PATRICK MCKEOWN

Close Your Mouth

Buteyko Clinic Self Help:

How to Apply the Buteyko Method
spoken by Patrick McKeown

BUTEYKO BREATHING CLINIC SELF HELP MANUAL

Preface

Close Your Mouth

Buteyko Breathing Clinic self help manual

PATRICK MCKEOWN

Buteyko Books

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Give me your tired, your poor, your huddled masses yearning to breathe free.

Emma Lazarus 1849-1887

Foreword: Asthma – A Choice

This book explores:

- why you have asthma and more importantly how to reverse it
- how to unblock your nose
- how to stop wheezing and coughing permanently
- how to eliminate snoring and insomnia
- how to greatly improve sleep and energy levels
- how to reduce and often eliminate your dependency on reliever and preventer medications
- how to exercise correctly and eliminate exercise induced asthma.

Changing your diet, removing triggers and physically exercising will help reduce your asthma by about 15%. This book addresses all of that, plus the remaining 85%.

My background to writing this book stems from my personal experience of having asthma for well over twenty years. Just like you, I know what it is like to feel constant chest tightness and to be awoken most nights fighting for breath. I know too well, that suffocating feeling when you want to draw more air into your body and no matter how much air you draw in, you still feel suffocated. For most of my life, I had to limit my physical exercise as I was never sure if my lungs were able for it. This was my life and it may be yours.

But I also know what it is like to breathe completely free without the need for asthma medications. I can now experience the highs of being able to run each week without fear of my airways closing. I sleep each night without being awoken struggling for air. My breathing is no longer a struggle and effort; it is effortless and gentle. My overriding goal with this book and DVD is to provide you with the tools to do just that.

In 1997, my life changed forever when I discovered the work of the late Russian doctor Konstantin Buteyko who uncovered the link between breathing volume and a number of conditions, including asthma. You might say that you have tried breathing exercises before and they were of no use. Yes, I did too, but this approach is a lot different. This is about learning to correct your breathing volume.

This book is based on 50 years of research, and on my experience of teaching thousands of asthmatics through the ButeykoClinic about how to take control naturally. This approach is simple to understand, and can be incorporated easily into your way of life. It does require commitment, but the same goes for anything worthwhile. It can be taught to children over 4 years of age and all adults with different severities of asthma and COPD.

The expected improvement is 50% less coughing, wheezing and breathlessness within 2 weeks. There is no magic or potions. It is based on normal physiology, makes a lot of sense and uncovers the link between your breathing and your asthma. Furthermore, 6 independent trials in the Western world and the results from hundreds of thousands of asthmatics worldwide have validated the Buteyko Method.

Professor Konstantin Buteyko (1923-2003)

At this point you might ask; if it is so good why is it not better known?

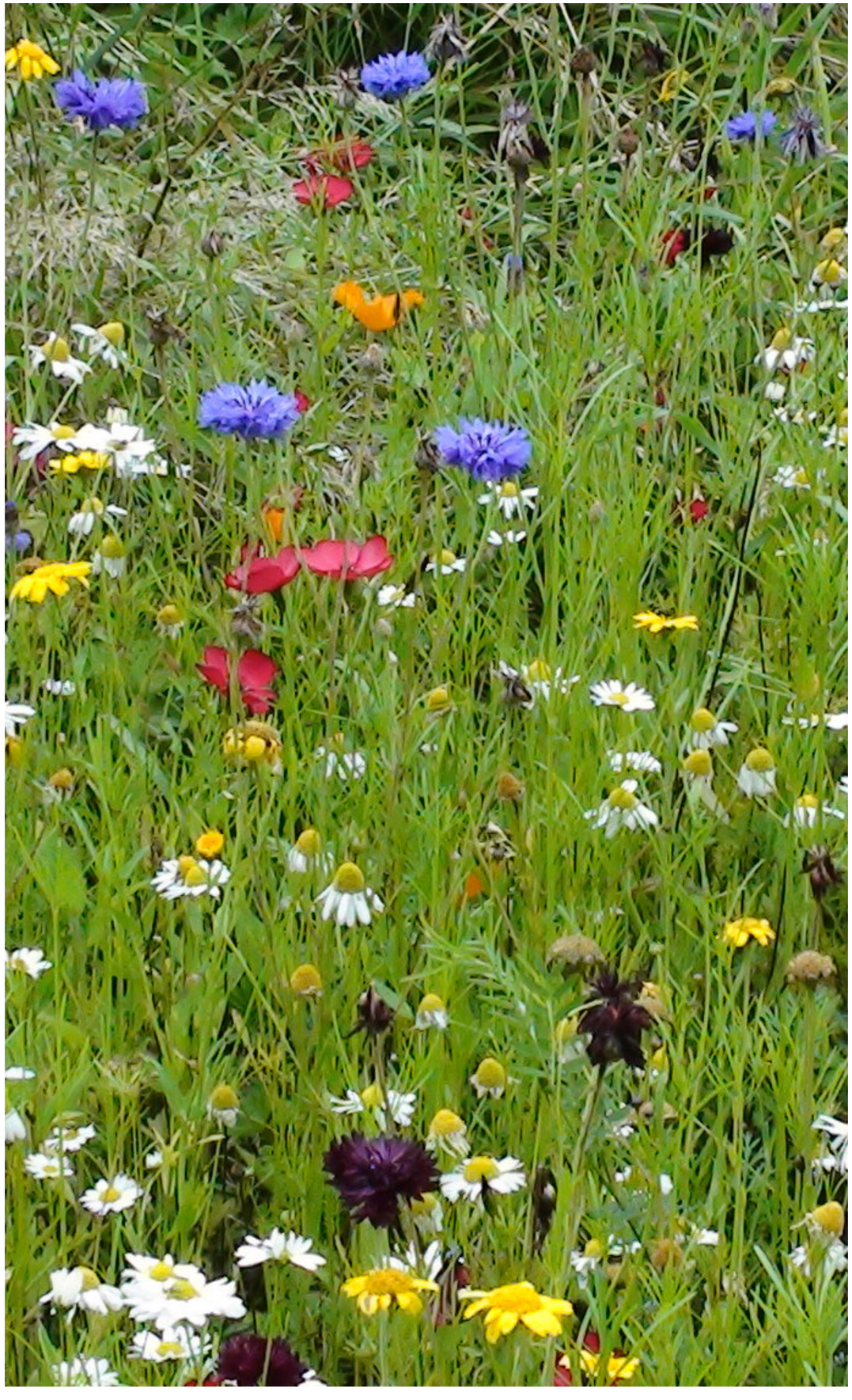
There is no straight answer to this. Suffice to say that most asthma research in the Western world is conducted by pharmaceutical companies. It is not in the interest of a Pharmaceutical company to research a successful non-drug method like Buteyko.

Chapter 1

What Causes Asthma?

"Noisy and deep" breathing of an asthmatic had always been considered an outcome of the disease. Nobody could even suspect that "deep breathing" was the cause of bronchial asthma, and increased depth of breathing could provoke the appearance of the symptoms of the disease".

K P Buteyko MD



Overbreathing

If you ask your doctor what causes asthma, the answer is "I don't know".

What is known is that asthma is more prevalent in affluent countries. (1-4)

It is generally thought that this is due to the hygiene hypothesis of lower exposure to infection during childhood, which results from improved living standards. However, *"Challenging this hypothesis, there is growing evidence that in many affluent countries the prevalence is higher among those in low socio-economic status.* (5-14) *These socio-economic differentials in asthma support a role of environmental factors in the development of asthma."* [15]

So what are the environmental factors and how do they cause asthma?

As we become wealthier, our lifestyles change and this has a significant affect on the way that we breathe. With modern living we eat more processed foods, overeat, do less physical exercise, experience more stress and have higher temperatures in the home. Jobs in the modern economy tend to be service-based. As a result they entail very little physical activity and many hours of talking. In addition we are subjected to the unhealthy belief that prevails in gyms, sports class, stress counselling and even western Yoga about the benefits of big breathing.

The modern western lifestyle has quite a profound influence on our breathing;

IT INCREASES IT.

Throughout this book, I will use different terms such as heavy breathing, overbreathing, chronic hyperventilating, big breathing. They all mean the same thing and are the crux to explaining the cause of asthma and rhinitis.

So what is overbreathing or chronically hyperventilating?

If I told you that you were overeating, you would understand what I mean. Overeating is eating an amount of food greater than that which our body requires.

Likewise, overbreathing means breathing a volume of air greater

than that which we require. You might say that you don't over breathe; but for most people it is hidden.

Listed below is a number of characteristics which are typical of people attending my clinics? How many apply to you?

- Breathing through the mouth
- Hearing breathing during rest
- Regular sighs
- Regular sniffing
- Irregular breathing
- Holding of breath (apnoea)
- Taking large breaths prior to talking
- Yawning with big breaths
- Upper chest movement
- Lot of visible movement
- Effortful breathing
- Heavy breathing at night

Normal Breathing Volume:

The number of breaths per minute during normal breathing is about 10 to 12. Each breath is approximately 500 ml. This provides a healthy volume as described in any University Medical textbook of 5 to 6 litres of air per minute.

Typical Asthmatic Breathing Volume:

The number of breaths per minute of a typical asthmatic is about 15-20. Each breath tends to be larger than normal and can vary from 700ml to 1 litre. This provides a volume of 10 to 15 litres of air per minute. A number of trials found that the average minute volume for asthmatics was 14.1 litres (*Bowler 1998),* other researchers showed a volume of 15 litres (*Johnson et al 1995*) and 12 litres (*McFadden & Lyons 1968*). [16-18]

This heavy breathing does not just happen during a symptomatic period. It is chronic meaning that it takes place every minute, every hour, every day.

People with asthma, COPD and other respiratory complaints breathe two to three times more than required. In food terms, this is the equivalent of eating ten meals per day.

We can live without food for a number of weeks and without water for a number of days. We can only live without air for just a few minutes. Surely air, which is so vital to sustaining life, must meet certain parameters?

Why do we overbreathe?

There are many reasons why we overbreathe and not all of them apply to each individual. The following seven factors are more prevalent in countries of increasing modernisation and affluence, and this helps explain why asthma and rhinitis are so prevalent.

1. **Diet-** Overeating increases breathing volume due to the additional work that is required by the body to process and digest the extra food. Secondly, processed foods are generally acidic. The body strives to maintain the correct pH of the blood and increases

breathing in order to remove carbon dioxide.

2. During **speaking**, large breaths of air are inhaled between each sentence. People who work in sales, call answering and teaching will be very aware of how tired and chesty they can be following a number of days talking.

3. **Stress** activates the fight or flight response. We react the same way to a modern day stress as we did to meeting a predatory animal thousands of years ago. When confronted by a wild animal, we had the option of fighting it or running away as fast as possible. In this situation, our breathing increases to prepare us for physical activity.

4. When we move our muscles, we generate greater amounts of CO2. Nowadays, **lack of exercise** results in lower production of CO2, and therefore 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. The **belief that it is good to take big breaths**. Stress counselors, gym instructors, coaches, and media personnel who are misinformed about correct breathing volume often encourage the practice of taking a big breath to allow more oxygen into the body. The confusion may lie in the belief that a deep breath is a big breath. A deep breath is what a baby takes and this can be observed by the movements of the tummy. A big breath is often taken through the mouth and generally involves upper chest movement. They are entirely different.

6. **Asthma symptoms.** As airways constrict, we feel suffocated. As a result our breathing increases to try and remove this feeling. However, this increase of breathing volume further feeds our symptoms causing greater constriction and thus a vicious circle is maintained. Later on, I will show you a very gentle exercise to stop this cycle.

7. **Higher temperatures** within the home increase breathing. Another factor is because we are so well clothed; we are less able to regulate body temperature through the skin. This encourages us to revert to the primitive way of heavier breathing to regulate body temperature.

Overbreathing and genetic predisposition;

It can be argued that the same percentage of the population carries the asthma gene today as did years ago. After all, we evolve over thousands of years. While asthma has been around for a long time with first reports dating back to the Ancient Egyptians, it only affected a small percentage of the population until the second half of the twentieth century. For example, the incidence of self reported asthma increased in the US by 74% between 1980 and 1996.[19]

Modern living has resulted in a profound change to our breathing. The affect that overbreathing has on the individual depends on genetic predisposition.

If you carry the "asthma gene" and you overbreathe, you will develop asthma. On the other hand, if you carry the "asthma gene" but don't have the habit of overbreathing, you will not develop asthma.

Lastly, when you correct your overbreathing, asthma reverses.

First we form habits, then they form us. Conquer your bad habits, or they'll eventually conquer you.

Dr. Rob Gilbert

Just a Habit

The good news is that overbreathing is just a habit. The part of your brain (central chemoreceptor) that regulates the amount of air you breathe becomes accustomed to breathing too much.

In a paper entitled *Hyperventilation Syndrome and Asthma*, Dr Stephen Demeter states "*prolonged hyperventilation (for more than 24 hours) seems to sensitize the brain, leading to a more prolonged hyperventilation.*"[20] Hyperventilation becomes habitual or long term, so even when the primary cause is removed, the behavior is maintained.

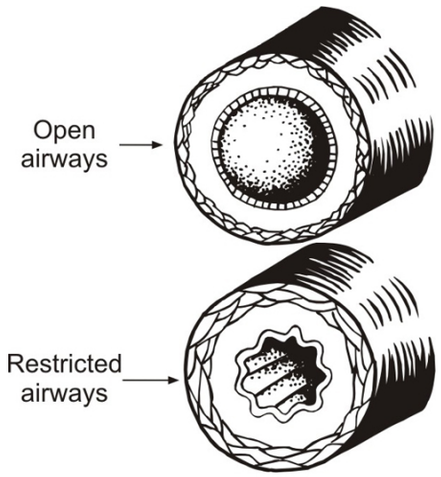
With the various exercises outlined in this book, I will teach you how to bring your breathing volume down to more normal amounts, thereby reversing your asthma.

In other words, I will teach you to breathe less.

How does overbreathing cause asthma?

Your airways narrow due to a combination of different factors. The most prevalent is inflammation, which is swelling of the inner wall of your airways. Another is constriction by the smooth muscle that surrounds your airways and a third is increased secretion of mucus by goblet cells.

An asthma attack is used to describe a period of breathing difficulty. An attack can range from a few coughs or a mild wheeze to a life-threatening experience.



Airways narrowing

There are different theories as to why overbreathing causes airways to narrow. One is that airways cool and/or dehydrate from having to condition such a large volume of air. (21-34)

A paper by Davis and Freed published in the European Respiratory Journal concluded, "repeated dry air challenge in dogs in vivo causes persistent airway obstruction and inflammation not unlike that found in human asthma." (33)

Professor Buteyko and others point to the loss of Carbon Dioxide (CO_2). (35-39)

In a paper entitled *The Mechanism Of Bronchoconstriction Due To Hypocapnia In Man*, Sterling writes, "hypocapnia (loss of Carbon Dioxide) due to voluntary hyperventilation in man causes increased resistance to airflow". Furthermore, when subjects inhaled an air mixture containing 5% carbon dioxide "bronchoconstriction was prevented, indicating that it had been due to hypocapnia, not to mechanical factors associated with hyperventilation"[41]

Why is Carbon Dioxide so important?

Carbon Dioxide (CO_2) is generated as an end product from the oxidising of the fats and carbohydrates you eat. The CO_2 is carried by your veins to your lungs, where the excess is exhaled. Breathing a correct volume results in the required amount of CO_2 being retained in your lungs. When you overbreathe, too much CO_2 is exhaled. The human body requires a certain amount of it for normal functioning.

"Carbon Dioxide is, in fact, a more fundamental component of living matter than is Oxygen." Yandell Henderson cited in Normal Breathing- The Key to Vital health by Dr. Artour Rakhimov. [40]

Carbon Dioxide is not just a waste gas. It is necessary for a number of vital bodily functions including the following;

Transportation of Oxygen

Oxygen is relatively insoluble in blood, so approximately 98% of the gas is carried by haemoglobin molecules. The release of Oxygen from haemoglobin is dependent on the quantity of Carbon Dioxide in your alveoli/arterial blood. If the Carbon Dioxide is not at the required level of 5%, the Oxygen "sticks" to haemoglobin and so is not released to tissues and organs.

This bond was discovered in 1904 by Bohr and is known as the Bohr Effect.

During normal conditions 75% of your intake of Oxygen is exhaled while breathing a healthy volume of 4 - 6 litres per minute. Even

during intense exercise, it is estimated that 25% of our intake of Oxygen is exhaled. Breathing a volume greater than normal does not improve the amount of Oxygen in your blood, as it is already 97 - 98% saturated. Instead it lowers CO_2 levels, firstly in your lungs, then in your blood, tissues and cells and this reduces the delivery of Oxygen from the haemoglobin within your red blood cells.

The greater the amount of air taken into your body, the less Oxygen is delivered.

> To oxygenate tissues and organs, modern man needs to breathe less not more.

Dilation of blood vessels and airways

Carbon Dioxide relaxes smooth muscle which surrounds airways, arteries and capillaries.

For example, each 1mmHg drop (norm is 40mmHg) of arterial CO_2 reduces blood flow to the brain by 2%.[42] In other words, oxygenation of your brain significantly decreases when you breathe heavily. It is no coincidence that symptoms such as fatigue, brain fog, anxiety and poor concentration etc. are common among asthmatics as chronic overbreathing is contributing to them all.

For those genetically predisposed to asthma, the loss of CO_2 from the lungs causes the airways to constrict.

The heavier you breathe- the more you feed your asthma and other hyperventilation-related problems. The calmer and quieter you breathe, the more your blood vessels and airways open.

Overbreathing increases allergic reactions.

Histamine levels increase during prolonged overbreathing. [43-44] Histamine is a substance secreted by mast cells during exposure to an allergen. This substance creates swelling (edema), local inflammation and constriction of the smaller airways (bronchiole). This is especially relevant to people with hay fever (rhinitis) and asthma.

How many of the following symptoms of hyperventilation do you have?

- **Respiratory system**: wheezing, breathlessness, coughing, chest tightness, frequent yawning, snoring and sleep apnoea.
- **Nervous system**: light-headed feeling, poor concentration, numbness, sweating, dizziness, vertigo, tingling of hands and feet, faintness, trembling and headache.
- **Heart:** a racing heartbeat, pain in the chest region, and a skipping or irregular heartbeat.
- **Mind**: some degrees of anxiety, tension, depression, apprehension and stress.

