates large breathing movements throughout the day, their **Steps** score will be slow to increase. In this situation it may help to regularly remind the child to 'ABC' (Always Breathe Correctly).

If you notice that your child's **Steps** score is decreasing it is necessary to spend more time practising the exercise each day. Remember that any time the **Steps** score drops below 60, symptoms will return.

It can also be helpful to perform breath holds during exercise. For example, the child can practise breath holds while walking, bouncing on a trampoline, running, riding a horse, or whatever physical exercise they like. While doing exercise, the child should try to hold their breath for as long as possible without being stressed. At the end of the breath hold, breathing should be calmed as soon as possible.

If you are unable to explain the concept of reduced breathing and **Steps** to your child, my book 'Buteyko Meets Dr Mew' is a very useful aid in teaching children and teenagers alike the breathing exercises through full colour comic book storytelling.

Programme for busy adults:

- » Practise reducing your breathing from the moment you wake up in the morning to when you go to bed at night – before you get up or go to sleep, spend a few minutes lying in bed creating a need for air;
- » While you are in the shower or getting ready for work, hold your breath on the out breath and build up a good need for air;
- » While you walk to work or take your children to school, perform breath holds along the way;
- » If you walk or perform physical activity as part of your work day then practise both small and large breath holds while you move;
- » Go for a 20 minute walk during your lunch break. Perform repeated breath holds throughout the walk;
- » Practise 10 - 20 repetitions of **Steps** daily (providing you have none of the conditions listed on pages 28 & 29);
- » When you return from work, practise reducing your breathing while watching TV, cooking, or relaxing in the evening;
- » Ideally, aim to spend a cumulative 60 minutes per day reducing your breathing and practising the various breathing exercises.

By continually bringing your attention to your breathing throughout the day, you should expect your CP to increase by an extra 4 seconds each week. If your CP is not increasing from week to week, then pay more attention to your breathing or set aside specific times each day to practise exercises

A number of years ago I met a carpenter at one of my workshops who believed he was too busy to fit breathing exercises into his day. I suggested that he reduce his breathing while he drove to and from work, breathe through his nose at all times, and practise breath holds as he moved about the building site, whether he was climbing scaffolding or cutting timber. Furthermore, I asked him to reduce his breathing while he was watching TV in the evening and whenever he thought of it throughout the day.

When he returned to the workshop one week later, his CP had almost doubled from 12 to 23 seconds and his persistent cough had disappeared.

How much progress to expect?

The benefits you receive will depend on what you put in. Progress is determined by the observance of your breathing throughout the day. The more attention you apply to correcting your breathing and increasing your CP, the better your progress will be.

There are only two ways to increase your CP:

- » Reduce your breathing
- » Increase your physical activity (going carefully if your CP is low)

If you stick to the guidelines above you should find you make great progress over the first few weeks, interspersed with good days and bad days.

- » While you can achieve quick results with this approach, it is not a miracle cure. The symptoms you experience will depend on your CP. As long as you understand the concept of healthy volume breathing and focus on applying it daily, your CP should increase by 3-4 seconds during the first couple of weeks of your reduced breathing programme. After that, progress will continue at a slightly slower pace. Physical exercise can be gradually introduced to increase the CP above 20 seconds.

The degree of symptoms you experience is proportionate to your CP. As your CP increases, you will feel better, so don't lose heart if you continue to have symptoms during the first few weeks. This is inevitable so long as your CP remains low. Continue with reduced breathing exercises and remember to close your mouth and breathe through your nose at all times.

After following the programme for several weeks, or when your CP increases to 20 seconds, you may reach a plateau where there seems to be no further improvement to your condition or your CP. This can happen regardless of the amount of time you spend at reduced breathing exercises. The best way to increase your CP from 20 to 40 seconds is to take up regular

physical exercise. If your Control Pause is stubborn, you can also try reducing your consumption of processed and rich foods like red meat and dairy. This too will help to increase your CP more quickly.

Very occasionally I see a patient who tells me that although they are reducing their breathing, they are still not making any progress – their CP refuses to increase and they have found no improvements to their health. In the vast majority of people, once I have observed the patient in person, I can immediately see the problem. Their breathing is heavy and noticeable even as they sit and talk, and they are usually not even aware of it. As soon as they become committed to making the switch to nasal breathing and focus on reducing breathing volume throughout the day, surely enough their CP begins to increase. Try to be aware of your breathing at all times or your progress will be minimal. After a little practice, gentle nasal breathing will become second nature and your breathing volume will reset to healthy, normal levels.

