

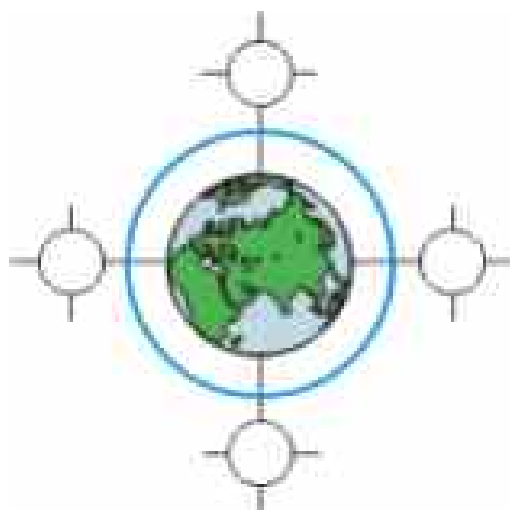
# THE BUTEYKO METHOD

*BUTEYKO BREATHING EXERCISES (BBE)*

*FOR THE REVERSAL OF ASTHMA*

By Dr. Andrey Novozhilov MD

Illustrations by Victor Lunn-Rockliffe



March 2003

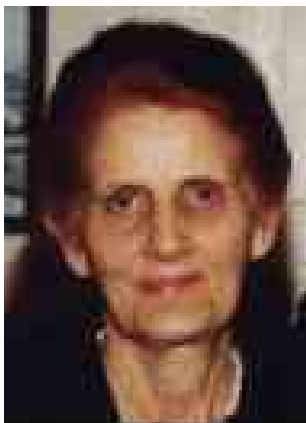
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**Dr. Konstantin Buteyko** MD, PhD, is the developer of the fundamentally new, drug free therapy for bronchial asthma, well known today as “the Buteyko method”. He is the Ukrainian born medical scientist and medical practitioner who discovered that the main cause of bronchospasm in bronchial asthma is CO<sub>2</sub> deficiency in alveolar air, resulting from hyperventilation and low metabolic activity. He demonstrated that hyperventilation is the main element in the etiology and pathogenesis of asthma

He was the first to describe this mechanism in 1962 when he worked as a Director of the research laboratory of functional diagnostics in the Siberian Branch of the USSR Academy of Medical Science (Institute of Experimental Biology and Medicine, Novosibirsk). The understanding and knowledge of this mechanism was the basis for the development of “the Buteyko method”, which reverses not only asthma but also all other hyperventilation related diseases often associated with asthma, such as bronchitis, coughing, allergy, rhinitis, high blood pressure etc.

In 1988 he established the Buteyko Clinic in Moscow, one of the first private medical practices in the former USSR.



Dr. Ludmila Buteyko, Professor Buteyko's wife, has been chief of the department of Buteyko practitioner's training at the Buteyko Clinic in Moscow since 1988. She was author of the Buteyko practitioner's training programs.

Legend has it that she can stop asthma attacks by talking to asthmatics on the phone.



Russian born Dr. Andrey Novozhilov MD, author of this book, graduated at the First Moscow Medical Institute now called the Moscow Medical Academy.

As a nine year old boy he twice witnessed his mother experience clinical death as a result of severe asthma attacks. When Professor Buteyko visited her for therapy for her asthma, he taught Andrey how to treat his mother with the Buteyko method since she could not understand the Professor. Andrey started to treat asthma with the Buteyko method at the age of nine. For the past 33 years his mother has been completely free of asthma.

After completing his studies at the First Moscow Medical Institute in 1989, he worked as a therapist and general practitioner at the Buteyko Clinic in Moscow. He is currently Head Physician and author of the Buteyko practitioner's training programs at the Buteyko Clinic.

## Acknowledgements

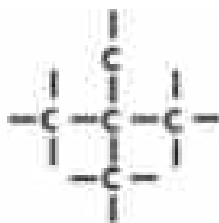
I gratefully acknowledge the contribution made to this book by English artist Victor Lunn-Rockliffe, who has volunteered his work in order to help promote a better understanding of the Buteyko method.

Special thanks also go to Patrick McKeown, Buteyko practitioner from Ireland, and Peter Kolb from Australia who helped to edit and to translate this text into English.

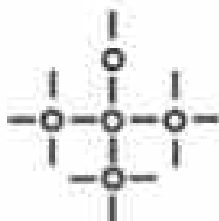
In particular I would like to thank Professor Buteyko and his wife Ludmila, who have given me much enthusiastic support in producing this book.

## Professor Buteyko's Emblem

*The emblem on the cover of this book symbolizes life on earth. Carbon is the fundamental element of organic chemistry and of all living things. Each carbon atom links with four others, to form the lattice structure.*



*The Latin symbol for carbon "C" has been replaced with a circle because the circle is the symbol for perpetual life.*



*The middle carbon atom has been replaced with the globe to signify its central importance to life on earth. The earth mass depicted in yellow on the globe is Ukraine, Professor Buteyko's homeland.*



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### **Warning**

This book is a guide to the Buteyko method. Any changes to medication may only be undertaken under the supervision and with the consent of a medical doctor. For the safe and effective implementation of the Buteyko method, advice should be sought from a Buteyko practitioner.