Other general symptoms include mouth dryness, fatigue, bad dreams, nightmares, dry itchy skin, sweaty palms, cramping, spasm, increased urination such as bed wetting or regular visits to the bathroom during the night, diarrhea, constipation, general weakness and chronic exhaustion.

Cardiologist Claude Lum comments that; "*Hyperventilation presents a collection of bizarre and often apparently unrelated symptoms, which may affect any part of the body, and any organ or any system.*"[45]

In the late Professor Buteyko's words "Exhaling Carbon Dioxide from the organism brings about spasms in bronchi, vessels and intestines

etc. This reduces Oxygen supply leading to Oxygen deficiency making one breath heavier, thus completing the vicious circle."

Practical examples of overbreathing affecting asthma

Exercise causes airway narrowing for an estimated 70-90% of asthmatics.[46] In fact, I have yet to see a moderate to severe asthmatic who is not affected by physical exercise. Breathing increases as soon as you commence physical exercise. The heavier your breathing is relative to your metabolic requirements, the greater the degree of airway narrowing.

The second example of overbreathing causing asthma within a few minutes is laughter. We all know a friend or relative who gets into a fit of coughing or wheezing from having a good hearty laugh. As one starts to laugh, large breaths are drawn through the mouth. For some people, 30 seconds of laughter is enough to produce symptoms.

A report published by the America Thoracic Society in May 2005 concluded that laughter causes symptoms among 57% of asthmatics.[47] In the same report asthma expert Dr. Garay commented, "Nobody knows how laughter brings on asthma, but it might involve hyperventilation."

So the question to ask is; if you can take yourself into symptoms from a few minutes of laughter or exercise, does it make sense that if your breathing is 2 - 3 times more than required at all times, then it too will cause symptoms?

Why is swimming beneficial?

For years, medical doctors have been telling their asthma patients that swimming was good for them even though, they may not have exactly known why. The answer is simple; during swimming, your face is under water and this reduces your air intake. Although, you may take a breath in through your mouth every few strokes, your breathing volume is a lot less that if you were running or doing other exercise.

"In most land based forms of exercise, patterns of breathing are not constrained, VE increases proportionately throughout exercise, and end tidal CO_2 tensions are either normal or low. Therefore there is no hypercapnic stimulus for bronchodilation and asthmatics have no protection..... Because end tidal CO_2 tensions have not been measured in asthmatics, the potentially protective property of hypercapnia may have been overlooked".

As you exercise, CO_2 is produced from metabolic activity. This, combined with the reduced breathing volume from swimming, increases CO_2 levels and this in turn dilates your airways. It is unfortunate that asthmatic swimmers are not aware of this and often revert to heavy breathing through the mouth as soon as they leave the water.

"One needs to eat less, breathe less, sleep less and physically work harder to the sweat of one's brow because this is good. This is a fundamental change, this is true restructuring. This is what we need to do these days."

Professor Konstantin Buteyko

CHAPTER 2

Yearn to Breathe Free

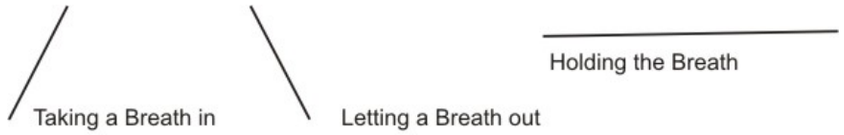
"The perfect man breathes as if he does not breathe"

Sixth century B.C. philosopher Lao Tzu

CHAPTER 2

Control Pause

My objective is to strip away unnecessary text and provide just what you need to make progress. All breathing exercises will be accompanied by a line diagram. To interpret each diagram, it is essential to understand the following;

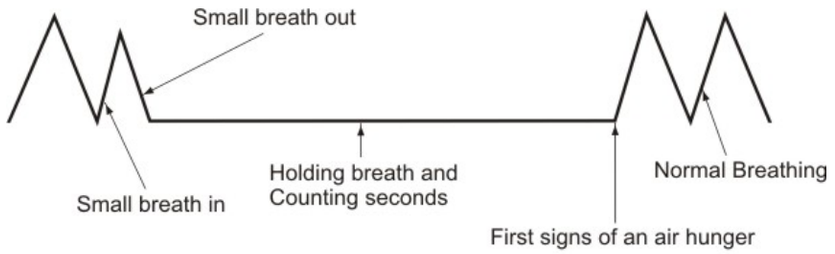


How to interpret breathing instructions

All breathing exercises and the Control Pause - which involves breath holding - are performed after an exhalation. Holding the breath after an exhalation provides greater consistency and comparability as a measurement, involves less stress on the lungs and enables a higher concentration of CO_2 which will relax the airways.

Measure Breathing Volume – Your Control Pause

To measure the extent of your breathing volume, a very simple breath hold test called the Control Pause (CP) is used. The Control Pause will provide feedback on your symptoms and, more importantly, your progress. Your CP measures the length of time that you can comfortably hold your breath.



Measuring the Control Pause (a)

For this you will need a watch or clock with a second hand.

1. Take a small silent breath in and a small silent breath out.
2. Hold your nose with your fingers to prevent air entering into your lungs.
3. Count how many seconds until you feel the first signs of an air hunger. You may also feel your diaphragm involuntarily "jerking" or pushing downwards at about the same time.
4. Release your nose and breathe in through it.

Your inhalation after the breath hold should be no larger than your breath prior to taking the measurement. It should be calm and quiet. If your breath in is disrupted, then you have held for too long and so have an inaccurate CP.

Video Control Pause

Important things to be aware of before we start:

1. The breath is taken after gently exhaling.
2. The breath is held until the first urges only. It is not a measurement of the maximum length of time that you can hold your breath.
3. The CP is a measurement of your breath hold time only. It is not an exercise to correct your breathing.

Remember that the CP is holding your breath only until the first urges. If you had to take a big breath at the end of the breath hold, then you held it for too long. The most accurate CP is taken first thing in the morning after waking up.

What does the CP (comfortable breath hold time) mean?

If your CP is less than 10 seconds then;

Asthma symptoms are severe. Breathlessness, wheezing and/or coughing will be frequently present throughout the day and at night. Relative breathing volume as determined by such a low breath hold is very big.

If your CP is less than 20 seconds then;

Symptoms such as coughing, wheezing, breathlessness, exercise-induced asthma, colds, chest infections and fatigue are present. The lower your breath hold, the greater your symptoms.

If your CP is between 20 and 40 seconds then;

Main symptoms will have gone, but you may develop symptoms if exposed to a trigger. The affect of a trigger is proportionate to your CP. As an asthmatic you will feel quite well and your breathing will be a lot calmer. In addition, you should not have any nighttime episodes or exercise-induced asthma and your colds and chest infections will have decreased significantly.

If your CP is greater than 40 seconds then;

No asthma symptoms are present. You will feel very well with good energy, clarity and breathing. To ensure a permanent physiological change, it is necessary to attain a morning CP of 40 seconds for 6 months.

The lower your breath hold, the greater your breathing volume and the greater your asthma symptoms. For example, a very severe asthmatic will have a Control Pause of less than 10 seconds. Their

breathing will be very noticeable both at rest and while participating in physical exercise. An asthmatic with a morning CP of 40 seconds will have no symptoms. Their breathing will be unnoticeable during rest. Physical exercise will produce a lot less ventilation and they should not experience exercise-induced asthma at all.

Essential rules to make progress:

- You will feel better each time your CP increases by 5 seconds.
- If your CP does not change, you will not feel better.
- Your CP should increase by 3 - 4 seconds each week.
- The most accurate CP is taken first thing after waking. You cannot influence your breathing during sleep. As a result, this CP is the most accurate as it is based on your breathing volume as set by the respiratory centre.
- Your CP as taken throughout the day will provide feedback of your asthma at that time.
- Your goal is to have morning CP of 40 seconds for 6 months.

Three steps to increasing your CP;

STEP 1

Stop Big Breathing

a. Close Your Mouth

b. Stop Sighing – swallow

c. Apply gentle calm breathing

d. Never hear your breathing during rest

STEP 2

Practice reduced breathing

Use the 6 simple exercises in Chapter 3 - each with its own purpose.

STEP 3

Take physical exercise with correct breathing.

(Physical exercise is necessary to increase the CP from 20 to 40 seconds. More details further on)

STEP 1 is the foundation. Make the change to nasal breathing on a permanent basis, suppress your sighs, be aware of your breathing and ensure that it is quiet during the day. A regular sigh is enough to maintain chronic hyperventilation; therefore it is very important to stop sighing by swallowing or holding your breath. Unless your foundation is strong, your progress will not be good.

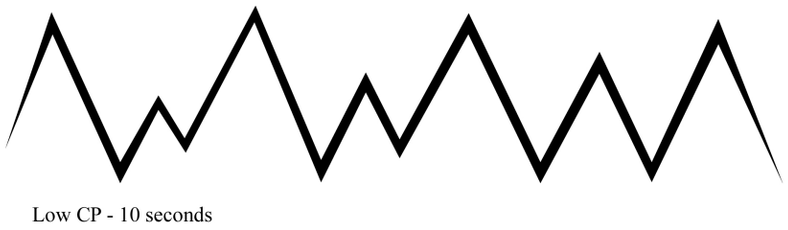
You will make progress by keeping your mouth closed but this will not be enough by itself. It is also necessary to reverse the overbreathing habit that has developed over the years.

To increase your CP from 10 - 20 seconds, **STEPS 1 and 2** are necessary.

To increase your CP from 20 – 40 seconds, **STEP 3** is necessary.

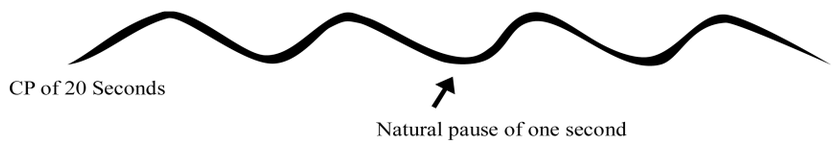
The following is an example of the change to Breathing Volume as the control pause increases

As your breathing volume reduces to more normal levels, your CP increases. The following is an example of the relationship between breathing volume and your CP.



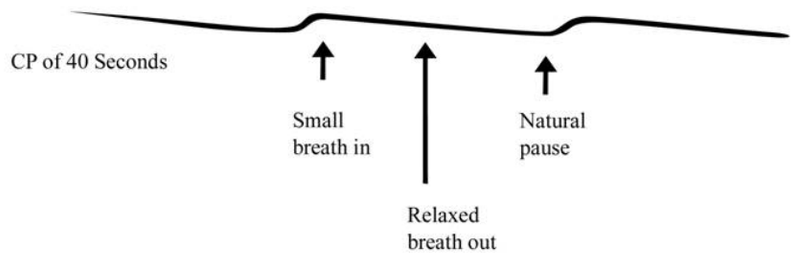
Low CP - 10 seconds

CP of 10 seconds; breathing is noisy, loud, irregular, large, heavy, erratic, and effortful.



CP of 20 seconds; breathing is heavy but calmer. A natural pause occurs between each breath.

CP of 30 seconds; breathing is calm and quiet. The natural pause gets larger.



CP of 40 seconds; breathing is very quiet, calm and unnoticeable.

Compare our lifestyles

Fifty years ago;

Greater physical activity
More natural foods
Less overeating
Cooler temperatures within the home
Less public talking
Less stress- less competitive pressures, a more green environment and nature

Result: Correct volume breathing - Higher CP - asthma uncommon

Today

Little physical activity
More processed foods
Habitual overeating
Higher temperatures of homes and warmer clothes
Talking forms a large part of our working life
More stress - artificial and noisy concrete environment with information overload

Result: Big volume breathing - Lower CP – asthma very common

"The end of the human race will be that it will eventually die of civilization."

Ralph Waldo Emerson

Chapter 3

The Buteyko Clinic Approach

"If A equals success, then the formula is:
A = X + Y + Z,
X is work.
Y is play.
Z is keep your mouth shut".

Albert Einstein

CHAPTER 3

Breathe Less

My experience from teaching thousands of asthma sufferers enabled me to develop a very simple approach to overcome asthma. How the exercises are presented and described is unique to the Buteyko Breathing Clinics. This approach is easy to apply, remember and incorporate into your way of life.

Ultimately all exercises are designed to correct your breathing and reverse chronic hyperventilation. The goal is for breathing to become quiet, gentle, calm and regular as characterized by a high CP.

Breathing exercises are the tools to get you there.

All breathing exercises – which will be outlined in detail later in this chapter - involve one thing and that is to breathe less for periods of time in order to reverse the bad habit of overbreathing.

You are on an air diet.

When you practice any of the breathing exercises, it is necessary that you feel a **hunger for air**. The extent of the need for air depends on what exercise you are doing. This is good feedback and is essential to correct the habit of overbreathing. Feeling a need for air is due to an increase of CO_2 in your blood. Your respiratory centre is reacting to the increased CO_2 by stimulating your breathing to keep it at the lower level. After 9 – 12 minutes of feeling this air hunger, the increased CO_2 penetrates your blood-brain barrier and resets the respiratory centre a little. This will be indicated by a higher CP as taken a few minutes after completing 15 - 20 minutes of breathing exercises.

Imagine that you are eating ten meals each day. If you attended a diet class and were told to reduce your meal consumption to the normal amount of two to three meals each day, you would feel hungry for food because the amount that you would be eating is less than what your body has become accustomed to. However within a few days, this feeling will disappear and your overall health will improve. While correcting your breathing, you purposely reduce your breathing and feel the air shortage to make progress.

The feeling of the need for air is not due to your body being deprived of Oxygen, but arises because you are breathing less than you normally do.

There is just one simple rule and 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.

A need for air is the same as a want for air. Some people describe it as

feeling **suffocated** or **smothered**. The experience of breathlessness is similar to partaking in physical activity.

To experience and understand the need for air, perform the following:

- Take a small breath in.
- Gently breathe out.
- Hold your nose and wait until you feel a distinct but non-stressful need to breathe in.

(The degree of air shortage will depend on whatever exercises you are undertaking.)

To Breathe Less – Feel Breathless

Note of Caution:

While breathing exercises are perfectly safe for most, they are unsafe for a number of people. If you are unsure, do not attempt breathing exercises. Instead contact me via the contact information in appendix.

Category 1- Do not attempt any of the breathing exercises if you have or are undergoing any of the following;

- Current Cancer treatments
- Type 1 Diabetes
- Epilepsy
- Schizophrenia
- Unsatisfactory blood pressure levels
- Chest pains or pain in the heart region
- Sickle cell anemia
- Arterial aneurysm
- Any heart problems in the past six months
- Uncontrolled hyperthyroidism
- A known brain tumour or kidney disease.

Category 2- People who should have v**ery gentle air shortage only;**

- Severe asthmatics and people with emphysema and COPD
- Type 2 Diabetics
- Pregnant (do not apply during first trimester)
- Anxiety/depression
- Migraine Sufferers

Category 2 should never have an air shortage greater than what you would experience during a gentle walk. **To achieve this, practice Exercises 2 and 6 ONLY.**

An even better option would be to find an experienced practitioner to help. (A list of practitioners can be found at the back of book) If you are predisposed to anxiety or migraines, it is better to increase the CP gently. If your CP increases too quickly, you may experience an aggravation of your symptoms for a short time. This is a cleansing reaction and your CP will increase when it passes. To increase the CP slowly, the air shortage should be tolerable.

Cleansing reactions

About two thirds of people who undergo reduced breathing will experience a detoxing or cleansing reaction. Better volume breathing improves blood flow and the oxygenation of all tissues and organs. Cleansing reactions take place when the CP moves through 10, 20 and 40 seconds. It can also occur when the CP is 2, 4 and 6 times the initial value.

Generally cleansing reactions are an aggravation of your symptoms, are mild and can last from several hours to several weeks. For most people it lasts just one to two days.

Depending on the person, typical symptoms include;

- increased secretions of mucus from the lungs, head cold with runny nose,
- diarrhoea,
- more frequent visits to the bathroom
- loss of appetite,
- increased yawning and fatigue,
- insomnia,
- general unwell feeling,
- smell from the skin (especially if you have been taking large amounts of oral steroid),
- short term headache,
- increased irritability or anxiety, (if you have anxious tendencies, it is better to increase CP slowly by applying a tolerable air shortage only),
- metallic or coppery taste in the mouth and increased demand for water.

Don't worry; it is highly unlikely that you will experience every reaction. If you do have a strong cleansing, your body has undergone a major physiological change and you will feel so much better from it.

An integral part of the cleansing is reduced appetite for food, therefore only eat when hungry.

To help reduce the intensity and duration of cleansing reactions, drink warm water regularly throughout the day and continue with reduced breathing by relaxation. (EXERCISE 2 and 6)

During the cleansing, your Control Pause will quickly reduce. It will increase again when the cleansing reaction has passed and you will be feeling so much better.

On a positive note, everyone will experience signs of health improvement including: far less wheezing, coughing and breathlessness, increased calmness and concentration; better sleep and more energy, and reduced appetite and cravings for coffee, chocolate and other foodstuffs.

Making the change from mouth to nasal breathing.

All new born babies - and the vast majority of animals - nasal breathe. Dogs pant through their mouths to regulate their body temperature but for the most part their mouth is closed.

Many humans sleep, walk, rest and work with their mouth open. It seems that their nose is nothing more than an ornament.

Your nose plays an important role in conditioning incoming air before it enters your lungs. My experience is that by making the switch from mouth to nasal breathing on a permanent basis, you will help your asthma by about 30%. I would also like to add that;

Unless you make the switch to nasal breathing, you will never reverse your asthma.

YOUR NOSE:

Filters: Your nose is lined with a mucus membrane.

"It has been estimated that three quarters of the bacteria entering the nose are deposited on the mucus blanket and are thus eliminated. In fact, the mucus has its own antibacterial action". [1]

Your nose also filters larger particles, which are common triggers for asthma. (It often dismays me that parents of asthmatic children spend considerable sums of money on changing carpets, curtains and bedding and installing high-tech vacuum systems to reduce the inhalation of dust mites, but seldom is the child encouraged to breathe through their nose.)