Will Buteyko Breathing work for everyone?

Anyone who understands the concept of chronic hyperventilation and makes a commitment to address their breathing habits will make progress. I have received emails from people around the world who are excited to tell me about the progress they've made

using the exercises and instruction from the books and clinics. Often these students have battled with poor health their whole life, relying ever more heavily on medication to keep their symptoms at bay, and are elated to experience life without the fear of symptoms. Discovering the Buteyko Breathing Method changed my life and freed me from the detrimental and limiting symptoms of over-breathing – it can do the same for you.

By correcting your breathing volume, all organs and tissues, including your brain will receive greater oxygenation once you break the habit of over-breathing. As you learn to breathe less, your energy levels will increase, you will feel calmer, you will sleep better, your concentration will sharpen, and your ability to perform physical exercise will improve.

We all depend on feeling well and energetic to get the most out of life. Having a low CP puts you in a state of 'half living', resulting in a host of symptoms which lower your quality of life, including fatigue, snoring, sleep apnea, headaches, stress, coughing, wheezing, breathlessness, poor concentration and anxiety, not to mention the effect of chronic hyperventilation on more serious conditions such as high blood pressure, and cardiovascular disease. Learning how to breathe better will not only improve your quality of life – it may quite literally save your life.

Conclusion

By applying the information from this manual, you have taken the first step towards changing your breathing and improving your health forever. Be patient; altering the breathing habits of a lifetime will take time, commitment and determination, so stay positive and persevere.

I am always delighted when this manual is lent to friends, family and acquaintances, so please share it with anyone you think may benefit from the techniques. And in order to spread the word further and help others benefit from the Buteyko Breathing Method, I would appreciate it greatly if you took a few minutes to write a review on Amazon.com or Amazon.co.uk.

Best wishes

Patrick McKeown
Galway, Ireland

APPENDIXES

Appendix 1: International Buteyko Clinics

Visit www.ButeykoClinic.com for a worldwide list of Buteyko practitioners in Europe, North America, and Asia, as well as practitioner training information and videos of Dr Buteyko.

Visit www.ButeykoDVD.com for more information on books, DVDs and online courses by Patrick McKeown, along with free online videos demonstrating Buteyko techniques.

Visit www.ButeykoKids.com for information, advice, and free online videos on treating asthma in children, as well as Patrick McKeown's self-help children's Buteyko DVD and book.

Visit www.OxygenAdvantage.com for a programme specially formulated for athletes which simulates high-altitude training in order to attain maximum sports performance.

Appendix 2: Recommended Reading and Viewing

The Oxygen Advantage: simple, scientifically proven breathing techniques for a healthier, slimmer, faster, and fitter you by Patrick McKeown

Anxiety free: stop worrying and quieten your mind by Patrick McKeown

Buteyko Mindfulness Method: Calm your mind, improve concentration, live in the moment, and enjoy freedom from ADD, stress, panic attacks and depression by Patrick McKeown

Buteyko Clinic DVD set of DVD, CD & Manual – Complete instruction as presented by Patrick McKeown

Buteyko Kids DVD set of DVD & Manual – Complete instruction as presented by Patrick McKeown

Asthma Free Naturally by Patrick McKeown

Buteyko Clinic Self help program app with videos, voice recording, counter timer and alarm reminder for Android or iPhone. Available from ButeykoClinic.com, Amazon.com or the Apple store.

All books are available from www.buteykoclinic.com, www.amazon.co.uk or www.amazon.com

REFERENCES

Chapter 1

1. Timmons B.H., Ley R. *Behavioral and Psychological Approaches to Breathing Disorders*. 1st ed. Springer; 1994. page 77.
2. Lundberg J. Nitric Oxide and the paranasal sinuses *Anat Rec (Hoboken)* 2008 Nov;291(11):1479-84
3. J O N Lundberga, E Weitzberg. Nasal nitric oxide in man. *Thorax* 1999;54:947-952