## Foreword by K.P.Buteyko

Two hundred years ago asthma was considered a mild ailment. Having asthma generally meant having a long life free of other diseases. But nobody could explain how asthma prevented other diseases or why asthmatics lived longer than other people.

Today we know that asthma is no ordinary disease. Bronchospasm, the main component of asthma, acts as a protective mechanism, maintaining biological constants and important functions to near normal.

And we know too that there can be no asthma and no bronchospasm unless the CO<sub>2</sub> level in the lungs is abnormally low. Since the metabolism and immune system can only function correctly if the CO<sub>2</sub> level is normal, the limit to the asthmatics' CO<sub>2</sub> loss protects them for a long and healthy life. It is this powerful defense mechanism that provides the asthmatic with an improved biological system. Evidently bronchospasm is one way the organism has been able to adapt to the modern environment.

Modern drug treatment for asthma is aimed at neutralizing this protective mechanism. The organism then fights back again and again with more intensive bronchospasm, leading to a rapid deterioration of the asthma from drug treatment

It is not possible to cure asthma by removing a protective mechanism like bronchospasm. Only when the condition responsible for the bronchospasm is removed can asthma be reversed.

This book describes breathing exercises which can be used to treat any form of asthma without drugs. Some of these are published for the first time.

There are some helpful hints such as how to stop a cough or a coughing attack. These are also published here for the first time. Coughing is one of the main symptoms of asthma, often the only one.

Every asthmatic knows well that it is difficult to stop coughing and often impossible to stop a coughing fit especially when it occurs while asleep at night.

The advice given here is a drug free coughing remedy that is quick and effective. Not only will it stop the cough but will consequently also prevent the asthma attack which often results from coughing.

Other useful suggestions include techniques on preventing hyperventilation during sleep. You will also be able to gauge accurately your chances of getting an asthma attack at night by measuring your CP before and after sleep.

In addition, a comprehensive approach to steroid therapy has been provided for the first time.

I hope this book will be useful both for asthmatics and for Buteyko practitioners.

K.P.Buteyko  
Moscow  
March 2003

# Introduction

## What is the Buteyko method?

The Buteyko Method, which includes the Buteyko breathing exercises, is a therapy for asthma that allows the control and cure of any form of asthma without any drugs or with a much reduced drug regimen.

Professor Buteyko was the first scientist to attribute constriction of the bronchioles to localized hyperventilation (or excessive “deep breathing”). This is the first stage in the development of bronchial asthma. Based on this theory, he developed a novel new therapy for asthma that reverses this hyperventilation.

Although the Buteyko method can reverse all forms of asthma of any severity since all forms of asthma result from reversible hyperventilation, in moderate and severe asthma it is sometimes necessary to use medication during the recovery process. However, medication is always gradually reduced and eventually eliminated. The exception is in rare cases when damage to the adrenal glands is so severe as a result of years of chronic hyperventilation and steroid abuse, that the adrenal glands may not recover completely and small amounts of steroid supplements will be required permanently.

In addition, full recovery is only achievable with complete patient compliance. This is often not realized in practice. The Buteyko method is not a miracle cure and does not involve any magic. It is a rationally conceived program aimed at restoring good health by correcting bad living and lifestyle habits.

## Why should I choose the Buteyko method?

1) The Buteyko method is a completely safe therapy for three important reasons, provided it is undertaken under the guidance of a Buteyko practitioner:

- a) Integral to the Buteyko method is an objective health appraisal and monitoring system based on the Control Pause.
- b) Through the use of this monitoring system, the Buteyko method seeks to restore some of the processes in respiratory function to normal
- c) It is very important to remember that today in medical practice there are no breathing exercises available that are associated with objective outcome measures.

2) The Buteyko Method stops asthma runs in families.

3) Today 60-80% of asthmatics have a mild form of asthma. In mild asthma small exacerbations, without a full-scale asthma attack, occur no more than twice a week during the day and no more than once a month at night.

- a) This level of asthma does not require any medication at all.
- b) The Buteyko Method can reverse it without any drugs.
- c) Standard drug therapy for simple asthma is one of the main reasons for asthma becoming progressively worse.

4) In the case of moderate asthma (in which over one week there are no more than three full-scale asthma attacks during the day and one at night,) and also in severe asthma, the Buteyko method enables:

- a) The prevention of recurring acute conditions without medication.
- b) The rapid reduction of medication used in standard asthma treatment.
- c) Ultimate elimination of all medication in nearly all cases.

5) There is a marked improvement in quality of life within one to two weeks. This includes being able to live a life free of symptoms and drugs.

6) The Buteyko breathing exercises (BBE) in many cases can stop coughing, wheezing, whistling, shortness of breath (which is the first step of an asthma attack), blocked nose etc, within one to two minutes, without any drugs.

7) The Buteyko Method can reverse, without drugs, any diseases which accompany asthma such as bronchitis, rhinitis, allergy and very often high blood pressure.

8) The modern standard treatment for chronic bronchitis exacerbations, with antibiotics, can lead to the development of bronchial asthma. This happens over the first half year after the condition first starts to worsen. For example, after one or two courses of antibiotics, breathlessness can appear for the first time. Doctors then prescribe drugs normally used for bronchial asthma. Chronic bronchitis cannot be treated with antibiotics indefinitely, but doctors use antibiotics when the condition deteriorates because this is the most aggressive treatment method available. The result is that the patient will suffer from breathlessness and will periodically use drugs for bronchial asthma. This is the beginning of asthma. But today the Buteyko method allows us to reverse chronic bronchitis without ever resorting to antibiotics. We estimate that some 60-70% of bronchial asthma is, therefore, a result of current treatment methods for other diseases, especially for chronic bronchitis.