Warms: Your nose brings air to a better temperature and therefore reduces the likelihood of airway cooling.

"Air swirling through turbinates is warmed rapidly: entering the nose at 6 degrees (43 degrees F) for instance will be warmed to 30 degrees (86 degrees F) by the time it reaches the back of the nose, and to body temperature as it passes the trachea." [2]

Moistens: Your nose contains a moist mucous blanket that slightly moistens air thereby reducing the dehydration affect.

Regulates volume: Your nostrils are a smaller entry than your mouth. This in turn creates resistance and results in a more quiet, calm and better breathing volume.

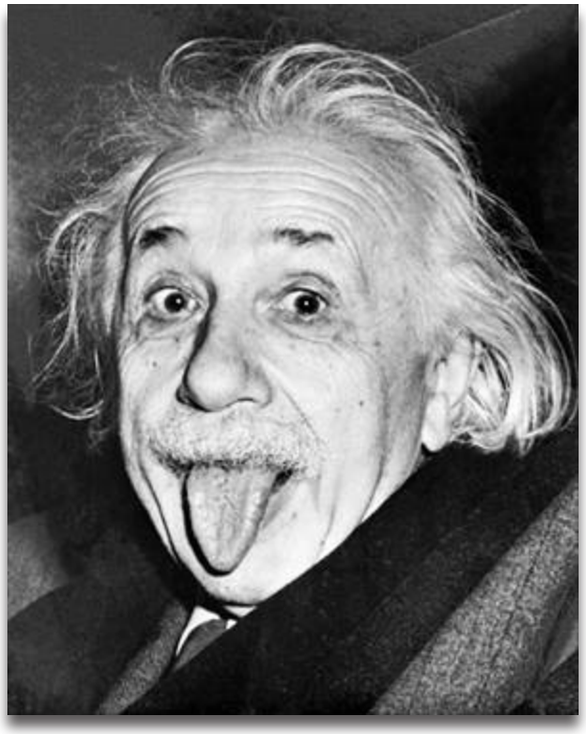
Mouth breathing results in a dry mouth, which creates an ideal environment to harbour bacteria. This contributes to gum disease and teeth decay. In addition, all children who habitually breathe through their mouths have a far greater likelihood of developing crooked teeth. [3]

"Over the years I have noticed an increasing tendency for children to show evidence of chronic or habitual mouth breathing. This has a negative effect not only on the development of the jaws, the shape of the developing cranium and the occlusion, but also on the general health of the child. There is plenty of evidence in the literature that mouth-breathing has an adverse effect on the growth and development of the face and jaws. All children who are habitual mouth-breathers will have a malocclusion." [3] A malocclusion is a misalignment of teeth and/or incorrect relation between the teeth of the two dental arches.)

Mouth breathing looks dreadful. *"Nasal breathing in public is considered to be more socially acceptable and attractive than mouth breathing".* [4]

To confirm this, take a look at yourself in the mirror. If you wish to look attractive shut your mouth!!

Rhinitis is very common amongst asthmatics. Symptoms include sneezing, nasal congestion, runny nose, itchy nose, throat, eyes and ears. To date, the vast majority of my patients have been able to make the switch from mouth to nasal breathing. In addition, I have received considerable feedback from patients of their nasal polyps shrinking within a number of months after they make a permanent change to nasal breathing.



"Any man who can drive safely while kissing a pretty girl is simply not giving the kiss the attention it deserves"

Albert Einstein

Carefully pay attention to all exercises!

BREATHING EXERCISES as taught at Buteyko Breathing Clinics

EXERCISE 1: How to unblock your nose, shift mucus or remove constipation.

(air shortage – medium to large)

EXERCISE 2a and 2b: How to reduce your breathing.

(air shortage – tolerable)

EXERCISE 3: Walking with your mouth closed to create a need for air.

(air shortage – tolerable)

EXERCISE 4: Walking with breath holds.

(air shortage – medium to large)

EXERCISE 5: STEPS (children and healthy adults)

(air shortage – medium to large)

EXERCISE 6: How to stop a wheezing and coughing attack. (Suitable if you have symptoms, a low CP, are senior, have different illness)

(air shortage – gentle)

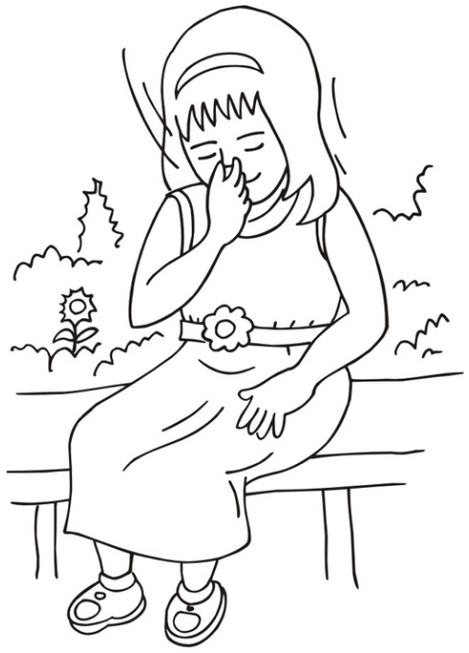
CHAPTER 3

Exercise 1
How To Unblock Your Nose

If your CP is less than 10 seconds, or you have any of the conditions as listed on Note of Caution, then refrain from holding your breath too long. Instead practice EXERCISE 6 to help unblock your nose.

Your nose gets blocked due to breathing too much. Blood vessels inflame and greater amounts of mucus are secreted thus making breathing through it more difficult.

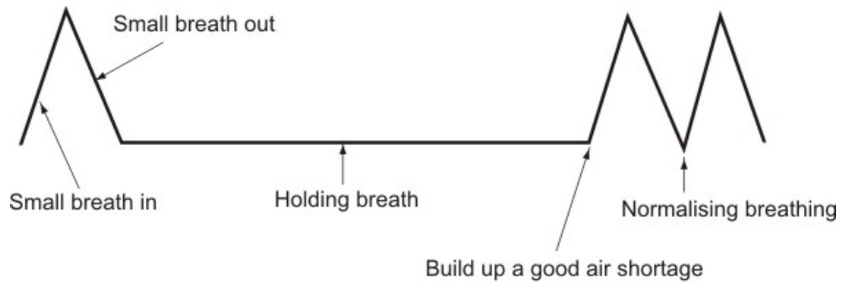
A vicious circle ensues because, as your nose gets blocked, you switch to mouth breathing. This involves an even greater loss of CO_2 resulting in even more congestion.



Unblocking the nose

This Exercise is very effective for decongesting your nose in just a few minutes;

- Sit up straight.
- Take a small breath in through your nose, if possible, and a small breath out. If your nose is quite blocked, take a tiny breath in through the corner of your mouth.
- Pinch your nose with your fingers and hold your breath. Keep your mouth closed.
- Gently nod your head or sway your body until you feel that you cannot hold your breath any longer. (Hold your nose until you feel a strong desire to breathe.)
- When you need to breathe in, let go of your nose and breathe gently through it, in and out, with your mouth closed.
- Calm your breathing as soon as possible.



How to unblock the nose naturally

If your nose does not become totally free, wait about 30 seconds until your breathing has recovered before performing this exercise again. You will need to do this a number of times before your nose is completely unblocked.

Video Exercise 1

How to unblock your nose naturally.

After doing this exercise many times your nose will be unblocked. You might also feel warm and more alert due to the dilatation of blood vessels. This exercise is also useful for shifting mucus from the airways and for removing constipation. To remove constipation, perform this breath hold exercise many times while sitting on the loo!

If you have a low CP, it indicates that you are big breathing and so your nose will become blocked again. It is only when the morning CP is over 20 seconds that your nose will stay clear.

Perform this exercise each time that your nose becomes blocked. Even if you have a cold, make sure to breathe through your nose. You might think that you cannot clear your nose when you have a heavy cold, but you can. If you do have a head cold, close your mouth and reduce your breathing throughout the day. (Explained later) This will both shorten the duration of your cold and greatly reduce the likelihood of it going to your chest. I have observed hundreds of asthmatics dramatically reduce head colds and chest infections after they learned to nasal breathe and correct their breathing volume.

When the switch is first made from mouth to nasal breathing, the volume of air being inhaled will reduce. Your mouth is a bigger opening and thus you can breathe far more air through it. If you have had your mouth open for many years, it is certain that the body has become adjusted to this heavier breathing.

Your nostrils are a smaller space and thus will create more resistance than mouth breathing. As a result you may feel that you are not getting enough air. This will be for a short time only. In a few days, your respiratory centre will have become accustomed to the more correct volume.

Whatever you do, ensure that you keep your mouth closed. Your body may begin to play tricks and convince you to breathe more by inducing yawning, sighing, regular sniffing or the odd mouth breath. Try not to increase breathing at this point.

When the need to big breathe arises, for example during a sigh, swallow immediately. If the need to yawn also occurs, avoid taking

the big breath that accompanies a yawn. Instead stifle the yawn by keeping the mouth closed, or by swallowing.

It takes just a few days for a habitual mouth breather to change to permanent nasal breathing. Increased observation of your breathing and practicing to breathe less are important elements to make this change.

Nasal breathing should be enshrined at all times and during every activity. Remember that when you mouth breathe for periods of time, you are feeding your asthma symptoms and reducing oxygenation of tissues and organs!

After the change to nasal breathing has been made, it will become uncomfortable to mouth breathe because the effects of cold dry air entering through the mouth will be felt. Often people begin to wonder how on earth they managed to go through life with a permanent, and very uncomfortable, blocked nose; a condition which is frequently, and usually unsuccessfully, addressed by the use of nasal sprays, decongestants or even an operation.

Saline Solution for Rhinitis.

The following comes highly recommended for people with rhinitis and sinusitis. Use in addition to EXERCISE 1 - the nose unblocking exercise.

- Boil a glass of water and allow it to cool until it is lukewarm
- Add a few grains of sea salt to dissolve in the water. (about 1/8 of a teaspoon. Too much can sting)
- Pour some of the salt water into the palm of your hand and snort it up one nostril.
- Wait a moment, then repeat with the other nostril.
- Continue to snort the solution into each nostril.

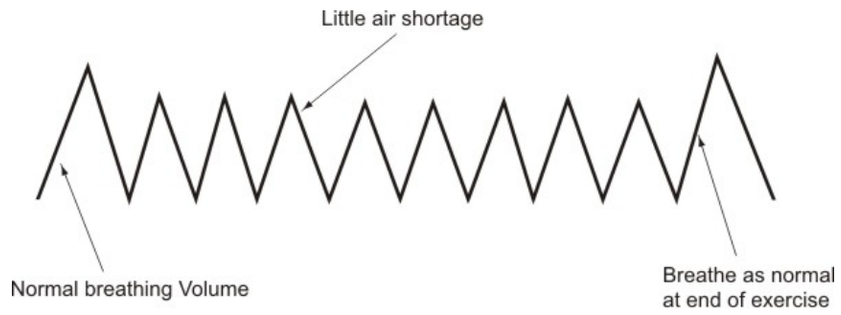
When you are finished, dry your nose with a little tissue. Your nose will be internally cleaner and less congested. Bad breath, which often originates from postnasal drip, will reduce when the inside of the nose is kept clean. (I would encourage you to do this in private!)

The usual approach of blowing your nose repeatedly involves big volume breathing and can damage the internal lining of your nose and contribute to inflammation. Using the saline solution is far more effective.

Exercise 2
How To Reduce Your Breathing

EXERCISE 2A

This is a very simple exercise to reduce the volume of your breathing. As you feel more comfortable with the concept of correct breathing and have increased observation of your breathing, then refer to appendix eight for a more detailed description.



Creating a Little air shortage

- Sit up straight.
- Monitor the amount of air flowing through your nostrils by placing your finger under your nose in a horizontal position. Your finger should lie just above your top lip, close enough to your nostrils so that you can feel the airflow, but not so close that the air-flow is blocked.
- Now, breathe air slightly into the tip of your nostrils. For example, just take enough air to fill your nostrils and no more. Breathe in a flicker of air (maybe 1cm) with each breath.
- As you exhale, pretend that your finger is a feather. Breathe out gently onto your finger so that the feather does not move.
- When you breathe out, the more warm air you feel, the bigger you are breathing. Concentrate on calming your breath to reduce the amount of warm air you feel on your finger.
- As you reduce the amount of warm air onto your finger, you will begin to feel a need or want for air.
- Try to maintain the need for air for about 4 minutes. It should be distinct without being stressful.

The need for air during this exercise should be no greater than at the end of the Control pause.

Video Exercise 2a

Creating a little air shortage.

Another way to describe the feeling is having the same level of breathlessness as during a mild walk. The only difference now is that you are sitting still. Knowing this will help to reduce any panicky feelings that may occur. Many asthmatics are uncomfortable with this as it is the same sensation that arises during a period of breathing difficulty. But don't worry, after a little practice, you will be able to maintain the need for air without getting anxious.

Your need for air should be distinct but not stressful. If your need for air is not distinct, then reduce your breathing further. If your need for air is too stressful, then breathe a little more and allow your body to relax.

EXERCISE 2B

You could also try this very simple approach. It is likely that one of your nostrils is partially blocked. To create a need for air, try to breathe through the partially blocked nostril by placing your finger over the unblocked nostril. As you block your free nostril, you will be reducing your air intake and may feel breathless. Try to maintain this for periods of 4 minutes.

Video Exercise 2b

Breathe through a partially blocked nostril.

The effectiveness of this exercise will depend on whether or not you feel suffocated.

How does your blocked nostril feel after a few minutes of breathing through it?

Routine for EXERCISE 2

Measure your pulse.

Take Control Pause.

Reduced breathing for 4 minutes.

Wait 2 minutes and take Control Pause.

Reduced breathing for 4 minutes.

Wait 2 minutes and take Control Pause.

Reduced breathing for 4 minutes.

Wait 2 minutes and take Control Pause.

Reduced breathing for 4 minutes.

Wait 2 minutes and take Control Pause.

Measure your pulse.

The CP taken at the end of the 4 sets should be about 25% higher than the one taken at the start.

Your pulse as measured at the end of the 20 minutes should be a couple of beats per minute less than your pulse measurement at the start. If your pulse is higher, then rest for a few minutes and measure again. If it is still high, then it is a sign that you were stressed during the exercise. The next time you practice Exercise 2, ensure that you do have an air shortage but place more emphasis on relaxation.

The normal resting pulse for an adult should be between 60 and 80 beats per minute. A child's pulse will be higher than this and will decrease as the child gets older.

If an adults resting pulse is 100 or higher and the CP is 10 seconds or lower, a visit to your doctor is necessary as your asthma is very unstable and you are likely to be deficient in steroids.

In order to get results from reduced breathing, it is necessary to practice 20 minutes of reduced breathing during each sitting. (Four 4-minute sessions)

A typical scenario for a person with asthma is as follows:

Pulse- 72

CP- 8 seconds

4 minutes reduced breathing

CP- 7 seconds

4 minutes reduced breathing

CP- 9 seconds

4 minutes reduced breathing

CP- 9 seconds

4 minutes reduced breathing

CP- 11 seconds

Pulse- 68

You should feel warmer as you reduce your breathing. If you don't feel warmer, ensure that you have an air shortage and that you are able to sustain it for 4 minutes at a time.

Your mind may wander, therefore keep returning your attention to creating the need for air during the exercise.

Your choice for the rest of your life is to big breathe and have asthma or to correct your breathing and reverse your condition. I usually say to my patients that if they do not put this into practice, it means that they have not suffered enough! If you are fed up with your asthma symptoms and want to make a change; then you will put this into practice.

Twenty – 30 minutes first thing in the morning is an excellent way to reverse the panting from the night before. Repeat the same during the day and last thing at night. While doing your 4 sets of 4 minutes, try to have an air shortage for the whole 4 minutes. It is not much help to reduce breathing for the first 30 seconds and then to breathe heavy for the remaining three and a half minutes.

Reducing your breathing before bed will ensure a calm and restful sleep with very good energy levels when you wake in the morning.

When you are competent with this exercise, it can be done anywhere.

While sitting up straight is the best option, creating a tolerable air shortage in any position is helpful.

Remember the more often you remember to reduce your breathing a little and create a tolerable shortage of air, the better. You can be reducing your breathing while in school or at work, or watching TV, reading a book or any activity where you can sustain an air shortage.

CHAPTER 3

Exercise 3
Getting The Best From Physical Exercise

In my experience, all asthmatics partaking in regular physical exercise have better control of their condition than those who don't. This section is about exercising safely and getting the maximum benefits from it.

The importance of exercise

There are only two ways to increase CO_2 in the human organism. The first is to reduce breathing volume, and the second is to produce more CO_2 by doing physical exercise. Nowadays most asthmatics do the opposite; they breathe heavy and because of their fear of having an asthma attack, they do little or no exercise.

CO_2 is generated through inner respiration from the process of converting food and Oxygen into energy. An exercising muscle generates more CO_2 thus encouraging the release of Oxygen from haemoglobin to that muscle. (Remember, the presence of CO_2 loosens the bond between Oxygen and haemoglobin within red blood cells)

To produce more CO_2; move your muscles!

Nasal breathing:

A low CP corresponds with a greater breathing volume and a higher risk of an asthma attack from physical exercise. As a result, never mouth breathe if the CP is less than 20 seconds. (You can have your mouth open during sports for short periods of time when the CP is greater than 20 seconds.)

All breathing should be through the nose. Initially, this might feel impossible due to the ingrained habit of mouth breathing.

But don't worry as it is easy to master. At the beginning you might find that you are not able to walk as fast as you can with your mouth open as the feeling of breathlessness will be greater. In a few days, this will pass and your walking will steadily improve. It's a case of quality over quantity.

Your breathing volume will increase during exercise. This is not a problem when there is a reasonable match with your metabolic requirements. However, the lower your CP, the poorer the match.

I often see patients with severe asthma or COPD. On the day of their first visit, they can be very breathless by the time they walk the few paces from the car park to my clinic. This is an example of a complete mismatch as their breathing volume is very large but their physical movements are minimal. After 10 minutes, their breathing calms down and I measure their CP. It is usually about 5 or 6 seconds, indicating severe overbreathing.