Chapter 2

1. Kim EJ, Choi JH, Kim KW, Kim TH, Lee SH, Lee HM, Shin C, Lee KY, Lee SH. *The impacts of open-mouth breathing on upper airway space in obstructive sleep apnea: 3-D MDCT analysis.* *Eur Arch Otorhinolaryngol.* 2010 Oct 19.
2. Ohki M, Usui N, Kanazawa H, Hara I, Kawano K. Relationship between oral breathing and nasal obstruction in patients with obstructive sleep apnea. *Acta Otolaryngol Suppl.* 1996;523:228-30.
3. Lee SH, Choi JH, Shin C, Lee HM, Kwon SY, Lee SH. How does open-mouth breathing influence upper airway anatomy? *Laryngoscope.* 2007 Jun;117(6):1102-6.
4. Scharf MB, Cohen AP. Diagnostic and treatment implications of nasal obstruction in snoring and obstructive sleep apnea. *Ann Allergy Asthma Immunol.* 1998 Oct;81(4):279-87; quiz 287-90.
5. Wasilewska J, Kaczmarek M. Obstructive sleep apnea-hypopnea syndrome in children [Article in Polish] *Wiad Lek.* 2010;63(3):201-12.
6. Rappai M, Collop N, Kemp S, deShazo R. The nose and sleep-disordered breathing: what we know and what we do not know. *Chest.* 2003 Dec;124(6):2309-23.
7. Timmons B.H., Ley R. *Behavioral and Psychological Approaches to Breathing Disorders*. 1st ed. Springer; 1994. (ref page 49 Ley)
8. Timmons B.H., Ley R. *Behavioral and Psychological Approaches to Breathing Disorders*. 1st ed. Springer; 1994.
9. Timmons B.H., Ley R. *Behavioral and Psychological Approaches to Breathing Disorders*. 1st ed. Springer; 1994.

10. Bresolin, P. Shapiro, G. Shapiro, et al. Mouthbreathing in allergic children, its relationship to dentofacial development, *Am. J. Orthod.* 83 (1983) 334–340.
11. F.C.P. Valera, L.V.V. Travitzki, S.E.M. Mattar, M.A.N. Matsumoto, A.M. Elias, W. T. Anselmo-Lima, Muscular, functional and orthodontic changes in pre school children with enlarged adenoids and tonsils, *Int. J. Pediatr. Otorhinolaryngol.* 67 (2003) 761–770.
12. S. Linder-Aronson, Adenoids: their effect on mode of breathing and nasal airflow and their relationship to characteristics of the facial skeleton and the dentition, *Acta Otolaryngol. Suppl.* 265 (1970) 1–132.
13. F.C. Pereira, S.M. Motonaga, P.M. Faria, M.A.N. Matsumoto, L.V.V. Travitzki, A.S. Lima, W. T. Anselmo-Lima, Avaliac, a ~o cefalome ` trica e miofuncional em respiradores bucais, *Re v. Bras. ORL* 67 (2001) 43–49.

Chapter 3

1. Kim EJ, Choi JH, Kim KW, Kim TH, Lee SH, Lee HM, Shin C, Lee KY, Lee SH. The impacts of open-mouth breathing on upper airway space in obstructive sleep apnea: 3-D MDCT analysis. *Eur Arch Otorhinolaryngol.* 2010 Oct 19.
2. Ohki M, Usui N, Kanazawa H, Hara I, Kawano K. Relationship between oral breathing and nasal obstruction in patients with obstructive sleep apnea. *Acta Otolaryngol Suppl.* 1996;523:228-30.
3. Lee SH, Choi JH, Shin C, Lee HM, Kwon SY, Lee SH. How does open-mouth breathing influence upper airway anatomy? *Laryngoscope.* 2007 Jun;117(6):1102-6.
4. Scharf MB, Cohen AP Diagnostic and treatment implications of nasal obstruction in snoring and obstructive sleep apnea. *Ann Allergy Asthma Immunol.* 1998 Oct;81(4):279-87; quiz 287-90.

5. Wasilewska J, Kaczmarek M Obstructive sleep apnea-hypopnea syndrome in children [Article in Polish] *Wiad Lek.* 2010;63(3):201-12.
6. Rappai M, Collop N, Kemp S, deShazo R. The nose and sleep-disordered breathing: what we know and what we do not know. *Chest.* 2003 Dec;124(6):2309-23.
7. Hiot JD, Lohmeier. Influence of continuous speaking on ventilation. *Journal of Speech Language Hear* 2000 Oct;43(5):1240-51.