9) The Buteyko Method allows us not only to prevent some of the symptoms occurring, but also to reverse asthma as a disease. Evidence for this comes from the many former asthmatics who have lived for over 30 years without asthma attacks following therapy with the Buteyko method. The reason for this is that the Buteyko method is based on a true understanding of the cause of asthma.

## **What is the basis for the effectiveness of the Buteyko treatment?**

The Buteyko method is based on a new understanding of the way asthma develops. It is known from basic physiology that one of the main causes of bronchospasm in the lungs is the low level of CO<sub>2</sub> in alveolar air. The first scientist to discover this was Ukrainian medical doctor K.P.Buteyko who worked in the Siberian Branch of the USSR Academy of Medical Science (Institute of Experimental Biology and Medicine, Novosibirsk) and who described it in 1962. He proposed a fundamentally new drug free treatment regimen, the purpose of which was to increase CO<sub>2</sub> in the lungs back to normal levels. This program stops and prevents bronchospasm and asthma attacks.

If there is not sufficient CO<sub>2</sub> in the alveolar air, it is impossible to prevent hypertonicity in the smooth muscle of the bronchi without drugs. This is the basis for bronchospasm. Therefore any standard drug approach to asthma management cannot remove asthma as a disease, but merely treats the symptoms.



## **Bronchial asthma is not a disease; it is a physiological mechanism of defense. Why is that?**

In order to adequately meet the needs of our metabolism, there has to be a close match between metabolic activity and ventilation of the lungs. This results in a normal level of  $\text{CO}_2$  in the cells, in the blood and in the air of the lungs.

If the metabolic activity is too low for the airflow, or the airflow is greater than is needed for the metabolism, there will be a shortage of  $\text{CO}_2$  in the cells, blood and in the air of the lungs. Without  $\text{CO}_2$  the whole metabolism would be destroyed. With low  $\text{CO}_2$ , various systems such as the immune system degenerate and become dysfunctional.

Under these conditions there are two possible outcomes for the organism:

- 1) It could die.
- 2) It could resort to establishing mechanisms for preventing the excessive loss of  $\text{CO}_2$ . For example, by raising cholesterol levels and atherosclerotic plaques, it attempts to prevent the loss of  $\text{CO}_2$  from the cell and from the blood. With bronchospasm it attempts to prevent the loss of  $\text{CO}_2$  from the lungs. It follows that asthma is not a disease like any other. Physiologically asthma is simply a response to low  $\text{CO}_2$  by preventing further loss of  $\text{CO}_2$  from the lungs. Asthma is a defense mechanism which saves the asthmatic's life.

## **How can you identify the main mechanisms that protect your organism?**

This can be done with the hyperventilation or deep breathing test. By monitoring the symptoms that appear first during the test, you can identify the main mechanisms that protect you from excessive  $\text{CO}_2$  loss. Any disease related to this type of protective mechanism may be the cause of natural death.

For example, if during a hyperventilation provocation test an asthmatic experiences blood vessel spasm as a first symptom, then diseases related to blood vessel spasm are more important factors in his health than is asthma.

## **Why is standard drug therapy for asthma one of the main reasons for asthma gradually becoming worse?**

- 1) Physiologically the purpose of bronchospasm as a part of asthma is to prevent loss of  $\text{CO}_2$  from the lungs. If there is a normal level of  $\text{CO}_2$  in alveolar air, nothing can provoke development of bronchospasm. This means that bronchospasm is a defense mechanism the physiological purpose of which is to maintain a normal level of  $\text{CO}_2$ .
- 2) With drug treatment for bronchospasm we try to remove this protective mechanism. However, this protective mechanism will keep on recurring.
- 3) The result is that the asthma condition deteriorates.
- 4) Unlike other diseases, asthma is simply a survival mechanism.

## **Does asthma continue to run in families if I use the Buteyko method?**

No. Asthma as a disease cannot be passed on from parents to children, although bronchospasm as a type of protective mechanisms can.

While often in asthmatic families there are children without asthma symptoms, they have other protective mechanisms such as the ability of blood vessels to spasm. This often develops into hypertension later in life.

## **How can the Buteyko method stop asthma from running in families?**


There can be no allergies or allergic reactions if the morning CP is greater than 40s.

In order to stop bronchospasm from running in families, the mother has to have had a CP between 60 and 120s before giving birth.

## How to correctly measure the level of CO<sub>2</sub> in the air of the lungs with the CP (Control Pause)


- We measure the CP only to determine the level of CO<sub>2</sub> in the air in the lungs.
- You require a stop watch or a watch with a second hand.
- The following simple rules need to be observed

Breathing before measuring CP




**STEP 1**  
Assume the correct posture with straight back.

Measuring CP




**STEP 2**  
After a normal exhalation block your nose with your fingers.

**STEP 3**  
Start your stop watch and stop your breathing until you feel the first need to breathe again. This entire breath hold must be completely effortless. The duration of this breath hold in seconds is called the Control Pause.