Remember;

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 a short period

Greatest risk of asthma attack;

The greatest risk for having asthma symptoms occur 5 minutes after commencing exercise and 10 minutes after completion. Remember; you will have an asthma attack if your breathing volume is greater than your bodily requirements.

To avoid an attack at the start of exercise;

If your breathing volume increases faster than your metabolic production of CO_2, your airways will constrict and an attack will take place. In order to avoid this, it is necessary to be able to control your breathing for the first ten minutes of exercise and the only way to do this is by a gentle warm up.

A good warm up consists of walking or gentle movements with breath holds. After ten minutes, your lungs will feel freer and you will be able to increase your pace with substantially less likelihood of symptoms. Regardless of how high your CP is, always go gently for the first ten minutes.

To avoid an attack at end of exercise;

Asthmatics continue to overbreathe after they have completed physical exercise. After cessation of exercise, ensure that you get your breathing under control. Use your mind and make a conscious effort to calm your breathing. If you find that your breathing is quite out of control, practice many small breath holds as described in Exercise 6.

Feel the need for air;

To get the most benefits from physical activity, feel a need for air or, in other words; feel breathless.

When your CP is low, it is very easy to disrupt breathing so be careful; go gently and don't push yourself beyond the point that you cannot control your breathing. At the same time, try to feel a tolerable need for air.

Video Exercise 3

Getting the best from physical exercise.

There are three ways to create your need for air with exercise.

1. Go faster with your mouth closed
2. Breathe less during exercise
3. Practice breath holds as described in EXERCISE 4

If your need for air is too much, so that you need to open your mouth, slow down and calm your breathing. By keeping your mouth closed, you will recover faster. If you're walking for exercise, it is better to walk alone or to have an agreement with your walking partner not to talk. Talking will only undo the benefits.

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

- Measure your CP before exercise
- Perform physical exercise
- Measure your CP 15 – 30 minutes after you have completed
- Your CP measurement 15 minutes after exercise should be greater than your CP measurement before exercise.

There are two points to bear in mind;

1. If your CP is measured immediately after exercise, it will probably be lower than your starting CP due to the build up of an air shortage.
2. If 15 minutes after exercise your CP is still lower than your starting CP, you were breathing excessively during exercise.

Swimming or any other activity?

Swimming has always been recognized to be beneficial for asthma. During swimming, the arms and legs are moving thus generating greater amounts of CO_2. At the same time, breathing is restricted because your face is under water most of the time. This increases CO_2 levels and dilates your airways. (Be very careful of chlorinated pools as they can trigger asthma)

But you don't necessarily have to swim. Now that you are aware of the concept of overbreathing, you can incorporate the principles of swimming by breathing less into any activity that you like.

CP and Sports;

Try to imagine a person with a very low breath hold of 5 seconds. Their breathing is going to be extremely heavy even during very gentle walking. On the other hand imagine a person with a CP of 40 seconds.

If you were to line up a sports team and measure each of their CPs, those with the lower CPs get breathless, tire more easily, produce more lactic acid and oftentimes do not have the stamina of those with a higher CP. The higher the CP, the less air required to run a specific

distance at a given pace. With each proportionate increase of the CP, physical performance will improve.

If you are a coach reading this, introduce the CP as a simple way to measure the performance of individual players. To increase performance, increase their CP.

The higher your CP, the greater your efficiency during sports

The lower your CP, the poorer your efficiency during sports

A summary of points regarding physical exercise

1. It is absolutely essential that asthmatics do physical exercise.
2. Exercise within your capabilities.
3. Never breathe through your mouth during exercise if your CP is less than 20 seconds.
4. The lower your CP, the more careful you should be while performing physical exercise.
5. Feel the need for air during physical exercise.
6. Thirty minutes to 1 hour of physical exercise per day is a wonderful aid to increase your CP.
7. Make sure to go gently with your mouth closed for the first 10 minutes.
8. Make sure to calm your breathing immediately following exercise.
9. Walk, don’t talk.

Exercise 4
Breath Hold During Exercise

This exercise involves holding your breath on the out breath while you are doing any sort of physical activity. You can do this while walking, skipping, using a trampoline, cycling etc.

The Jumps

This is a very effective exercise in addition to ensuring that your breathing is reduced, calm and gentle during the day. The length of time of breath hold will depend on the state of your health and your CP.

Caution;

If you have any conditions as listed on Note of Caution, then it is better not to do EXERCISE 4. Instead you should practice EXERCISE 6 (Many Small Breath Holds), do gentle reduced breathing and walk with a light air shortage.

Below are a number of points to be considered;

- 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 breath hold should be short. (Example below.)
- If your CP is greater than 15 seconds and you don't have any conditions as listed on Note of Caution, then your breath hold can be short or long. (Example below.)

Example of physical exercise with short breath hold - suitable for people with relatively low CP:

- While walking breathe in, breathe out and hold your breath
- Walk 10 paces with your breath held
- Resume breathing and continue to walk
- After 30 seconds to 1 minute of walking with normal breathing, repeat breath hold as above.
- Repeat small breath hold every 30 seconds to one minute

Video Exercise 4a

Physical exercise with short breath hold. (Easy)

Maintain control of your breathing throughout

Physical exercise with medium to strong breath hold. (If you have any condition as listed on Note of Caution or have a CP of less than 15 seconds, then please refrain from this exercise)

- While walking breathe in, breathe out and hold your breath
- Walk from 20 to 100 paces with your breath held
- Resume breathing and continue to walk
- After 30 seconds to 1 minute of walking with normal breathing, repeat breath hold as above
- Maintain control of your breathing throughout

Video Exercise 4b

Physical exercise with short breath hold. (Medium)

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

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

By the way, you don't have to be walking to do this. You can hold your breath doing any physical exercise. Some footballers hold their breath during training. For example, while they are doing a sprint, they hold their breath for a few steps to create a good air shortage.

If you cycle, play golf, lift weights; you can hold your breath. In addition I have used this exercise to good affect with carpenters, bricklayers, painters, plasterers, bar people, gardeners and others where physical movement is part of their job.

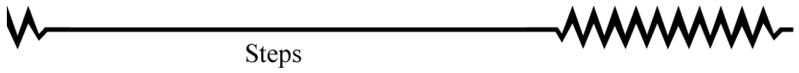
There is no hard rule as to how many times you do this. The more often you perform breath holds throughout the day the better. Larger breath holds jolt the respiratory centre and can increase an often stubborn CP.

CHAPTER 3

Exercise 5
Steps

If you have asthma symptoms such as wheezing or coughing or other health complaints such as those listed on Note of Caution, then it is better not to do EXERCISE 5.

Steps involves a medium to strong need for air and is best suited to children and to people who can easily partake in physical exercise. Results are quicker from doing either *Steps* or walking with large breath holds due to the larger air shortage that is created.



To do *Steps*, perform the following;

- Take a small breath in and a small breath out.
- Hold your breath by pinching your nose.
- Walk as many steps as you can until you feel a strong need for air.
- Try to build up a large air shortage by doing as many steps as possible - without overdoing it of course!
- When you resume breathing, it must only be through your nose and your breathing must be calmed immediately.
- After completing *Steps* your first breath will usually be bigger than normal. Make sure you calm your breathing as soon as possible by suppressing your second and third breaths.
- You should be able to recover from steps within one to two breaths. If you cannot, you have held your breath for too long.

Video Exercise 5
Doing Steps.

Count your steps to get your *Steps* score and compare each day with the previous day so that your progress can be measured. A record sheet is provided at the back of the manual to enable you record your progress.

While *Steps* involves holding your breath until a strong air shortage is experienced, it should not be stressful.

Like all breathing exercises, *Steps* should be practiced on an empty stomach. For the first few weeks, your aim is to do 20 to 30 repetitions of *Steps* each day. (For example 2 - 3 sets. Each set with 10

repetitions of *Steps*)

In addition, be aware of your breathing for the rest of the day.

The goal is for your *Steps* score to increase by 10 extra each week. From time to time you may reach a plateau but after a couple of weeks, your score will increase again.

A number of years ago, I correlated the number of steps a person could take to their CP. This is accurate for the vast majority of people. For example, a child or adult will continuously cough, wheeze and will have exercise-induced asthma until they can consistently do 60 steps. The main symptoms will have disappeared when their *Steps* score is between 60 and 80 but a trigger could produce symptoms.

The goal is for you to be able to walk 100 steps on the out breath. This will take weeks of work so don't expect it overnight. Do *Steps* within your limits and be careful not to overdo it. If you are wheezy or having a coughing attack, do not practice *Steps* as it will disrupt breathing. Instead practice *Many Small Breath Holds*. (EXERCISE 6)

Using the table below, you can chart your progress.

	CP	STEPS
Symptoms guaranteed such as coughing, wheezing, breathlessness, fatigue, colds, blocked nose.	**10**	**20- 40**
	20	**40- 60**
Main symptoms gone, but may have symptoms if exposed to a trigger.	**30**	**60 - 80**
	40	**80 - 100**

If your CP is 10 seconds, your *Steps* score will be between 20 and 40. When your CP is 40 seconds, your *Steps* score will be between 80-100. Making comparisons between CP and *Steps* is more accurate for adults than children.

Anything above a CP of 40 or a *Steps* score of 100 indicates no asthma symptoms.

Just doing *Steps* is not enough, it is also very important to ensure calm gentle breathing interspersed with periods of a slight to medium need for air throughout the day.

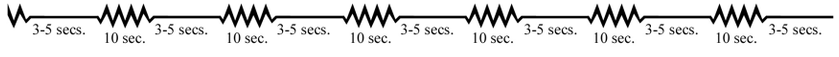
CHAPTER 3

Exercise 6
How to stop coughing and wheezing with Many Small Breath Holds.

Part A. ***How to stop coughing and wheezing with Many Small Breath Holds.***

This exercise suits everybody. It is especially suited to older people and those with severe asthma, emphysema or any of the conditions in category 2 as listed on Note of Caution. It is very useful during panic attacks, stress and asthma attacks. It will produce results similar to the old brown paper bag exercise but is a lot safer as oxygen levels are maintained.

Many Small Breath Holds can be practiced **thousands** of time per day. In fact a severe asthmatic or person with emphysema should practice this all day and into the night. It is gentle, suits older people and will dramatically reduce symptoms.



Many Small Breath Holds to reduce symptoms (attack)

Do many small breath holds of 2-5 seconds each.

- Breathe in, breathe out and hold your breath.
- Hold your breath for 2-5 seconds. Do not try to hold your breath for longer than 2 to 5 seconds because it would only increase breathing, which may aggravate your symptoms. Your maximum breath hold should be no greater than half your Control Pause at that time. (For example if your CP is 4 seconds, then do small breath hold for 2 seconds only)
- After each breath hold, breathe normally for 10 to 15 seconds. Don't interfere with your breathing.
- Continue to do a small breath hold followed by gentle breathing for 10 to 15 seconds until symptoms have passed.

Video Exercise 6

Stop coughing and wheezing with Many Small Breath Holds.

Generally an asthma attack, which is a period of breathing difficulty, does not occur without advanced notice. In most situations, the person will feel a gradual tightness of the airways, an increased blocked nose, and/or the beginnings of a wheeze etc. When one feels the first symptoms of an attack, it is very helpful to do *Many Small Breath Holds* straight away.

Very Important: Take Medication

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

After 5 minutes of an attack take your medication. (If you are having a severe attack - take your medication immediately). If you are not responding to your medication within 5 minutes, seek medical attention immediately.

Very important: these techniques are to be used in conjunction with normal day-to-day treatment. Make sure to continue your preventative medication and take relievers when necessary.

Part B. *Many Small Breath Holds* **used to stop Coughing Attack**

One of the symptoms of asthma is coughing. There is no such thing as a "productive cough" as commonly perceived. All coughing is a stress to the body, can cause vomiting, broken ribs and other symptoms. If you wish to expectorate mucus from your lungs, practice EXERCISE 1 or 6, depending on what suits you.

Some people are more prone to bouts of coughing than others. The problem is not with a once-off cough, but an episode of coughing which can be difficult to stop. Coughing attacks tend to be more frequent at night or early morning. Frequent coughing is very disruptive of breathing.

I have worked with hundreds of people who spend a large part of their day coughing and for the vast majority the cause was over breathing. When these people were taught to correct their breathing and increase their CP, their coughing was eliminated. It does not matter what type of cough you have - it can be a wet cough or a dry bark - nor does it matter when the cough takes place; it might be during the middle of the night, or while talking or during any other activity. In all cases, the frequency and duration of coughing should improve as your CP increases. You will frequently cough until your morning CP is 20 seconds or your *Steps* score is greater than 60. You will have symptoms with a trigger until your morning CP is 40 seconds and/or your *Steps* score is 80-100.

The Coughing Cycle:

Prior to coughing, you take a big breath and then cough resulting in a forced expiration of air.

This forced expiration increases breathing volume, which will result in another cough. The cycle has begun: another big breath, another cough, and another forced expiration and so the merry-go-round continues.

This cycle can be broken by taking the following approach:

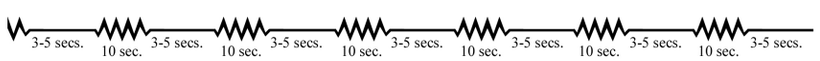
- Try to suppress your cough and not to cough at all. You will experience a ticklish feeling in your throat, but after a while the urge to cough should decline. Swallowing or holding your breath will help to curb your urge to cough.
- Do not force mucus from your lungs. Mucus protects your airways

and is part of your body's defense against Carbon Dioxide loss. Forcing it to come up without addressing your breathing will lead to the creation of more mucus.

- Instead, reduce your breathing or hold your breath and the mucus will come up naturally due to the dilation of your airways. It can then be swallowed and will dissolve harmlessly in the acid of your stomach, or you can spit it out if the circumstances are appropriate.
- **If you need to cough, try to cough only through your nose.**

The main point to remember is that the big breath and forced exhalation that constitutes a cough will only perpetuate your cycle of coughing. Being conscious of this will reduce the attack.

Remember, the more you cough, the more you will need to cough.



Do *Many Small Breath Holds* as described above until the coughing attack has stopped. This may take a few hours, especially if the cough is persistent. You will find that this exercise will greatly shorten the duration of your cough and will reduce the need for oral steroid intervention.

At my clinic, I have been able to stop the coughing attacks of many people with this exercise. It is important that you make deliberate efforts to try and calm or suppress the cough. During fits, do as many small breath holds as possible to get the cough under control.

Warning: Similar to having a wheezing attack, if you are having a severe attack, take your medication and/or seek medical attention immediately.

CHAPTER 4

Lifestyle; sleeping and diet

CHAPTER 4

Sleeping

A lower CP reflecting larger volume breathing will result in many of the symptoms below. How many do you experience?

- Snoring
- Sleep apnoea
- Disrupted sleep
- Nightmares
- Asthma symptoms (3am-5am)
- Needing to use the bathroom at about 5am or 6am
- Children wetting the bed during the night
- Fatigue first thing in morning
- Dry mouth
- Symptoms upon waking- blocked nose, wheezing, coughing or breathlessness

Tens of thousands of persons have effectively applied Buteyko Breathing to help with sleep related problems such as snoring, sleep apnea and insomnia over the past fifty years. It is no surprise that these same issues are very common amongst asthmatics as heavy breathing is a major contributor.

Snoring is not necessarily due to the airways being too small but is more likely because of the breathing volume being too large. Snoring comes in two flavours. The more simple form is heavy breathing through the mouth which causes vibrations of the soft palate. The second form is heavy breathing through the nose which creates turbulence within the nasopharynx and oropharynx causing inspiratory flow limitation.

Look and listen to the breathing of a heavy snorer- it is heavy!

Obstructive sleep apnoea is the cessation of the breath during sleep. If one is having more than five apneas per hour, it is termed as clinically significant. Breathing through the mouth and heavy volume breathing is a major cause of sleep apnea. (Read "Sleep with Buteyko" by Patrick McKeown for how to apply the Buteyko Method for sleep related disorders)

To eliminate insomnia, snoring and sleep apnea, and to ensure a deep restful sleep with quieter breathing and better energy upon waking, apply the following solutions;

Solution:

- The higher your control pause, the better.
- Reduce breathing with tolerable air shortage by relaxation for fifteen minutes before bed. This will ensure continued and deep sleep.
- No food 2 hours before bed as food increases breathing.
- A cool bedroom is best (but not cold). It is better to have no central heating in a bedroom and to ensure that your duvet or bedclothes are not excessively warm. High temperatures increase breathing. In addition, an airy bedroom is best.

- Don't sleep on your back. Instead sleep on your left hand side or tummy. Sleeping on the back is by far the worst position as there is no restriction to breathing. The left hand side is most preferred position as you breathe less.
- Ensure that your mouth is closed at night.

Sleeping on left side with closed mouth

For good health; NEVER breathe through your mouth at night.

Taping your mouth at night;

We recommend that adults and older children wear paper tape to gently keep their lips together. Paper tape can be bought at most chemists. A good brand is 3M and a suitable size is one inch. Apply it horizontally to cover your mouth. If you are unable to place it in a horizontal position, then place it vertically. Before applying, fold over a tab at either end of the tape to make removal easier in the morning. Wearing the tape at night is imperative to a good night's sleep and will significantly improve your energy levels upon waking. In fact, all the symptoms listed above will be helped by keeping your mouth closed at night. Taping the mouth is not suitable for children under 5.

If you have drunk copious amounts of alcohol or are feeling nauseas, it is not recommended to wear the tape.

It is possible that some people may, very reasonably, experience a feeling of panic at the very thought of having their mouth taped. To help overcome this, it may be helpful to put the tape on half an hour before going to bed. This should be enough time to become used to the tape and to overcome any nervousness. For the first few nights wearing the tape will feel a little strange. It may come off during the night, but at least you will have spent some hours breathing through your nose.

Continue to wear the tape until you have managed to change to breathing through your nose at night. How long this takes will vary with the individual.

What to do when your nose is blocked;

Mild nasal symptoms;

If your nose is mildly blocked before going to bed, then first clear your nose by completing the nose unblocking exercise and rinse your nose with saline solution as outlined earlier. While wearing the tape, your nose will never completely block. If you are breathing deeply during the night while wearing the tape, your nose will partially block. This is the body's defense mechanism to prevent over breathing. However, when your nose becomes partially blocked, the level of Carbon Dioxide in your body will increase and this will help to decongest your nose. If you continue to overbreathe, your

nose will become partially blocked again which will increase the level of Carbon Dioxide thus causing the nose to unblock and so on. Remember, your nose will only block completely if you switch to mouth breathing.