Diary of Progress

Ten Minute Routine

Date									
Time									
Pulse									
CP									
RB 4 min									
CP									
RB 4 min									
Final CP									
Final Pulse									

CP means Control Pause. **RB 4 min** means reduced breathing for four minutes. Rest for three minutes before taking Final CP. ButeykoClinic Self Help Program available from iTunes or Google Play

Diary of Progress

Ten Minute Routine

Date										
Time										
Pulse										
CP										
RB 4 min										
CP										
RB 4 min										
Final CP										
Final Pulse										

CP means Control Pause. **RB 4 min** means reduced breathing for four minutes. Rest for three minutes before taking Final CP. ButeykoClinic Self Help Program available from iTunes or Google Play

Diary of Progress

Twenty Minute Routine

Date									
Time									
Pulse									
CP									
RB 4 min									
CP									
RB 4 min									
CP									
RB 4 min									
CP									
RB 4 min									
Final CP									
Final Pulse									

CP means Control Pause. **RB 4 min** means reduced breathing for four minutes. Rest for three minutes before taking Final CP. ButeykoClinic Self Help Program available from iTunes or Google Play.

SHORT SUMMARY

of the Buteyko Clinic Programme

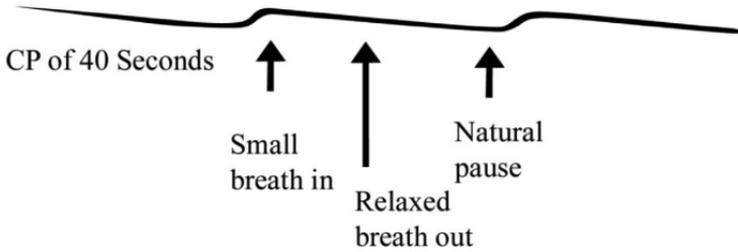
When your control pause is less than 20 seconds, breathing volume is usually 3 times that of a healthy person.



Low CP - 10 seconds

Over-breathing can be recognised by:

- » Breathing with the mouth open
- » Audible breathing during rest
- » Loud, irregular, erratic, effortful breathing
- » Feeling short of air
- » Frequent sighs and yawns
- » Movement of the upper chest while breathing

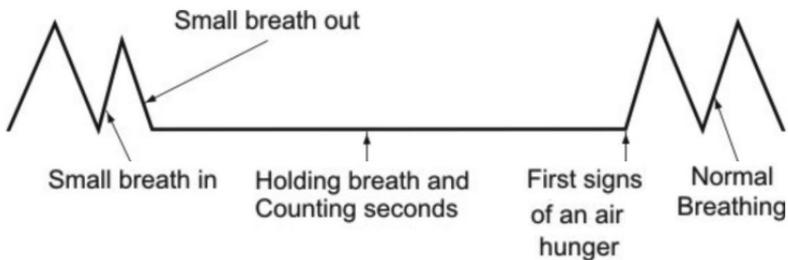


Normal breathing can be recognised by:

- » Nasal breathing
- » Calm, gentle, quiet, relaxed, regular, effortless breathing
- » Breathing using the diaphragm

How to measure relative breathing volume

The Control Pause (CP) measurement is a comfortable breath hold used to measure breathing volume:



Measuring the Control Pause (a)

- 1.** Gently exhale through your nose;
- 2.** Hold your breath until you feel the first distinct urge to breathe;
- 3.** At the first urges to breathe you may feel your diaphragm pressing downwards;
- 4.** Release the nose and resume calm and gentle breathing;
- 5.** The higher your CP, the lower your breathing volume and the fewer symptoms you will experience.

To drastically reduce or eliminate symptoms, your goal should be to achieve a CP of 40 seconds for 6 months:

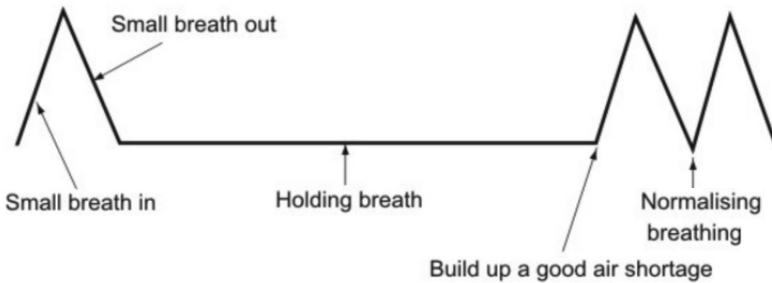
- » The lower your CP, the worse your symptoms will be;
- » You will feel better each time your CP increases by 5 seconds;
- » If your CP remains the same, you will not feel better;
- » Your morning CP is the most accurate;
- » Your CP should increase by 3 to 4 seconds each week during the first few weeks. Thereafter, progress will continue at a slightly slower pace;
- » Exercise is the best way to increase your CP from 20 to 40 seconds. Exercise is also the best way to maintain a high CP.