**STEP 4**  
As soon as you feel the first need to breathe again, open your nose and resume breathing. The depth of the first inhalation must be as it was before you started the breath hold.



If your first inhalation after measuring your CP becomes deeper then the measurement is incorrect. **The main sign to look for in determining the CP is that depth of the first inhalation at the end of the breath hold is no deeper than the inhalation before the breath hold.**

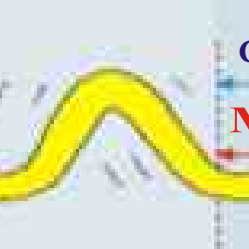
Sometimes, while attempting to measure the CP, you will actually be measuring the so-called maximum pause (MP). The MP consists of two parts. The first part is the CP while the second is a volitional breath hold called the Volitional Pause (VP).

Breathing before measuring MP




**STEP 1**  
Assume the correct posture with straight back.

Measuring MP




**STEP 2**  
After a normal exhalation block your nose with your fingers.

**STEP 3**  
Start your stop watch and stop your breathing until you feel the first need to breathe again. This entire breath hold must be completely effortless. The duration of this breath hold in seconds is called the Control Pause.



**STEP 4**  
As soon as you feel the first need to breathe again, open your nose and resume breathing. The depth of the first inhalation must be as it was before you started the breath hold.



**The main characteristic of the MP is that your first inhalation after measuring becomes deeper than it was before.**

Remember that the level of CO<sub>2</sub> in the air of the lungs can only be measured with a CP and not with an MP. You can use the MP or “breath hold” to increase the level of CO<sub>2</sub> in the air of the lungs as a type of Buteyko breathing exercise.

## Possible mistakes

- 1) After the first desire to breathe again you continue to hold your breath or with some effort. This is not a CP, but an MP.
- 2) Measuring the CP immediately after doing BBE instead of waiting for 3 to 5 minutes. This is because right after BBE you automatically experience a slight air shortage. This will produce a lower CP.
- 3) Altering your breathing in some way before measuring your CP. You need to measure your CP under standard conditions such as by maintaining your usual breathing pattern.

It is necessary to set standard conditions for measuring the CP. “Standard conditions” refers to normal breathing when you are not paying any particular attention to your breathing. Therefore, after doing breathing exercises you need to rest for a few minutes in order to revert to your normal breathing before you can measure your CP. This is important, since immediately after breathing exercises you will still be experiencing a feeling of air shortage. This will produce a falsely low CP. It is particularly important, after physical exercise to rest in order to restore normal breathing before you measure CP.

The “**morning CP**” is particularly significant.

The Morning Control Pause or “Morning CP” is measured in the morning after a night's sleep. It is a more important index of health than your CP during the day.

The CP can vary significantly during the day. For example, before dinner you may have a CP of 40, but after dinner this could drop to 20. The question is which is the real CP? For this reason we use the morning CP as the baseline reading since we cannot control our breathing during sleep. This is why the morning CP provides the baseline reading for your health. For example, if you have a CP of 20 to 40 seconds during the day but your morning CP is only 5s, then your genuine CP is 5s. Your bigger day-time CP is irrelevant.

When I tell my patients that asthma attacks will stop if they have a CP greater than 20s, this means that they must have a morning CP more than 20s. It is not important what CP they have during the day. Often asthmatics have a CP of 30-40 seconds during the day, but they still have asthma attacks, because their morning CP is less than 20s.

The only thing we need in order to measure CO<sub>2</sub> level is the CP, and this is all that it is used for. It enables CO<sub>2</sub> to be measured without any instruments. While Professor Buteyko had a fully equipped scientific laboratory, the CP was never mentioned since he had enough instruments for measuring CO<sub>2</sub>. However, when his laboratory was destroyed, he had to invent a new way of measuring CO<sub>2</sub>. This is how he developed the CP concept.

In some books on the Buteyko method, other types of “pauses” or “breathe holdings” have been mentioned. These are defined as follows:

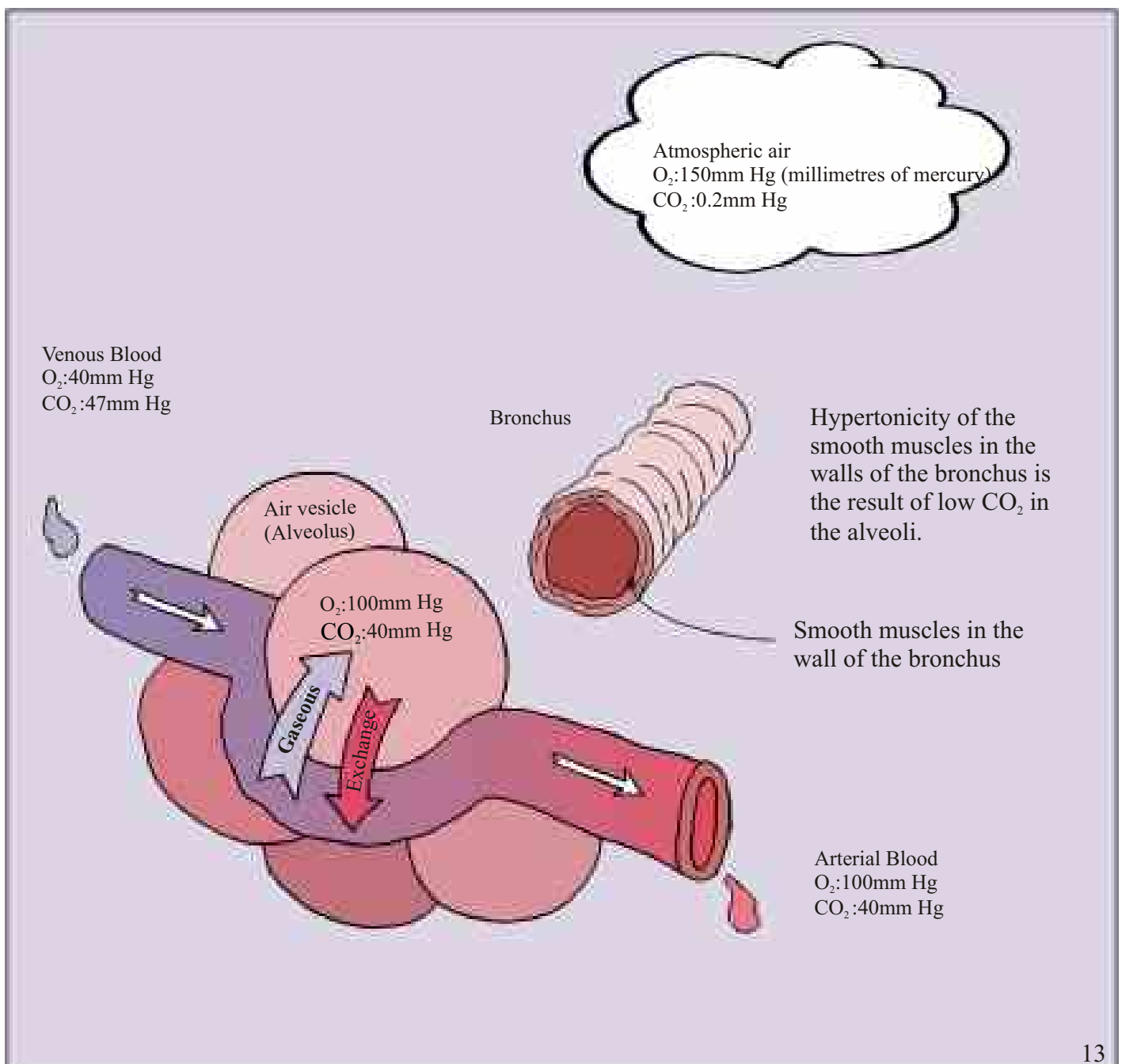
- a) EP - anything longer than a CP but shorter than an MP.
- b) MP - the maximum length you can hold your breath and on resumption of breathing you are able to force your breathing through volitional control into the pattern of breathing you had before the breath hold..
- c) AMP - Absolute (or Ambulance!) Maximum Pause where you hold your breath for absolutely the longest period you can possibly manage and where on resumption of breathing it is no longer possible to force your breathing into the pattern before the breath hold.

Anything that is longer than a CP we call a “breath hold”. There is no scientific information that comes out of such breath holds. But we can use them to temporarily raise CO<sub>2</sub> levels.

## Why is there a difference between the CO<sub>2</sub> levels in the lungs and in the blood of asthmatics?

A frequently asked question is why the Buteyko method, the aim of which is to decrease lung ventilation, can be applied for the treatment of asthma when blood CO<sub>2</sub> is high. In fact, usually doctors recommend increased lung ventilation in order to reduce blood CO<sub>2</sub>, the concern being that the high CO<sub>2</sub> is due to insufficient ventilation. However, increased breathing usually provokes bronchospasm so that the CO<sub>2</sub> in the blood remains high. This presents a dilemma for doctors.

In 1962 Dr. Buteyko, for the first time, explained that the difference between blood and lung CO<sub>2</sub> which exists in some asthmatics is caused by damage to lung tissue resulting in a deterioration of the gas exchange process in the lung. In this case the increased ventilation causes a deficiency only in lung CO<sub>2</sub> resulting in hypertonicity of the smooth muscle in the walls of the bronchi, provoking bronchospasm.



The accompanying diagram approximately represents the gas exchange in the lungs with normal indices of CO<sub>2</sub> and O<sub>2</sub> in alveolar air and blood. But in asthma these indices are not normal. Usually asthmatics have consistently very low levels of CO<sub>2</sub> in alveolar air while the CO<sub>2</sub> in the blood can be low, normal or high depending on the severity of asthma. The consistently very low level of alveolar CO<sub>2</sub> is a result of chronic alveolar hyperventilation. The high level of CO<sub>2</sub> in the blood is a result of destroyed or damaged lung tissue resulting in a deterioration of the gas exchange process in the lung.