Severe nasal symptoms;

If you have severe nasal obstruction, you will need to implement all of the following;

- Practice half an hour of reduced breathing before bed. (If the *Steps* exercise is suitable for you, 10 repetitions will suffice.)
- You will also need to rinse your nose with sea salt and water as described earlier and wear the tape over your mouth.
- Another necessary application is to wear Breathe Right strips or a similar brand on your nose at night.
- You might not be a pretty sight with your mouth taped and a strip across your nose, but you will feel a whole lot better!

Breathe Right strips can be purchased at most pharmacies and are very helpful with nasal obstruction. They are plastic strips which, when placed on the outer part of the nose, dilate the nasal passages. These strips are a temporary measure. In time, as your nasal congestion improves you will no longer require them as you will be able to keep the mouth closed by just wearing the tape.

You will have a far better sleep with good energy levels in the morning as opposed to the groggy feeling that most mouth breathers' experience.

Recap of nasal obstruction;

- Reduce your breathing for half an hour before sleep. *Steps* are very good if you are suited to doing them. Otherwise practice whatever exercise suits you best.
- Nasal rinse with sea salt and water
- Wear Breathe Right strips or similar if nasal obstruction is severe
- Wear paper tape on your mouth at night.

CHAPTER 4

Food

Two aspects about food.

1. All food increases breathing. Be aware of the quantity that you consume. Just eat when hungry and stop when satisfied.

If your CP is less than 15 seconds, pay particular attention to when you eat, how much you eat and what you eat as food can greatly disrupt your breathing. When you commence breath retraining, you may find that your appetite is greatly reduced as your metabolism changes. With reduced appetite, you will lose weight easily and effortless. (provided that you have a few pounds to shed)

To increase CP quickly- Reduce meal consumption

2. The foods that increase breathing the most are processed and "heavy" foods such as animal protein. These foods should be limited and include sugar, tea, coffee, white bread, beef, pork, and dairy products.

Processed foods;

In the 1930s Dr. Weston Price conducted an interesting study of traditional groups and what happens when they change to a Westernised diet of processed food. When the Gaelic people, living on the Hebrides off the coast of Scotland, changed from their traditional diet of small sea foods and oatmeal to the modernised diet of "angel food cake, 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 from the diseases of civilisation reduced dramatically. [1]

The traditional diets were found to provide at least four times the minimum requirement of nutrients, while modern diets did not meet the minimum requirement.

Recognizing the fact that children became mouth breathers is significant and illustrates the link between the modern diet and chronic hyperventilation. With the child experiencing a greater demand to breathe heavier, they open their mouth to breathe thus

having a severe negative impact on the health of the child.

Processed foods are mucus forming and acidic. Throughout evolution our diet was 95% alkaline and 5% acidic. Nowadays, the reverse is true; our diet is 95% acidic and 5% alkaline. Acidic food such as dairy, meat, bread, sugar, coffees and teas are all mucus forming and acidify the blood. The body, in an attempt to maintain pH, will stimulate breathing to remove CO_2. (CO_2 is acidic)

Alkaline foods are most fruits, vegetables and water. They are breathing friendly foods. (Be careful with citrus fruits as asthmatics can be intolerant to them)

Food intolerances;

Consuming foods that you are intolerant to will reduce your Control Pause. The most common food intolerances for asthmatics are chocolate, milk, eggs, cheese and cream, wheat, citric and red wine.

In my experience the worst offender is chocolate and unfortunately asthmatics seem to love it. Symptoms might not occur immediately after eating chocolate but can take place later that day or the following day. If you do have a craving for chocolate, it is a sign that you are deficient in the mineral Magnesium. Taking Magnesium Citrate for a couple of months will eliminate your cravings. In addition, Magnesium Citrate is a natural bronchodilator and a very helpful mineral for bronchial complaints. If you require oral steroids, it is essential that you supplement with Magnesium as well as Calcium. The presence of Magnesium is vital to ensure the utilization of Calcium.

To determine food intolerances, pay attention to what foods cause your chest to become tight. For example, does your chest feel tight or do you produce endless amounts of mucus after you have a glass of milk or a couple of glasses of red wine?

Symptoms may not occur immediately after consuming the intolerant food but could occur the following day. These same foods significantly affect sinuses. If you are fond of a glass of red wine or a bar of chocolate, ask yourself will the chest tightness that you experience afterwards be worth it?

In my opinion from observing thousands of asthmatics, about 50% are intolerant to dairy products. To prevent the risk of osteoporosis, ensure that you drink sufficient water, do weight bearing exercise such as walking, jogging etc. and eat plenty of green vegetables. This is how countries with little milk consumption such as China prevent osteoporosis. In fact, brittle bones are more common in Western countries where there is large milk consumption in comparison to that of our Eastern counterparts. Wild animals don't have a problem with osteoporosis and none of them drink milk after they have been weaned. How do you think they prevent it?

Diet and CP

A good diet which consists of fruits, vegetables, fish, chicken, porridge and water will help your CP. Raw food will help your breathing more than cooked.

A poor diet consisting of highly processed, high protein foods and foods that you are intolerant to will contribute to big volume breathing and will reduce your CP. Processed foods which generate greater profit margins are frequently advertised. A rule of thumb is the more they are advertised, the more processed they are. Keep an eye out for advertisements by well-known breakfast cereal producers containing excessive chocolate, sugar and little nutritional value who bombard innocent children with their products.

In addition to eating good food, try to ensure that you drink sufficient amounts of water each day. The need for water depends on many factors including outside temperature, amount of physical exercise and diet. The color of your urine is probably the best indicator of how hydrated you are. In general, it should be of a light color. If it is dark, it is a sign that you should increase your water intake.

Try to keep an eye on your breathing during eating and drinking as it is common to draw large breaths during this time. Keep your breathing quiet and through your nose at meal times too. I'm sure that your guests will be happier too!

In light of this, addressing diet in addition to your reduced breathing is important to ensure good asthma control.

CHAPTER 5

Tailoring Buteyko Clinic To Your Needs

"To know even one life has breathed easier because you have lived-that is to have succeeded".

Ralph Waldo Emerson 1803-1882

CHAPTER 5

Summary

The course of action best suited to you will depend on the present state of your health and what exercises you like to do

If you are;

A. Not well, elderly or have a CP of less than 10 seconds then;

- Nasal breathe at all times including night time
- You will have less symptoms if you sleep in an upright position only
- Continuous heavy breathing over a six or seven hour sleep will maintain a low CP. So set an alarm clock to break your sleep every two to three hours. When you awake during the night, practice many small breath holds to help get your breathing under control.
- 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 during physical exercise beyond the point where you lose control of your breathing. For example, getting up out of bed, roll over very gently and slowly walk to the bathroom, or out of the room. While climbing a stairs, take it one step at a time and rest as often as necessary.
- Practice Exercise 6 (*Many Small Breath Holds)* throughout the day and ensure gentle reduced breathing with small to light medium air shortage. An example would be to practice two thousand small breath holds and reduced breathing for blocks of five minutes many times throughout the day. (You don't have to count each breath hold - instead try to do as many as possible) The more severe your symptoms, the greater the number of breath holds and gentle reduced breathing you should undertake.
- Reduce your breathing for minimum of half an hour first thing in the morning (to reverse your panting from the night before), half an hour during the day and half an hour before bed (to help your breathing during sleep).
- Gentle walking each day with mouth closed

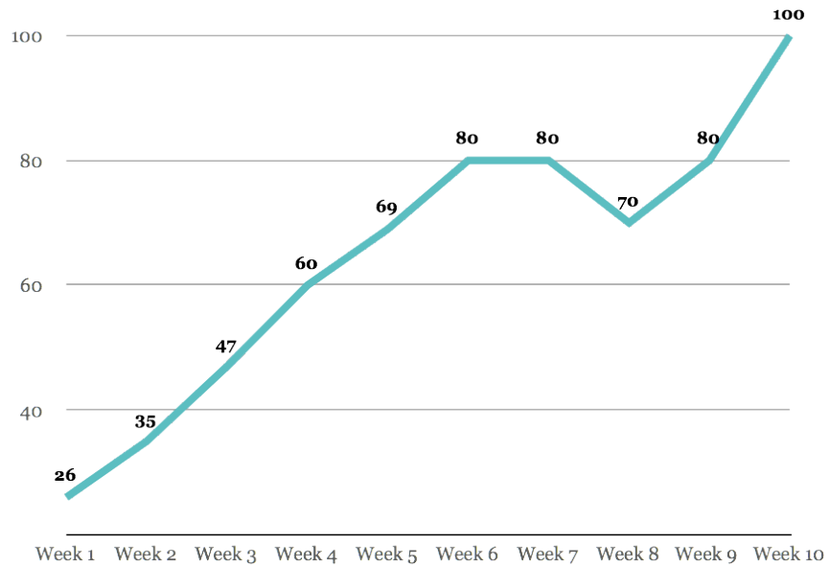
The benefits you receive will depend on what you put in.

B. a child or teenager, then;

- Use the nose unblocking exercise if your nose gets blocked
- Keep your mouth closed at all times
- Use *Many Small Breath Holds* when wheezy or coughing
- When you have no symptoms, practice 20-30 repetitions of *Steps* each day. (Ideally 10 before breakfast, 10 during the day and 10 before bed.)
- Keep a record of your *Steps* score and try to increase it by 10 each week

- Be aware of the concept of reduced breathing and ensure that your breathing is quiet 24/7
- Practice reduced breathing Exercise 2B
- Do breath holds during exercise

When your child can do 80 - 100 *Steps*, do enough repetitions to maintain this figure. For example, after a few weeks the child might be able to maintain 100 steps by just doing 3 repetitions of *Steps* each day. The *Steps* score should increase by 10 every week, with a goal of reaching a score of 80 to 100 steps.



An example of a child's progress with *Steps* is as follows;

It is relatively easy to maintain a high *Steps* score after it has been reached. This will depend on how aware your child is of their breathing. If for example, your child is not very aware of their breathing and frequently sighs, has noisy breathing, mouth breathes or has large breathing movements throughout the day, then their *Steps* score will be slow to increase. In this situation it is good practice to continuously remind the child to "ABC". (Always Breathe Correctly)

If you notice that the child's *Steps* score is decreasing, it is necessary to spend more time practicing the steps during the day. Remember that any time anybody's *Steps* score drops below 60, then all asthma symptoms will return.

Another very helpful is to perform breath holds during exercise. For example, the child can be holding their breath while walking, 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 a child, my children's book 'ABC to be Asthma Free' is a very useful aid in teaching young children the exercises through storytelling. It is full-color storybook, which a child can read in order to understand the program.

C. an adult with a very busy lifestyle, then;

- Reduce your breathing from the moment you wake up in the morning. For example, while lying in bed for a few minutes, reduce your breathing and create a need for air.
- While you are in the shower or washing your hair, hold your breath on the out breath and build up a good need for air.
- Reduce your breathing while you drive to work.
- While you walk from your car to work perform breath holds.
- If you walk during your work then do both small and large breath holds.

- Go for 20-minute walk during your lunch break. Do many breath holds throughout the walk.
- Practice 20 repetitions of *Steps* daily if you have no contraindications. (Please refer to note of caution)
- When you return from work, reduce your breathing in your car, while watching TV or reading book. Etc.

Ideally, spend a cumulative 90 minutes per day reducing your breathing and doing various exercises. The best time to reduce breathing is first thing after waking, during the day and last thing at night.

Pay enough attention to your breathing to increase your CP 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 do the exercises formally by allocating sufficient time to them each day.

A number of years ago, there was a carpenter at one of my workshops who believed he was too busy and impatient to do any of the exercises. I asked him to reduce his breathing when he was driving to and from work and to hold his breath on the out breath as he moved about the building site, climbed scaffolding, cut a piece of timber etc., and of course to keep his mouth closed at all times. Furthermore, I asked him to reduce his breathing while he was watching TV and whenever he thought of it throughout the day.

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

YOU HAVE TWO OPTIONS

Have a high CP

OR

Fight your symptoms for the rest of your life.
Ignore it at your peril!

How Much Progress to expect?

Progress is dependent on the extent to which you are observant of your breathing throughout the day. The more attention you apply to correcting your breathing and increasing your CP, the better your progress.

Remember:

- If your CP is increasing your health is getting better
- If your CP is decreasing your health is getting worse

There are only two ways to increase your CP

1. Reduce your Breathing
2. Increase your physical activity. (be careful if your CP is low)

Generally, people make great progress over the first number of weeks. This is interspersed by very good days and some bad days. Over time and with continuance of exercises, the very good days will increase in number. Bad days are similar to your asthma before you commenced the ButeykoClinic program. If you have a number of bad days in a row, spend as much time as possible on reducing your breathing. Use the small breath hold exercise and perform this about

500 times per day. At the start, a large amount of time needs to be invested but this pays off substantially as the months go by.

While this approach is relatively quick, it is not a miracle cure. The symptoms you experience will depend on your CP. As long as you understand the concept of correct volume breathing, and are able to apply it, your CP should increase by 3 to 4 seconds each week.

As long as your CP is less than 20 seconds, your asthma symptoms will be present every day. If your morning CP is between 20 and 40 seconds, you may experience asthma symptoms from a trigger. It is only when your CP is 40 seconds for 6 months that you will have no symptoms.

The degree of symptoms is proportionate to your CP. As your CP increases, your symptoms will decrease- so don't lose heart if you do have symptoms. They are inevitable as long as your CP is low. Continue with your reduced breathing and the various exercises in this book.

After a number of week's practice of the exercises and with a CP of perhaps 20 seconds, you may reach a plateau where there seems to be no improvement in your condition and 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 partake in physical exercise. If your Control Pause is stubborn, reduce your consumption of food as well. This will increase your CP more quickly.

Common asthma triggers such as; animal dander, head colds, cold weather, cigarette smoke, damp weather, dust mites, exercise, laughter, mould, pollen, pollution, and strong smells are not the cause of your asthma. They are triggers only. When your breathing is correct with a high CP and good oxygenation of tissues and organs, triggers will not be a problem.

As you are well aware, the symptoms of asthma include breathlessness, wheezing and coughing. Each symptom increases breathing volume and this heavier breathing feeds back into the condition. A vicious circle ensues as the more symptoms you have the heavier your breathing and the heavier your breathing, the more symptoms you have. For this reason, it is better to avoid asthma triggers if your CP is low.

There are a very small number of patients who tell me that they are reducing their breathing but are not making any progress. Their CP fails to increase and they have no improvements to their asthma. When I hear this, I am determined to find out why. After meeting with them again, I observe the person breathe as they talk with me. It is always heavy and I can hear their breathing. The problem is that they are not even aware of this. So try to be aware of your breathing at all times. If you are not, your progress will be minimal.

Will ButeykoClinic Work for Everybody?

Correction of breathing has a success rate of 90%. This is a remarkably high figure considering that it is totally based on patient application. No therapy ever has a success rate of 100%, not even the most successful medications.

Anyone who understands the concept of chronic hyperventilation and begins to address it will make progress. To date, I have received Emails from many people from around the world who have made very good progress from my book Asthma Free Naturally.

Correcting your breathing volume is not just beneficial for asthma. All your organs and tissues, including your brain will receive greater oxygenation. Energy levels increase, you feel a lot calmer, your

concentration gets sharper, your ability to perform physical exercise improves, and addictions decrease due to the normalisation of your metabolism.

No matter what background we come from, we all depend on feeling well and energetic to get the most from life.

Having a low CP is only "half living" as it culminates in brain fog, fatigue, stress, coughing, wheezing, breathlessness and anxiety for many people, not to mention the affect that chronic hyperventilation has on more serious conditions such as blood pressure, angina, diabetes etc. etc

Conclusion

By reading this book, you have taken the first step towards changing your asthma condition forever. It will take time, so be patient. It will take determination, so persevere. It will take observation, so be aware.

I am often amazed at the number of therapies and treatments that make claims to help asthma. In my experience, none of them will get the results that you can achieve from the information contained in this book. Furthermore, it is not pollution, the hygiene theory, margarine, trees, worms or other factors that cause asthma. Chronic hyperventilation causes asthma. But don't just believe me; address your breathing and see what happens!

It defies explanation as to why the Asthma Societies, Lung Associations and GINA (Global Initiative for Asthma) have to date not discovered the link between chronic hyperventilation and asthma. My intuition suggests that the cosy sponsorship partnership between pharmaceutical companies and the Asthma Societies may explain the continual reluctance to investigate a successful non-drug method. Pharmaceutical companies have billions of dollars at their disposal to keep all vested parties sweet. In addition, respiratory doctors and consultants are primarily trained in medical intervention and so don't know of another way. Not only this but many of these "experts" get to attend asthma conferences around the world which are sponsored by the pharmaceutical companies. Maybe it's a case of «he who pays the piper, calls the tune?» This is a pity, especially since it is at the expense of millions of children and adults worldwide.

To date, I am not even aware of any Asthma Society that encourages their members to nasal breathe. Nasal breathing not only makes sense, but is based on sound physiological evidence. All medical textbooks will describe the nose as playing a predominant role in the filtering of germs, bacteria and airborne triggers. Furthermore, it is recognized that the mouth is not nearly as effective at conditioning incoming air.

Advocating nasal breathing does not need trials. Our evolution over two million years should be enough evidence of the importance of nasal breathing. Mother Nature has provided us with a nose so let's use it!

I will close by making a plea to GINA and Asthma Societies worldwide to objectively examine the area of chronic hyperventilation and asthma. Only then will a monumental step forward be made.

"A new scientific truth does not triumph by convincing its opponents and making them see the light but rather because its opponents eventually die, and a new generation grows up that is familiar with it."

Max Planck [1]

Appendices

Appendix 1
Medication: Be aware

Medication is very important for the control of asthma. The following information regarding medication is based on regular questions I have received from concerned users. The first point I would like to make is under no circumstances should you change or reduce your prescribed medication without first consulting with a practicing medical doctor.