Exercise format

Please note: all breathing exercises are on the out-breath and should be performed on an empty stomach.

Exercise 1

Hold your breath for as long as possible to unblock your nose, shift mucus or relieve constipation. Repeat a breath hold every minute or so for 5-6 repetitions.



How to unblock the nose naturally

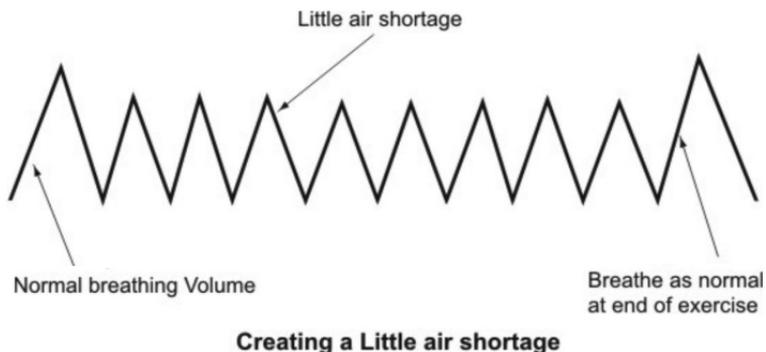
Exercise 2

Reduced breathing with attention on chest and tummy

- » Sit up straight with your mouth closed, jaws relaxed, and breathe normally through your nose. Place your hands on your chest and tummy.
- » Apply gentle pressure with your hands against your chest and tummy to create some resistance to your breathing. Create just enough resistance that you can feel your breathing against your hands.
- » While applying gentle pressure with your hands against your chest and tummy, take a slightly shorter breath in than you feel you need – this is usually approximately 80% of a regular breath.
- » At the top of the inhale, bring a feeling of relaxation to your body and allow a slow, relaxed breath out.
- » Continue in the same way: shorter breath in, relaxed breath out, shorter breath in, relaxed breath out

continued on next page

- » Practise this exercise to create a need for air for between three and five minutes. Take a break for one minute and repeat again.



Exercise 3

Walk with the mouth closed to create a need for air. This exercise involves walking at a pace where you feel a need for air but can still maintain nasal breathing. The lower the Control Pause, the more careful you need to be during exercise.

Exercise 4

Walking with breath holds:



- a.** Practise a series of short breath holds while walking



- b.** Practise a long breath hold while walking

Exercise 5

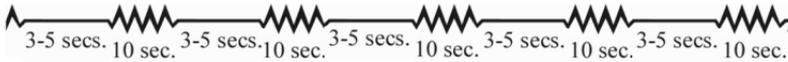
The **Steps** exercise is suitable for children and relatively healthy adults:



- » Take a small, silent breath in and a small, silent breath out through your nose;
- » Pinch your nose with your fingers to hold the breath;
- » Walk as many paces as possible with your breath held;
- » Try to build up a large air shortage (without overdoing it);
- » When you resume breathing, do so only through your nose. Your breathing must be calmed immediately;
- » After resuming your breathing, your first breath will usually be bigger than normal;
- » Make sure that you calm your breathing as soon as possible by suppressing your second and third breaths;
- » You should be able to recover from this breath hold within 2-3 breaths. If you cannot, you have held your breath for too long;
- » Wait for a minute or so and then repeat;
- » Aim to achieve 100 steps as your CP increases to 40 seconds.

Exercise 6

Many Small Breath Holds to stop anxiety, asthma or panic attack:



- » Exhale through the nose;
- » Pinch your nose with your fingers to hold the breath for 3-5 seconds;
- » Breathe normally through the nose for ten seconds;
- » Repeat the small breath hold for 3-5 seconds;
- » Breathe normally through the nose for ten seconds;
- » Continue to repeat until symptoms have passed;
- » If you are having a severe asthma attack, or cannot stop your symptoms within 10 minutes, take your reliever medication.