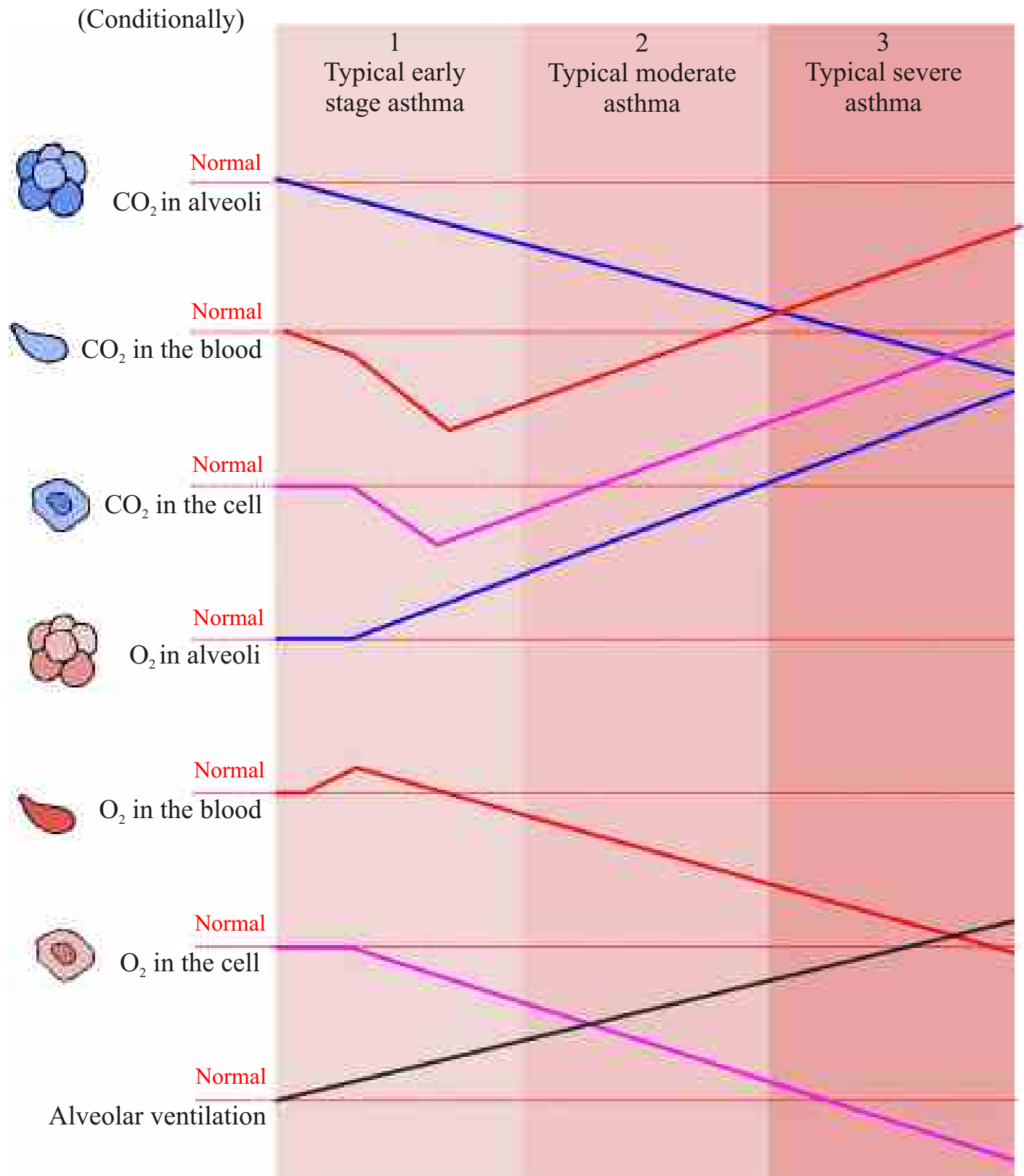
In healthy individuals or in individuals with early stage asthma, if the lung tissues are normal and normal gaseous exchange takes place through the alveolar membranes:

- 1) Alveolar CO<sub>2</sub> can be measured at the end of a normal exhalation. This is the same as the CO<sub>2</sub> level in the blood.
- 2) In early and mild asthma, if the lung tissues and alveolar membranes are normal, both alveolar and blood CO<sub>2</sub> are low.
- 3) In healthy individuals the alveolar CO<sub>2</sub> level is around 40mm Hg. It is never this high in asthmatics. The reason for the low level of CO<sub>2</sub> found in the lungs is chronic hyperventilation. This results in low levels of CO<sub>2</sub> in the blood.
- 4) It often happens that end tidal CO<sub>2</sub> measurements appear to show higher than usual CO<sub>2</sub> levels in alveolar air. This happens when there is an unnaturally long exhalation. In this event the air closest to the blood and richer in CO<sub>2</sub> enters the gas analyzer, which will show a higher percentage of CO<sub>2</sub> in the alveoli than the average value. For this reason it is important to measure CO<sub>2</sub> correctly after a normal exhalation, especially if there is normal gas exchange in the lungs.

If the lung tissue has changed and the gas exchange process has deteriorated:

- 1) In asthma of any severity alveolar CO<sub>2</sub> is always very low. CO<sub>2</sub> in the blood is high in severe asthma and occasionally in moderate to mild asthma. This results from destroyed tissue in the lungs and a deterioration of gas exchange in the lung. Pulmonary emphysema and pneumosclerosis can often cause arteriovenous shunting in the lung. In this condition the destruction of the lung tissue in some areas of the lung prevents normal gas exchange, resulting in the venous blood from these areas, with its high CO<sub>2</sub> and low O<sub>2</sub> content, effectively being shunted back into the arteries.