Medication can be divided into two main groups; reliever medication (bronchodilator) and preventer (steroid).

Reliever medication

Reliever medication is further divided into short and long-acting and comes in grey, green or blue inhalers. Short-acting reliever inhalers are to be taken only when needed and last for 3 – 4 hours. Commonly prescribed short-acting reliever medications - containing the drugs Albuterol or Salbutamol - are Ventolin and Proventil.

Long-acting reliever inhalers such as Serevent, Spiriva, Oxis and Foradil are to be taken at regular times and last for about 10 hours.

Preventer medication;

Preventer medication is predominantly steroid-based and must be taken all the time according to doctor's instructions. Preventer medication comes in red, brown or orange inhalers. Commonly used preventer medications are Flixotide, Azmacort, Becotide, Pulmicort, Qvar, Flovent, Asmanex and Aerobid.

Combination Medications;

Combinations inhalers contain two different types of asthma medication. For example the inhaler Advair contains the preventer medication Flixotide and the long-acting reliever Serevent. Another popular combination inhaler is Symbicort, which contains the preventer medication Pulmicort and the long-acting reliever Formoterol.

Medication that targets specific cells.

Leukotriene modifiers are the name given to oral tablets that target specific cells involved in inflammation. They are newer forms of medications. Examples include Singulair, Accolate and Zyflo.

Instructions for visiting your doctor to have your medication evaluated.

Over the years, I have observed thousands of asthmatics reduce or eliminate their need for medication as long as they follow the instruction contained in this book. Prescribed medication should be altered only in conjunction with a medical doctor.

Before seeking to have an evaluation of your asthma medication with your doctor, it is necessary to meet the following criteria;

1) Your Control Pause is greater than 20 seconds for 4 weeks.

2) You have no need for short acting reliever medication for 4 weeks.

3) You have no asthma symptoms for 4 weeks.

Your asthma medication should never be completely stopped at once. This is extremely dangerous. Instead, asthma medication should be gradually altered to the condition of the patient.

Asthma medication increases the CP, therefore, each time your medication is reduced a little, your CP will drop. Taking this into account; it is necessary to have a CP of at least 20 seconds before changes are made to your medication. For example if your CP is 13 seconds, and you decide you reduce your medication; your CP could drop to below 10 seconds, resulting in very unstable asthma.

It is also necessary to increase your CP to 20 seconds before you proceed from one Stage to another. (Three Stages are described below) It is only by addressing your chronic hyperventilation that you will be able to reduce your need for preventer medication.

The Stages below will depend on what medication you take. For example if you only take a preventer medication, then proceed to Stage 3. If you are taking Singulair and Advair or similar, you will need to begin at Stage 1. If you are on oral steroids, then the stages below will not apply. Instead visit your doctor or consultant for a review when you have achieved a CP of 20 seconds for at least 4 weeks.

STAGE 1

When you have no asthma symptoms, no need for reliever medication and your CP is greater than 20 seconds for 4 weeks, then request your doctor to;

- reduce or eliminate add-on medications such as Slophylin, Accolate, Singulair or Zyflo.

STAGE 2

Before proceeding to Stage 2, wait until you have no asthma symptoms, no need for reliever medication and your CP is greater than 20 seconds for 4 weeks, then request your Doctor to;

- Switch from long-acting reliever medication such as Serevent to Ventolin or Bricanyl.
- Switch from combination inhalers which contain both preventer and long-acting reliever to a separate preventer and short-acting reliever.

With a CP of over 20 seconds for 4 weeks and no asthma symptoms, you will have far less need for reliever medication. However, the combination inhalers such as Advair (Seretide) and Symbicort contain a very powerful reliever. Because it is combined, you are unable to alter it according to your needs and so may end up taking medication that you have no need for. A recommendation therefore is to ask your doctor to divide your combination inhaler into a separate preventer and short-acting reliever. Please find example below;

Replace Advair or Seretide with Flixotide and Ventolin

Replace Symbicort with Pulmicort and Ventolin

STAGE 3

At this point your medication will consist of preventer and short-acting reliever. Before proceeding to Stage 3, wait until you have no asthma symptoms, no need for reliever medication and your CP is greater than 20 seconds for 4 weeks, then request your doctor to taper your preventer medication to what you require.

The guideline with reducing preventer medication is that the dosage should never be reduced by more than one quarter at any one time. Each time your preventer medication is reduced a little, wait until your CP is back at 20 seconds for 4 weeks, you have no need for reliever medication and no symptoms before you revisit your doctor for a further decrease.

An example of reducing from 1,000 mcg per day to 0 would be as follows;

1,000 – 800 - 600- 500 - 400 –300 – 200 – 100 – 0.

Each time a reduction is made, reduce your breathing and wait until your CP has 0increased to 20 seconds for 4 weeks.

You will be able to maintain no need for preventer medication on a permanent basis when your CP is 40 seconds for 6 months. Your main symptoms will be gone when CP is 20 seconds, but a trigger may produce symptoms.

Continue to carry short acting reliever medication at all times.

When to increase inhaled steroids?

While it is beneficial to alter your medication with your doctor as your condition improves, it is even more important to make sure that you have sufficient steroid when your CP is low or when you have chronic breathing difficulties.

If your CP is less than 10 seconds and/or you need to take more than 3 puffs of Ventolin in one day, then it is a sign that you might be insufficient in steroids.

Another indication of steroid deficiency is having a resting pulse of 100 or greater over a 24-hour period. In this instance, it is advisable to visit your GP to have your steroid medication reviewed.

If so, it will be difficult to correct your breathing and increase your CP as the drive to breathe will be too strong. In this situation, the advice is to visit your doctor to have your medication reviewed.

Asthma Medications - are we informed?

Over the years, a number of questions have arisen regarding asthma medications. One asthma inhaler called Fenoterol, which was heavily prescribed in the 1970's, caused thousands of asthma deaths in New Zealand and other countries[1-3]. The Wellington Asthma Research Group of Richard Beasley, Carl Burgess, Julian Crane, and Neil Pearce first uncovered this startling link. However, before their discovery was accepted, their findings were subjected to

major criticism and obstruction from the manufacturer of Fenoterol; Boehringer Ingelheim, and more surprisingly from an Asthma Task Force which consisted of the then Professor of Medicine at the Wellington School of Medicine and three respiratory physicians.

Boehringer went to great lengths in organising lavish international meetings with carefully selected asthma "experts" to defend the drug, and bulky publicity packages were delivered to almost all doctors, pharmacists and health reporters in New Zealand. The package contained tables and other information *"which it claimed demonstrated a lack of association between Fenoterol sales and asthma deaths."* [1]

Eventually, the New Zealand Department of health took action by *"severely restricting its availability, thereby allowing an 'experiment in prevention' to be undertaken. These regulatory actions, which effectively removed Fenoterol from the market in New Zealand, were associated with a sudden and marked reduction in asthma mortality, providing further evidence for a causative role of Fenoterol in the epidemic of asthma deaths in New Zealand"*. [3]

A paper written by Professor of Medicine Evan J Begg, and published in the New Zealand Medical Journal, concluded as follows; *"In the end, this was a win to Neil Pearce and his colleagues, and to the people with asthma whose lives were saved. It was a loss for the New Zealand Asthma Task Force and for Boehringer Ingelheim, whose respective behaviours were reprehensible. While it was reasonable for them to question a new finding, particularly if it seems out of left field, it is not reasonable to use power and money aggressively to suppress data with life-threatening implications"*. [2]

Quotations regarding present day asthma medications;

Asthma has been around for about five thousand years yet *"in the 19th and 20th centuries, before 1920, death from asthma was considered to be rare by many leading authorities"*. [4]

Nowadays we are presented with a totally different picture; asthma has increased exponentially over the past 30 years and claims the lives of thousands of children and adults every year.

In the United States an estimated 3,816 people died from asthma in 2004 and 3,857 in 2005. [5] In the UK, 1,300 people died in 2005. [6] Worldwide, it is estimated that 180,000 die from asthma each year. [7]

Does this not point to the fact that something is amiss with the current treatment? Year on year, the incidence of asthma and the resulting death rate should be decreasing. Despite the billions of dollars invested in asthma research, the opposite is taking place. It is a very poor reflection on asthma authorities worldwide and hardly a success story.

I am not anti-medication, but as someone who suffered from asthma for the greater part of my life, I feel very much let down by the medical community. Despite visiting many doctors as a child, I was never shown how to breathe through my nose or practice simple exercises to address my overbreathing. If I had not stumbled across this approach at the age of 25, God only knows what my asthma would be like today. Medication has a very important role, but so has the correction of chronic hyperventilation!

In addition, a number of popular modern day medications are of particular concern, but few lay people seem to be aware of them. For example, treatments such as Advair (Seretide), Symbicort, Serevent and Singulair have all received stringent health warnings from the US Food and Drugs Administration.

Even with the most diligent scientific medical trials, results are somewhat limited due to the time frame and population samples involved. To satisfy shareholders, drug companies need to get their medication to the market as soon as possible. The question to ask is whether short-term trials involving a relatively small number of people can replicate and forewarn the results that will arise from millions of people using these same products over many years?

Below, I have compiled a number of concerns from asthma experts and the FDA about present day medications. All links to the research below are available from www.buteykoclinic.com

Regarding Advair (also known as Seretide)

"If we got these drugs off the market, we could prevent 4,000 deaths a year", argues Shelley Salpeter, a Clinical Professor of Medicine at Stanford University who says both Advair and Serevent should be recalled."[8]
Forbes News Magazine

Regarding Serevent;

"Long-term treatment with inhaled β_2-agonists may be associated with a deterioration in asthma control, potentially due to tolerance."[9]

Chest Medical Journal.

Regarding Salmeterol; (ingredient contained in Serevent, Advair and Seretide)

"Long-acting beta$_2$-adrenergic agonists, such as Salmeterol, one of the active ingredients in Advair Diskus, may increase the risk of asthma-related death. Therefore, when treating patients with asthma, physicians should only prescribe Advair Diskus for patients not adequately controlled on other asthma-controller medications (e.g., low- to medium-dose inhaled corticosteroids) or whose disease severity clearly warrants initiation of treatment with 2 maintenance therapies....." [10]

US Food and Drug Administration (FDA) March 2006

Regarding Symbicort;

"In patients with asthma, LABA medicines such as Formoterol (one of the medicines in SYMBICORT) may increase the chance of death from asthma problems. In a large asthma study, more patients who used another LABA medicine, died from asthma problems compared with patients who did not use that LABA 2medicine. Talk with your healthcare provider about this risk and the benefits of treating your asthma with SYMBICORT." [11]

US Food and Drug Administration (FDA) *Oct 2007*

Regarding Singulair

"FDA informed healthcare professionals and patients of the Agency's investigation of the possible association between the use of Singulair and behavior/mood changes, suicidality (suicidal thinking and behavior) and suicide. Due to the complexity of the analyses, FDA anticipates that it may take up to 9 months to complete the ongoing evaluations. As soon as this review is complete, FDA will communicate the conclusions and recommendations to the public". [12]

US Food and Drug Administration (FDA) *March 2008*

Appendix 2
FAQ'S

Why does my coach always instruct me to breathe in through my nose and out through my mouth?

A lot of common myths become enshrined and entrenched in our culture even though it may not be known why. It is thought that the main benefit to breathing in through the nose and out through the mouth, is to rid the body of toxins accumulated in the lungs. However, if the mouth is kept closed in the first place, a lower amount of toxins would be in the lungs. It is known that particles brought in through the mouth which arrive in the alveoli are there for 60-120 days before being removed. The disadvantage to breathing out through the mouth is that moisture is lost. Turbinates within the nose trap moisture to reduce dehydration. Mouth breathing, however, does not do this.

My friend does not have asthma, yet his CP is only 15 seconds. Why?

As you are aware, hyperventilation affects any organ or system to different degrees. Some people may have chronic fatigue, blood pressure, anxiety or a number of other complaints. Even though your friend may not have any condition now, they may develop one in years to come. While asthma is one of the earlier conditions to emerge; it is also easily reversed by correction of breathing.

My friend is fit, yet his CP is only 15 seconds. Why?

Even though your friend is fit, he is hyperventilating. It is very likely that his fitness would improve from reversal of his big breathing. I often address this question through the following analogy.

Person One – Swims underwater for a few strokes and is gasping for air.

Person Two – Swims underwater for four or five times the length of the first.

Which person is the fitter of the two?

Most people will say Person Two. You can then explain that this person has a high CP, whereas Person One has the Low CP.

Do I change my medication?

We strongly advise that people do not change their preventer medication without seeing their GP first. We recommend taking reliever medication, such as Ventolin, first when you need it. Your reliever medication is to be taken when you have symptoms - to give you relief.

My Doctor tells me to cough up mucus. Why?

Yes, your doctor believes that by forcing your body to cough, mucus will be excreted. However, if you reduce your breathing, mucus will be released from your airways effortlessly. You could also drink a little sea salt (1/4 teaspoon) in warm water which will thin mucus. Forcing coughing puts unnecessary strain on your heart, is most

disruptive to your breathing and is more problematic than wheezing.

Surely everybody is overdosed on preventer medication and therefore they would be able to reduce it without adverse affects, hence trial results?

There were also controlled groups in both trials. These groups had matched asthmatics on age and severity. They were taught conventional asthma management techniques as carried out in these hospitals by a physiotherapist. The control group in both trials experienced insignificant improvement to symptoms and reduced need for medication. If all subjects involved in the trial were on a dosage of steroid greater than what they required- the control group would have also experienced a reduction in their need for medication.

If it feels relaxing to take a deep breath then how is it considered bad?

Yes, if you tense a muscle and relax it, it feels good. If you take a big breath you are stretching your thoracic cavity and relaxing it. This contraction feels good. However, the big breath also reduces carbon dioxide levels increasing cortical excitability.

Do I need to reduce my breathing all day?

No, not all day- but try to reduce your breathing for a few minutes whenever you can. It is helpful for you to be aware of your breathing all day. On average you may take 20,000-30,000 breaths per day. This will depend on your CP. Ask yourself how is your breathing- is it big, noisy and irregular or is it calm, relaxed and gentle. Whenever you think of it, reduce your breathing. Any time you feel you are big breathing – stop it.

Can I deprive my body of oxygen by breathing too little?

It is more likely that you are depriving your body of oxygen due to overbreathing. You are big breathing until your CP is 40 seconds so you can reduce your breathing until you reach this. After 40 seconds, there is no need to further practice reducing your breathing.

If I fill the room with carbon dioxide would this help?

This is debatable. Firstly, your body will only tolerate carbon dioxide to a level that the respiratory centre can realistically tolerate. If carbon dioxide levels are greater, you will breathe harder to eliminate the excess carbon dioxide. Some trials have shown beneficial aspects to inhalation of increased carbon dioxide, others have not.

I do yoga and my instructor teaches me to big breathe. Why is this?

In some instances, I have met people who claim their asthma has got worse as a result of breathing exercises during Yoga. It seems that this depends on the instructor. If the instructor encourages big breathing then it is not good for your asthma. If on the other hand, the instructor encourages reduced volume breathing by breath holds, gentle breathing and posture then this is beneficial.

I had no improvement during the week

I always ask if their CP has improved. If they say no then the following is an appropriate answer:

You won't feel an improvement unless your CP increases more than 5 seconds. You need to place more attention on your breathing during the week.

- Are you big breathing? Is your mouth closed at night?
- Are you paying attention to reducing your breathing during the day?
- Are you breathing correctly during physical exercise?
- What is your lifestyle like?
- Are you talking all day?

Talking all day for a living is big breathing all day. Hot temperatures, processed foods, etc. all causes big breathing. If you have a lot of factors causing you to big breathe, then you need to work harder on your breathing to compensate. For example, if I am talking all day due to my work, I must do physical exercise to compensate for this.

If I am doing physical exercise, I can only go slowly with my mouth closed.

Yes, but the quality of your exercise with retaining carbon dioxide is better. If your CP is less than 20 seconds, then it is very important to keep the mouth closed as one hyperventilates easily upon the slightest exertion. When the CP is greater than 20 seconds, it is more likely that metabolic increases of carbon dioxide are greater than the loss of it. You can have your mouth open when your CP is high. There is a risk of an attack when the CP is low. To determine whether you are doing exercise correctly, your CP one hour after exercise should have increased by 25%.

I feel a constant need for air

Yes, this is because you are big breathing and are trying to take a large volume through your nose. As your CP increases, your volume decreases and the air shortage will disappear.

Do I need to stop playing sport while correcting my breathing?

Not necessarily. Try to reduce your breathing during sports. Do a line of steps before a match, ensure your CP is relatively high and keep your mouth closed as best you can.

It is very difficult to set time aside to do exercises.

If this is the case, then try to do your exercises informally. If you drive, read, watch TV or are waiting for someone, then adopt correct posture and reduce your breathing. Try to get a walk in each day. If your job involves physical labour then reduce your breathing wherever you can. Do mini steps and breath holds combined with physical activity. You will know if you are doing enough by how you feel.

If I change the number of breaths per minute surely that will correct my breathing?

No it won't. Many breathing exercises are aimed at reducing the number of breaths one takes per minute. For example, a person with a low CP could take 20 breaths per minute. Assuming each breath is 500ml, and then the volume per minute is 10 litres. If the rate was reduced to 10 breaths per minute, then each breath may increase in volume to 1 litre. In this instance volume remains the same, i.e. 10 litres.

How do I know what breathing exercises are beneficial?

If breathing volume is reduced then one feels a need for air. The CP as a result should have increased following the exercise. If the breathing exercise results in a higher CP then it is good.

Are dust mites the cause of my asthma?

No dust mites are only a trigger to your asthma and will continue to be a trigger as long as the CP is less than 40 seconds. When your CP is greater than 40 seconds, all allergic reactions will have been eliminated. (With an anaphylactic reaction, this theory can apply but it is too risky to advocate in practice.)

I have changed my diet considerably, I eat when I'm hungry, I don't eat dairy, I eat little meat and no sugars, yet my asthma is still prevalent.

Yes, you could have a perfect diet and while this will considerably help your asthma, it is only when your breathing is addressed that your asthma will cease to be a problem.

My son did your course 6 months ago and when he visited his Granny's farm, he had a severe attack. He was doing very well until then.

Yes, your sons CP would have increased resulting in elimination of his main symptoms. However, if the CP is less than 40 seconds, triggers will present a problem. It is only when the CP is above 40 that triggers will not cause symptoms and only with a CP of 40 seconds for six months, that asthma as an underlying condition is treated.

Will reduced breathing help with bronchiectasis, sarcoidosis, emphysema or bronchitis?

Yes, reduced breathing helps with any condition if symptoms include coughing, wheezing, breathlessness, mucus etc. The most effective exercise for severe airway obstruction is to do many small breath holds throughout the day and night until breathing is under control and the CP is 20 seconds. When the CP is higher, it is easier to practice other exercises such as reduced breathing. These people are often too sick to be able to reduce their breathing. Instead their instruction is to keep their mouth closed at all times, try to hide their breathing so that it cannot be heard during rest and to practice 1000 small breath holds of 2 to 5 seconds each throughout the day.

My doctor said that this theoretical basis is unfounded

In truth, nobody really knows how hyperventilation causes asthma and nobody knows what causes asthma in the first place. When hyperventilation is addressed, it results in fewer symptoms and less need for medication. The Mater Hospital trials minute volume was 14.1litres. After 12 weeks this had reduced to 9.6 litres and they found that there was a direct correlation between reduction of minute volume and reversal of symptoms.

Yes, there are many theories as to what happens. Conventional medicine sees dehydration of the epithelium as a result of hyperventilation as one of the major factors of bronchoconstriction. Others cite the role of nitric oxide being manufactured in the nose – and that nasal breathing carries nitric oxide into bronchioles thus dilating them.

Why should I stay on my steroids? Surely they have significant side effects.

Steroids are an essential part of asthma management. More fatal attacks result from under-usage of steroids and over-usage of reliever medication. Overuse of reliever medication causes irreversible damage and scarring of the airways. When your CP is greater than 20 seconds for four weeks and you have not needed your reliever medication for four weeks - then visit your GP and request that your preventer medication is decreased a little.

What is the best approach with a severe asthmatic?

If an asthmatic is very severe with a resting pulse above one hundred – it is a sign that there asthma is very uncontrolled, that they are deficient in steroids and therefore should visit their GP. It would be unlikely that they would make progress even with small breath hold exercises.

More severe asthmatics, those with emphysema, pulmonary fibrosis and COPD etc. will tend to have very big breathing. You will see it and hear it very easily. Start by explaining to your student the concept of big breathing and how to identify it. Start by saying that it is their big breathing that is causing their coughing and wheezing. Etc. etc.

Severe asthmatics will have difficulty applying reduced breathing. They may find it a little too suffocating and therefore stressful. As their breathing is so large, even a small reduction of movement will causes a large need for air. However, it is good to have them monitor their movements with their hands and try to reduce it a little. This will increase their awareness and make them more conscious of their breathing throughout the day.

The best exercise to practice is the many small breath holds of two to three seconds each every fifteen or twenty seconds. This should be practised all day as much as possible.

Recap- severe asthmatics should keep their mouth closed all the time day and night. Their exercise is to practise many small breath holds of two to three seconds each. As they feel better with a higher CP, they can practise reducing their breathing. The benefit of practising the many small breath holds is that they are non stressful, gentle and can contribute to progress.

What is the right hand rule of the Buteyko Method?

The right hand rule does not require your attention. The left hand does.

- Comfortable posture. This is achieved by sitting at corner of chair in the horse rider position. Sit up straight. Relax your shoulders with your arms down by your side.
- Right of carriage. Chair must not be too hard (deepen breathing) or too soft (not be good for posture).
- Feet under chair. Both feet must be tucked underneath chair and height of knees must be lower than diaphragm. Sitting up straight with your head looking forward. Not raised or now lowered.
- Closed Mouth
- Eyes closed but looking upwards as if looking out window at top of head. Please note that head must not lift upwards. Only pupils.

What is the rule of the rule of the left hand?

- Gradual
- Reduction

- Of depth of breathing (breathing less)
- By relaxation of the diaphragm. It is so important that the diaphragm is relaxed. The diaphragm is relaxed through tension. First draw your stomach in and feel the tension. Then let it relax. It is necessary to switch from upper chest to tummy breathing. This will ensure a relaxed diaphragm as it will be used instead of becoming tense and rigid. As you breathe in, tummy gently moves out. As you breathe out, tummy gently moves in. Tummy area should always be soft. When tummy is soft breathing will be more relaxed. If tummy gets hard, then stop reduced breathing for a while and then return to it.
- To create a slight need for air. (must feel a slight need for air of no more than your CP) Do little incomplete breaths. Imagine your chest is a glass. Instead of filling the glass full of air. Fill it three quarters full.

Appendix 3
Buteyko Research Results

Six studies have been conducted to investigate the efficacy of the Buteyko Breathing Method for asthma in the Western world. Prior to this, several trials took place in the former USSR substantiating the method, leading to its incorporation in Soviet medical doctrine. The British Thoracic Society in their May 2008 *"British Guidelines on the management of asthma"* have upgraded the Buteyko Method to "B" classification indicating that there are "high quality systematic reviews of case control or cohort studies" and "high quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal."

Please find a summary of trial results below; (Original papers and links can be found from www.ButeykoClinic.com)

1. Respiratory Journal; 2008 May;102(5):726-32. Epub 2008 Jan 31.

A randomized controlled trial of the Buteyko technique as an adjunct to conventional management of asthma.

University of Calgary, Canada. Cowie RL, Conley DP, Underwood MF, Reader PG

At six month follow up the Buteyko group had;

- Improved asthma control from 40% to 79%
- 39% of patients decreased inhaled corticosteroids
- 21% eliminated inhaled corticosteroids

2. Thorax 2006;61:651-656

Double blind randomised controlled trial of two different breathing techniques in the management of asthma (Slader et al, 2006)

At week 28:

- Reliever medication decreased by 86%
- Inhaled Coticosteroids decreased by 50%

3. The New Zealand Medical Journal. 19 May 2006, Vol 119 No 1234 (McHugh et al, 2006)

Buteyko breathing technique and asthma in children: a case series

At 3 months; Buteyko group achieved

- Reliever medication decrease by 66%
- Inhaled steroids decreased by 41%

4. The New Zealand Medical Journal, Vol 116 No 1187

Buteyko Breathing Technique (BBT) for asthma: an effective intervention **(McHugh et al, 2003)**

At 6 months; Buteyko group achieved

- Reliever medication decreased by 85%
- Inhaled steroid decreased by 50%

"Conclusions: BBT is a safe and efficacious asthma management technique. BBT has clinical and potential pharmaco-economic benefits that merit further study".

5. Journal Asthma 2000;37(7):557-64.

A clinical trial of the Buteyko Breathing Technique in asthma as taught by a video. Opat Aj, Cohen MM, Bailey Mj, Abramson Mj.

"Our results demonstrated a significant improvement in quality of life among those assigned to the BBT compared with placebo (p = 0.043), as well as a significant reduction in inhaled bronchodilator intake (p = 0.008)."

6. Medical Journal Australia 1998; 169: 575-578

Buteyko breathing techniques in asthma: a blinded randomized controlled trial. Simon D Bowler, Amanda Green and Charles A Mitchell

At 3 months; Buteyko group achieved

- Reliever medication decrease by 90%
- Inhaler steroid decrease by 49%

All six trials have shown very positive results and highlight the effectiveness of the Buteyko method for the treatment of asthma.

Is chronic hyperventilation the cause of asthma?

Doctors will tell you that asthma is caused by inflammation of the airways. When they are asked what causes inflammation, they do not know.

Judging from the trial results, which showed that on average the Buteyko group achieved a 50% reduction in the need for preventer medication within 3 – 6 months, it seems obvious that inflammation subsides when hyperventilation is addressed. After all, the purpose of preventer steroid medication is to treat inflammation! A reduction therefore in the need for preventer medication signifies that inflammation has reduced. Therefore, is it fair to surmise that chronic hyperventilation is the cause of inflammation?

Some medical doctors claim that the Buteyko method is ineffective as there was no improvement to lung function following a number of trials. The following points might help to address this concern;

1. All subjects in the Buteyko group were under medical care. Their doctors and consultants in doing their job will have brought them to a reasonably good lung function even before they commence the Buteyko Method. After all, the purpose of properly prescribed asthma medication is to improve lung function to its optimum. In this instance, it is unfair to expect significant improvements to lung function as there will be a law of diminishing returns.
2. The gold standard of measuring airway obstruction involves using a peak flow or spirometry. What is not recognized is that this measurement involves an act of hyperventilation, which causes asthmatic airways to constrict. Any asthmatic who presents themselves to hospital during an attack will only be too aware that the more they blow into the peak flow or spirometry, the more it results in coughing and wheezing. In other words, the test produces airway obstruction. In this vein, how could it be a reliable indicator?
3. The purpose of preventer medication for asthma is to improve lung function. Therefore, all things being equal, a reduction of preventer medication will cause a reduction of lung function. During each trial, preventer medication in the Buteyko Group was

altered in accordance with improved asthma control. Expecting an improvement to lung function while at the same time reducing preventer medication is completely unfeasible.

Professor Charles Mitchell was interviewed during the BBC (QED) documentary of the Buteyko Method. Regarding the Mater Hospital trials, he commented that *"asthmatics feel better, they feel much better, but because their lung function did not improve they are no better"*.

The Buteyko group in the Mater Hospital trials had 70% less symptoms, 90% less need for reliever medication and 50% less need for steroid medication. In other words they were able to maintain the same lung function after the trial but with better asthma control and far less need for medication. The control group on the other hand made 0% progress. It is interesting to note that this group was taught the hospital management program that is employed at the Mater Hospital in Brisbane. The reason why this group made no progress was because breathing volume did not change. The minute volume of both groups was approximately 14 liters at the start of the trial. After 3 months, the minute volume for the Buteyko and control groups was 9.6 liters and 14 liters respectively. Furthermore, there was a direct correlation between the reduction of minute volume and asthma symptoms. Those who reduced their breathing the most made best progress. This is the essence of reversing hyperventilation and the Buteyko Method and was indeed proven in the study.

Appendix 4
Contact Patrick McKeown

Ask author Patrick McKeown a question through the ButeykoClinic website.

www.ButeykoClinic.com

www.ButeykoDVD.com

www.ButeykoKids.com

The Buteyko Clinic site features ask practitioner a question, videos, DVD, worldwide clinics, practitioner training information and online support.

Patrick McKeown's clinics in Ireland can be found by visiting www.AsthmaCare.ie or www.buteyko.ie

Avail of a one to one Skype course with Patrick McKeown from anywhere in the world. For further details,
visit www.ButeykoDVD.com

Appendix 5
Buteyko trademark and Patents and exclusive rights

Question: Does any group or individual own exclusive rights to the Buteyko Method?
Answer: The Buteyko Method is a system of principles and scientific conclusions that are impossible to protect by patents or other legal means. There are two Russian patents pertaining to the Method. The first one is the "Method of Treatment of Hemohypocarbia" , whose restrictive action has expired (the author and owner - K.P Buteyko). The other patent is still effective; it is the "Conscious Correction of Breathing", patent (author and owner is Margarita A. Buteyko from Cheliabinsk). This patent restricts just one of the methodical elements used for teaching patients. There is no patent granted in Europe or North America.

Question: Who is Dr Konstantin Buteyko's successor?

Answer: Vladimir Konstantinovich Buteyko, Konstantin Pavlovich Buteyko's eldest son to the first marriage. He now lives in Voronezh and continues what his father began. His wife, Marina Mikhailovna Buteyko is the head physician-methodologist of the Buteyko Center in Voronezh. Vladimir and Marina have two children.

Question: Who is the wife of the late Dr Konstantin Pavlovich Buteyko?

Answer: Susanna Nikolaevna Zviagina, Konstantin Pavlovich Buteyko's second wife. She was still alive and she was his official wife till the moment of his death. She has never participated in affairs of the Buteyko Method. Other persons using the sirname "Buteyko" and claiming to be Konstantin Pavlovich Buteyko's wife is due to name change and not marriage.

Question: As a qualified Buteyko educator or practitioner, do I need an annual license in order to teach the method?
Answer: No, once you have attended a recognised Buteyko training, there is no requirement for an annual "license".

Question: Is a Russian patent of the Buteyko Method applicable outside of Russia?
Answer: No. It is only applicable for the jurisdiction of Russia. It has absolutely no validity in the United States, Canada or Europe.

Question: Does any person or group have exclusive rights to teach the Buteyko Method?

Answer: No one group has special rights to teach or administer the Buteyko method. There are many Buteyko clinics in Russia including the late Dr Buteykos' son and wife Dr Vladimir Buteyko. Their website for example is www.Buteyko.ru Dr Vladimir Buteyko is keen to keep the method freely available and not for one group or individual to claim monopoly rights.

Appendix 6
International Buteyko Clinics

www.ButeykoClinic.com
Worldwide list of practitioners including Europe, North America, and Asia, practitioner training, videos of Dr Buteyko.

www.ButeykoDVD.com
Authors Buteyko DVD, books, online courses and free videos.

www.ButeykoKids.com
Self help children's Buteyko DVD, books, free videos and other advice

www.ButeykoClinic.fr
Buteyko France

www.AsthmaCare.ie
Patrick McKeown, Ireland

www.Buteyko.co.uk
Linda Meads, UK Buteyko practitioner
Tel: 0044 1789 298290

www.AsthmaCareScotland.co.uk
Una Mooney, Scotland

www.TomHerronExperience.com
Tom Herron, Northern Ireland

www.AsthmaCare.us
Eugenia Malyshev, USA Buteyko practitioner

www.CorrectBreathing.com
Carol Baglia, USA Buteyko practitioner

www.ButeykoLearning.com
Greg Baker, USA Buteyko practitioner

www.breathingwise.com
Brenda Stimpson

www.AsthmaFreeArizona.com
Robert Litman, AZ

www.AstmaCare.dk
Denmark

www.Buteyko.gr
Buteyko Greece

www.Buteykokliniken.se
Sweden

Appendix 7
Recommended reading and viewing

Buteyko meets Dr Mew by Patrick McKeown
(teenagers and children)

Sleep with Buteyko by Patrick McKeown
How to address snoring, sleep apnoea and insomnia

Anxiety Free: stop worrying and quieten your mind by Patrick McKeown
(for stress, worry, anxiety and panic attacks)

Buteyko Clinic DVD – Complete instruction as presented by Patrick McKeown
(complete program on DVD)

ButeykoKids DVD – by Patrick McKeown
(DVD set for children)

Asthma Free naturally by Patrick McKeown

ABC to be Asthma free – How to teach young children by Patrick McKeown

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

Appendix 8
Exercise 2- Detailed reduced breathing volume

The feedback that I received from this exercise was that it was a little too detailed and readers would be unable to follow it. In addition, it is often easier to practice when the CP is 20 seconds or higher. So instead of eliminating it entirely, I have included it in the Appendix. This is the essence of the Buteyko Method. The merging of diaphragmatic breathing is my own work based on feedback from people attending my clinic. This is back-to-basics learning to correct the volume and use our diaphragm. This is how we should be breathing every minute, every hour, every day.

This exercise is the Left Hand Rule of Buteyko and is defined as "reduction of breathing volume by relaxation of the muscles involved in respiration to create a need for air." (The Right Hand Rule is correct posture with the mouth closed.) In other words, our breathing volume decreases when our breathing muscles are relaxed.

There are three parts to this exercise which all fit together. Learn the first part, then move to the second and finally the third. If you feel that you cannot master this exercise, practice Exercise 2B instead. In time as your CP increases, you can return to this exercise.

1. Relaxation of respiratory muscles
2. Learning to tummy breathe
3. Tummy breathing with reduced breathing.

Food affects your breathing, so it is best to practice this exercise on an empty stomach. (or at least not straight after eating)

This is by far the most important exercise as it trains you to be aware of your breathing volume, to make a permanent change to CO_2 levels and to relax the muscles involved in respiration.

Adopt a correct but comfortable posture. Correct posture involves sitting up straight with both feet underneath your chair. Sit in the horse rider position at the edge of the chair with your back straight and your knees lower than you hips.

Correct posture is very important in helping to reduce your breathing. If you are slouched, you will compress your diaphragm, increase tension and increase breathing volume.

For example; the following exercise illustrates just how posture affects our breathing;

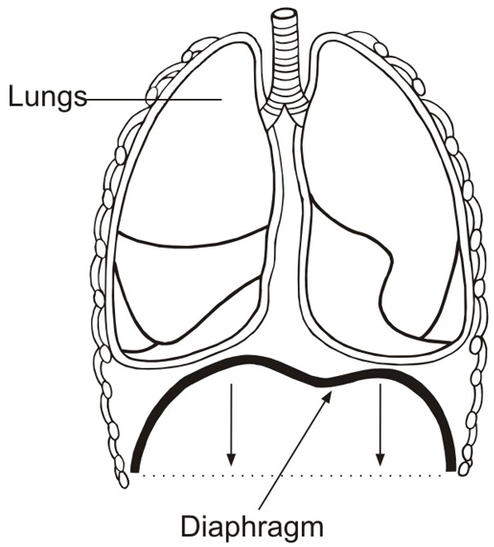
- Bend forward
- Feel how you are breathing for a couple of minutes
- Sit up
- Now feel how you are breathing
- You will find that it is a lot easier to breathe while sitting up.

The Diaphragm

Our main breathing muscle is the diaphragm. The diaphragm is a dome shaped sheet of muscle that separates our thorax which houses the heart and lungs from our abdomen which holds the intestines, stomach, liver and kidneys.

Diaphragmatic breathing is more efficient because the amount of blood flow in the lower lobes of the lungs is greater than the upper. The fast, shallow breaths of people who chronically hyperventilate results in less oxygen transfer to the blood and a greater loss of CO_2.

The good news is that diaphragmatic breathing can be easily learned.



The Diaphragm

Video Exercise 2 Advanced

Reduced breathing.

Step 1. Loosening the diaphragm

- Sit up straight. Lengthen the distance between your naval and sternum (chest). It is not necessary to force yourself into a "straight position" as this will only increase tension.
- Place one hand on your tummy and one hand on your chest.
- Place attention on the movements of your lower hand. While sitting up straight gently guide your hand outwards by pushing your tummy outwards. Push out your stomach just enough to feel the movements. Don't make any changes to your breathing at this point. This exercise is primarily to encourage diaphragmatic movement. (alternatively, you could lie on your back with both knees bent)
- Then draw (suck) in your tummy, and watch your hand move inwards. Do this simple exercise for a few minutes. This will help to activate a "dormant" diaphragm.