## Approximate scheme of changes of concentrations of CO<sub>2</sub> and O<sub>2</sub> in alveoli, in the blood and in the cells depending on changes in tissue of the lungs and deterioration of gas exchange in the lungs



## Why is it important to know the level of CO<sub>2</sub> in the alveolar air only?

One of the main characteristics of bronchial asthma is hypertonicity of the smooth muscle of the bronchi, resulting from low alveolar CO<sub>2</sub>.

If you are aiming to prevent an asthma attack you need to have a normal level of CO<sub>2</sub> in the lungs.

At the same time CO<sub>2</sub> in the blood can be high or normal. The level of CO<sub>2</sub> in the blood is not relevant in the development of bronchospasm and asthma attacks.

## The two main reasons for the low level of CO<sub>2</sub> in the alveolar air

The understanding on which the Buteyko method is based provides two main reasons for the low level of CO<sub>2</sub> in the lungs of asthmatics:

- 1) “Chronic alveolar hyperventilation” or “deep breathing”.  
Too much air flows through the lungs, removing excessive amounts of CO<sub>2</sub>. This leaves alveolar air depleted of CO<sub>2</sub>.
- 2) Low metabolic activity  
This means that CO<sub>2</sub> production is low.

## The three main ways to normalize the level of CO<sub>2</sub> in the alveolar air

There are three important ways to normalize the level of CO<sub>2</sub> in the lungs:

- 1) **The first way** is to reduce the air flow using volitional control with special Buteyko breathing exercises. The Buteyko breathing exercises, as parts of the Buteyko method, allow you to match lung ventilation to the needs of your metabolism.
- 2) **The second way** is to increase muscle activity, due to CO<sub>2</sub> being one of the end products generated by our metabolism.
  - a) This is the more natural way, but it is very important that when you increase muscle activity you ensure that you control and limit the rate at which air flows through your lungs.
  - b) If you already hyperventilate you cannot increase the level of CO<sub>2</sub> by engaging in sport because breathing will increase more quickly than the level of CO<sub>2</sub> being produced thereby provoking an asthma attack. Buteyko breathing exercises help you to match your lung ventilation to your metabolic needs during sport (see “How to reverse asthma using physical exercise”).
- 3) There is also **a third way** to normalize the level of CO<sub>2</sub> in the alveolar air:
  - a) Try to find out what is causing your deep breathing.
  - b) Once this has been identified, it will be possible to decrease breathing by eliminating the cause.

For successfully reversing deep breathing it is advisable to have an understanding of the factors that affect your metabolism and breathing.

If your baseline level of CO<sub>2</sub> in the alveolar air is already low, then any further reduction in CO<sub>2</sub> caused by overeating, too much sleep etc., can result in an intensification of deep breathing and provoke an asthma attack (see “How to prevent hyperventilation during Sleep”).



The Buteyko method includes advice on diet, sleeping, taking part in sport without asthma and speaking without over breathing and asthma. It is important to control your breathing in any situation even if you drive a car, dance, make a declaration of love, visit a Bank etc..

Any factors which can increase ventilation of the lungs can provoke an acute asthma attack because bronchospasm is one of the possible protective mechanisms against the excessive loss of CO<sub>2</sub>. If we exercise our muscles sufficiently during the day, and if ventilation of the lungs is commensurate with metabolic activity, then these factors are less significant because of the high normal CO<sub>2</sub> level resulting from an active metabolism. Thus, factors relating to diet, sleep etc become unimportant.

## **We have many Olympic athletes who eat well and are physically very active, but have asthma. Why is that?**

Such athletes ventilate their lungs more than their metabolism requires. As a result, the asthma defense mechanism becomes operative. They are unable to increase CO<sub>2</sub> with muscle activity because their ventilation increases more rapidly than the CO<sub>2</sub> is produced. They need to do Buteyko breathing exercises to restore the balance between CO<sub>2</sub> production and ventilation.

## **When and how much time do you need to do the Buteyko breathing exercises?**

There are two answers.

### **If you are experiencing symptoms**

#### **1) When do I need to do the Buteyko breathing exercises?**

You need to do Buteyko breathing exercises (BBE) if you have any symptoms of hyperventilation related disease. It is not very important what kind of the Buteyko breathing exercises you do.

#### **2) For how long should I do the exercises?**

Until the symptoms disappear.

For example, if you have a headache you need to establish a slight but comfortable feeling of air shortage through relaxation. This needs to be maintained until the headache disappears. If the feeling of air shortage is too strong, the headache will become more severe for a good 5 10 minutes before it disappears.

If you have rhinitis and a blocked nose you need to establish a medium or strong feeling of air shortage if you want to rid yourself of these symptoms quickly. It is especially desirable to do physical exercise with breath holding. Stop breathing; block your nose with your fingers and start walking, running or jumping while developing a strong feeling of air shortage. Once this feeling is strong you must unblock your nose and resume breathing gently, taking care to avoid a deep first inhalation. You must continue walking, trying to relax and calm your breathing quickly. As soon as you have calmed your breathing you must repeat the physical exercises with breath holding.

Symptoms of rhinitis will disappear on average within 1 to 5 minutes. This means that your nose will become dry and you will be able to breathe easily. Once your nose is unblocked you need not continue with the Buteyko breathing exercises because your symptom will have disappeared.