Recap;

- Gently push tummy out. Watch your hand move outwards.
- Gently draw tummy in. Watch hand move inwards.

Don't be concerned about how you are breathing at this point

Continue to do this for just a few minutes.

When you feel you can move your tummy in and out easily at will, proceed on to the next stage, which is to incorporate tummy movements with breathing.

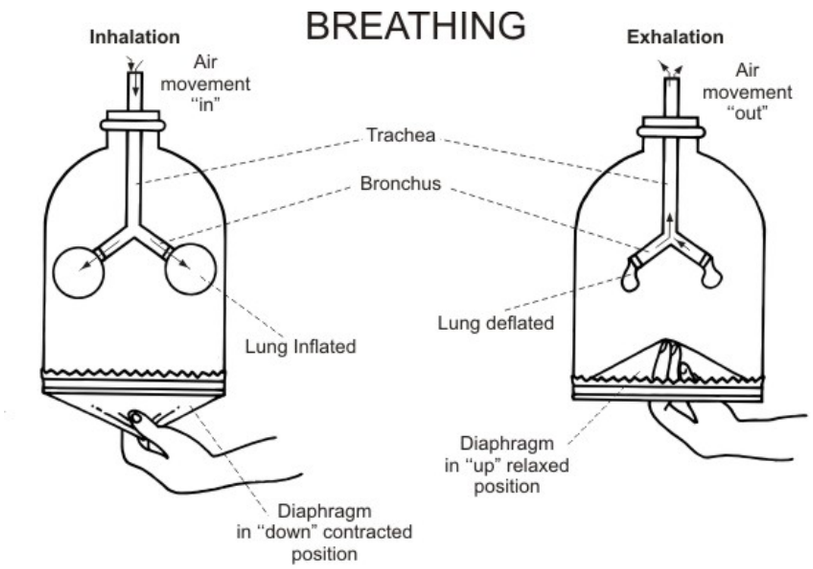
Step 2. Bringing tummy movements and breathing together;

- Place one hand on your chest and the other hand on your tummy.
- As you breathe, allow your shoulders fall to their natural position. Raised or tense shoulders increase the volume of the chest cavity and so increase the volume of air inhaled. Tension increases breathing, but relaxation decreases it.
- With the hand on your chest, exert gentle guidance using your mind and hand to reduce chest movements.
- At the same time, try to coordinate tummy movements with your breathing.
- As you breathe in, gently push your tummy outwards at the same time. Breathe as if into your belly. (Try not to make it big as it might cause dizziness)
- As you breathe out, gently draw your tummy in.

The following will also **help to relax the respiratory muscles around the tummy**. To relax any tension around the chest area, deliberately tense the area in question for a few seconds. Feel the tension and allow it to relax. If the tension is in your shoulders, deliberately tense that area and allow it to relax. Move through each area until you feel relaxed overall. To get an understanding of this, roll your hand into a fist and clench it for 10 seconds. Feel the tension in your hand and then relax. Your hand will now be more relaxed than before you clenched it. This is called relaxation through strain.

Recap:

- Breathe in. Push belly out
- Breathe out. Pull belly in



Bell Jar experiment showing "How we breathe"

Note that they move in opposite directions to each other. The reason why the tummy moves outwards with an in breath is due to the diaphragm pushing downwards and exerting gentle force on the abdomen. On the other hand, the tummy moves inwards during an exhalation due to the diaphragm moving upwards and taking pressure from the abdomen.

Step 3 NB: Bringing reduced and diaphragmatic breathing together;

When patients ask me what is more important. I say that reduced breathing is primary and tummy breathing is secondary. At the same time, the two work together as it is a lot easier to reduce breathing volume by changing the breathing pattern to diaphragmatic.

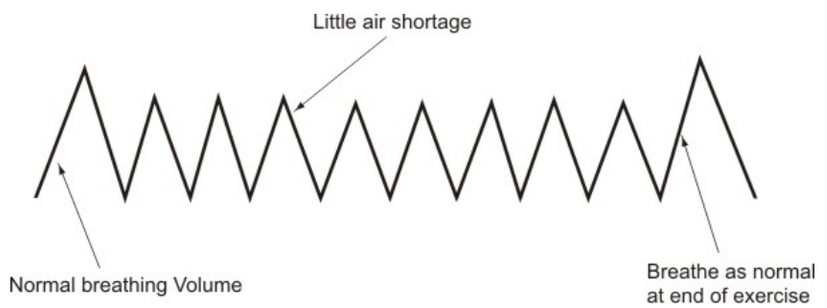
This might seem like a lot of work but the benefits that both will bring to your health are significant.

To bring the two together;

- Sit up straight as described above.
- Place one hand on chest and one hand on tummy.
- Bring attention to your breathing.
- As you breathe in, gently guide your tummy out. Use your mind and awareness to keep your chest movements minimal.
- As you breathe out, gently pull your tummy in, again keeping your chest movements quiet.
- As you tummy breathe, concentrate on making your in-breath smaller.

- With each breath, take in less air that what you would like to. Make the in-breath smaller or shorter. Try to feel the shorter breath with your hands or you could imagine your chest as a large glass. Only breathe in enough air to fill the glass three quarters full.
- Breathe out with a relaxed exhalation. While breathing out, allow the natural elasticity of your lungs and diaphragm to play their role in the exhalation. Imagine a balloon deflating by its own accord.
- As your in-breath is smaller and your out- breath is relaxed, visible movements will have slowed down. Aim to quieten your breathing. A typical session may involve reducing your breathing movement by 30% to 40%.

If your stomach gets tense or "hard", then the degree of air shortage is too much. Instead relax for a moment and when the tension dissolves, return to gentle reduced breathing.



Creating a Little air shortage

You must feel a need for air that is tolerable.

Maintain this tolerable "air hunger" for three to five minutes at a time.

The question I am often asked is whether I am doing it properly. The answer to this is as follows;

"You are reducing your breathing when you feel a distinct but non- stressful need for air".

Sometimes to reinforce this point, I say;

"Unless you feel a tolerable need for air, you will not make progress". "The need for air should be similar to that when taking your Control Pause."

The need for air should be distinct but not stressful. If the need for air is not distinct, then reduce your movements further. If the need for air is too stressful, then breathe a little more and allow your body to relax.

You are now on an Air Diet as apposed to the more commonly understood food diet. And the amazing thing is that as your metabolism improves, your need for food will reduce and those of you with a few pounds to lose will lose it easily.

Now you have mastered relaxation of the diaphragm combined with a reduced need for air. Every breath throughout the day should be diaphragmatic and quiet. Remember, this is how we breathed when we were healthy young babies. Our lips were together, and our little tummies moved in and out with each breath. This is about going back to basics.

Recap;

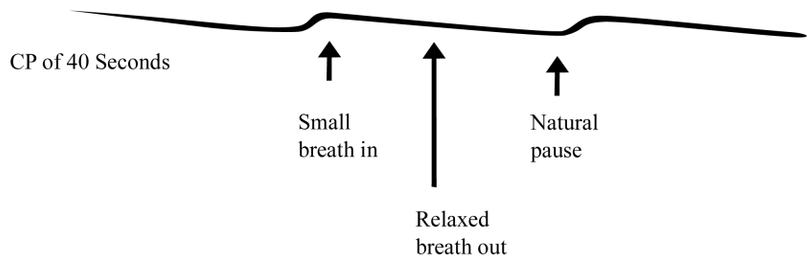
- Small breath in. Relaxed breath out.
- Small breath in. Relaxed breath out.
- Small breath in. Relaxed breath out.

A small breath simply means taking a smaller or shorter breath than what you would normally do. A relaxed breath out will tend to be slow.

Don't worry too much about the rate. Ideally, it should not increase. However, it might increase when your CP is less than 20 seconds. If the rate increases, try to calm and slow your breathing down. As your CP increases, your rate will naturally decrease.

Low CP - 10 seconds

Noisy, loud, big, erratic, irregular, effortful, tense, inefficient breathing.



Quiet, silent, small, level, regular, effortless, relaxed, efficient breathing.

Don't worry if this exercise does not work for you the first time you try it. Over time it will become easier. A gradual and relaxed approach is best, because if you try to decrease the amount of air too quickly or too much, it may cause involuntary gasps of air or cause you to take bigger breaths. It is important that you get to the stage where you can sustain reduced breathing with tummy breathing over the course of 3 - 5 minutes.

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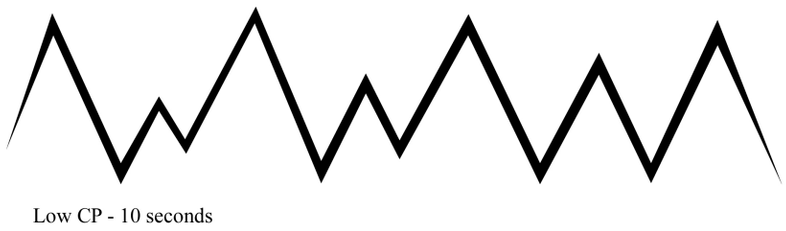
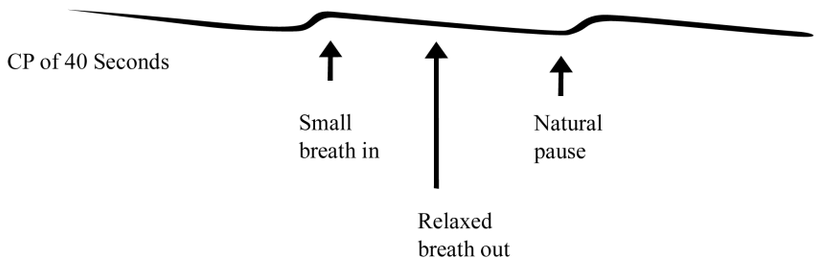
Short Summary

With asthma, our breathing volume is usually two to three times that of a normal healthy person.



Low CP - 10 seconds

Overbreathing is characterized by: breathing through the mouth, able to hear breathing during rest, loud, irregular, erratic effortful breathing, feeling a shortage for air, feeling an air hunger, frequent sighs, frequent yawns, upper chest breathing etc.

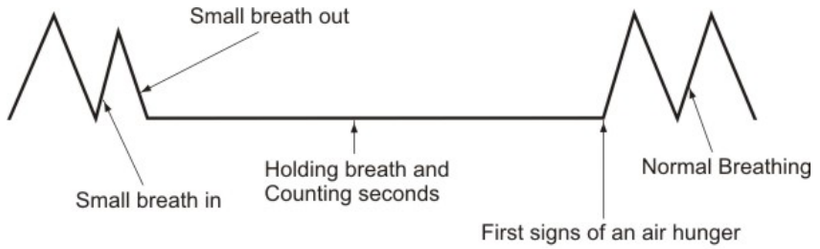


Normal breathing is characterized by: nasal breathing, calm, gentle, quiet, relaxed, regular and effortless breathing etc.

How to measure relative breathing volume

Control Pause (CP) is the length of comfortable breath hold time.

1. Gently exhale.
2. Hold your breath until you feel the first urges to breathe.
3. Your breath at the end should be calm and gentle.
4. At first urges, you may feel your diaphragm pressing downwards.



Measuring the Control Pause (a)

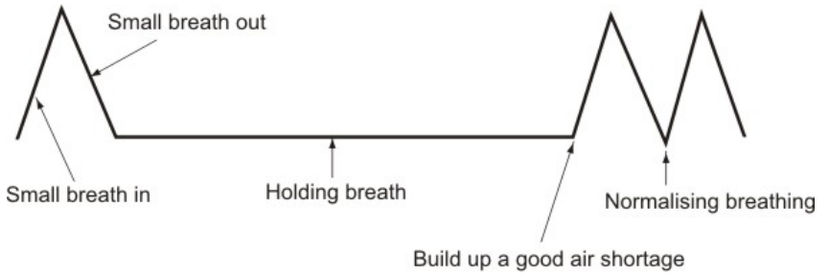
	CP	STEPS
Symptoms guaranteed such as coughing, wheezing, breathlessness, fatigue, colds, blocked nose.	**10**	**20- 40**
	20	**40- 60**
Main symptoms gone, but may have symptoms if exposed to a trigger.	**30**	**60 - 80**
	40	**80 - 100**

- No symptoms. Goal: CP of 40 seconds for 6 months.
- The lower your breath hold, the greater your asthma and rhinitis symptoms.
- You will feel better <u>each time</u> 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 seconds each week.
- Exercise is best way to increase your CP from 20 to 40 seconds. Exercise is also best way to maintain a high CP.

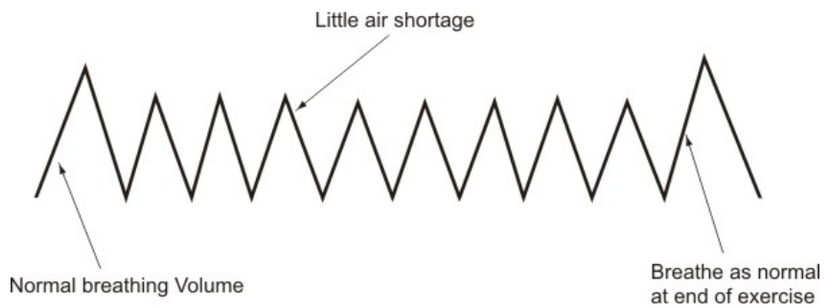
Asthma exercise format: All breathing exercises are on the out breath!

Exercise 1) Hold your breath for as long as possible to unblock your nose, shift mucus or remove constipation. Repeat breath five or six times, resting for thirty seconds between each.



How to unblock the nose naturally

Exercise 2A and 2B) Hands on chest and tummy allowing breathing to relax and become quiet. You must feel a distinct but non-stressful need for air.

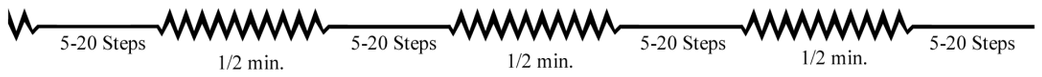


Creating a Little air shortage

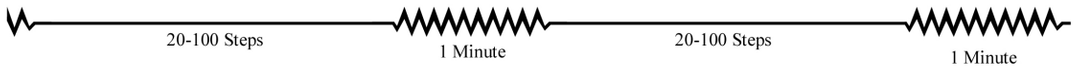
Exercise 3) Walk with your mouth closed to create a need for air. This involves walking at a pace whereby you feel a need for air, but not too much of a need that it causes you to open your mouth. In fact the lower your breath hold, the more careful you need to be during exercise.

Exercise 4) Walking with breath holds.

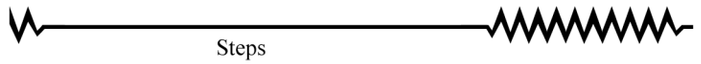
a) Walking with small air shortage



b) Walking with medium to strong air shortage

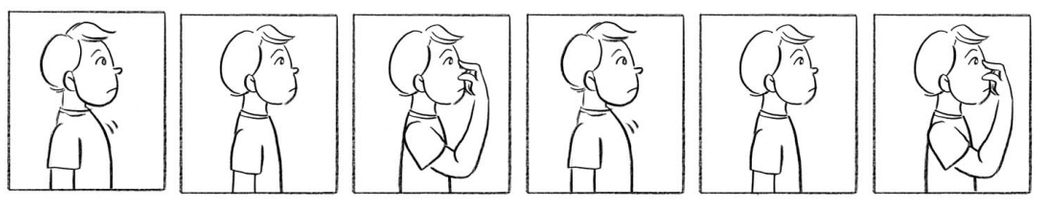


Exercise 5) Steps (suitable for children and adults with no other condition than mild/moderate asthma)



Exhale through nose. Pinch nose with fingers to hold the breath. Walk as many steps as possible while holding your breath. When you feel a strong need for air, let go of nose and resume breathing. Calm breathing as soon as possible.

Exercise 6) How to stop wheezing and coughing attack



Take a small breath in and allow a small breath out. Pinch nose with fingers to hold the breath for 2 to 5 seconds. Let go of nose and resume breathing. Breathe normally for ten to fifteen seconds. Repeat small breath hold followed by normal breathing. Continue until symptoms have passed. If you are having a severe attack or cannot stop your symptoms within ten minutes, take your rescue medication.

The three steps to increasing your Control Pause are stop losses, build deposits and accumulate:

1) Stop losses

a. Breathe through your nose permanently, both day and night

b. Stop sighing; swallow or suppress the sigh

c. Avoid taking big breaths when yawning or talking

d. Observe your breathing throughout the day. Good breathing during rest should not be seen or heard.

2) Build deposits

Practice exercises designed to reduce breathing volume. With relaxation, encourage your breathing to slow down and to become less than what it was before you started the exercise. The objective is to create a tolerable need or hunger for air. Maintain this need for air for about four to five minutes at a time. Do it while driving, watching TV, eating in school, at work, waiting in line and at every opportunity.

Steps 1 and 2 are necessary to increase Control Pause from 10 to 20 seconds.

3) Accumulate

During physical exertion, breathing volume increases, as does metabolic activity, which generates carbon dioxide. Breathing less than what you feel you need during physical exercise enables an accumulation of carbon dioxide. During physical exercise, a stronger air shortage can be created than by reduced breathing during rest. A strong air shortage is necessary to increase one's Control Pause from 20 to 40 seconds.

Breathing exercises for asthma: panacea or placebo?

Mike Pearson. Thorax 2007;62;1033-1034

"The mantra for managing asthma in the 1980s became "asthma is an inflammatory condition- prescribe an inhaled steroid".

"While the emphasis on inflammation dominated research and treatment plans, it was easy to overlook other demonstrable means of inducing bronchospasm.

Exercise-induced asthma and voluntary hyperventilation without exercise can both induce bronchospasm in sensitive individuals with relatively little inflammation".

He then goes onto say;

"Regardless of whether the answers lie in a new physiological explanation or in an understanding of psychological reactions to the presence of a disease, the finding that something has made patients feel better means we cannot ignore this challenge".