If you feel this symptom again after 20 minutes you need to do the exercises again **until the symptom disappears**. If you don't have symptoms it is not necessary to do the exercises. It is very important to be able to overcome the symptoms of a disease. This forms the basis of treatment for a disease.

## If you are not experiencing symptoms

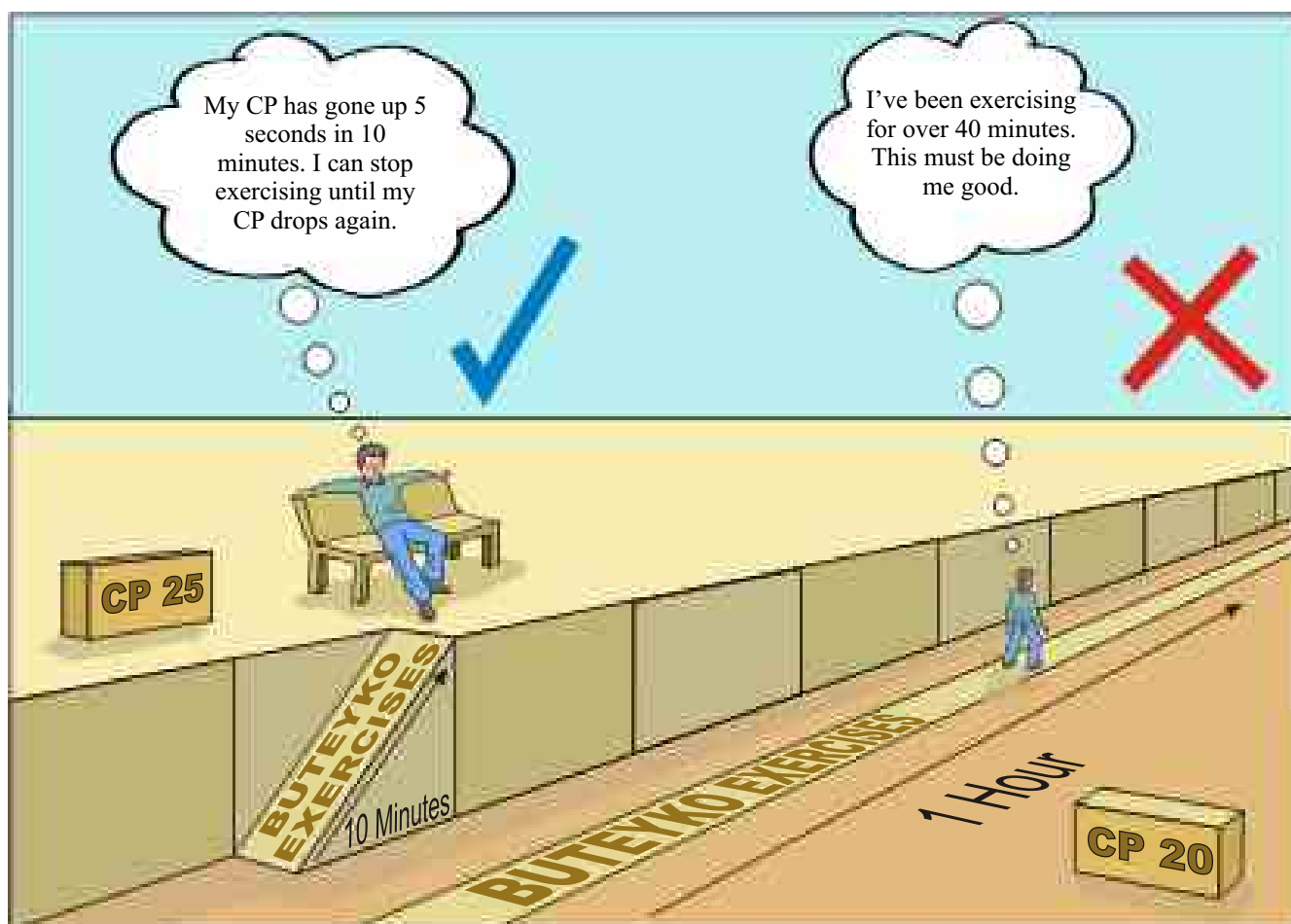
If you don't have any symptoms of disease you need to do Buteyko breathing exercises until your CP becomes higher by more than 5 seconds than it was before. You need a difference of at least 5 seconds to ensure that your CP really has become bigger. Smaller differences could be due to measurement error.

Remember that you may only measure your CP 3-5 minutes after doing BBE and not immediately after. This is because right after BBE you automatically experience a slight air shortage. This will produce a lower CP. Don't worry about this but take a rest and resume normal breathing without any feeling of air shortage. Measure your CP again after your breathing has settled.

It is not important how much time you spend doing BBE. But it is very important to ensure that the CP after BBE is higher than it was before. This is one of the basics of the treatment. I usually tell people that if they cannot raise their CP they will never reverse their asthma.

If you need five minutes to increase your CP it means that 5 minutes is enough for you at one sitting. As a rule your CP decreases after 1-2 hours and you will need to increase it again and again..In reality you can spend anything from 1 to 24 hours doing BBE during a day.

You may do Buteyko breathing exercises in many short 3-5 minute bursts throughout the day with rests in between. The aim is not to spend any particular amount of time on these exercises, but to ensure that the CP is increasing.



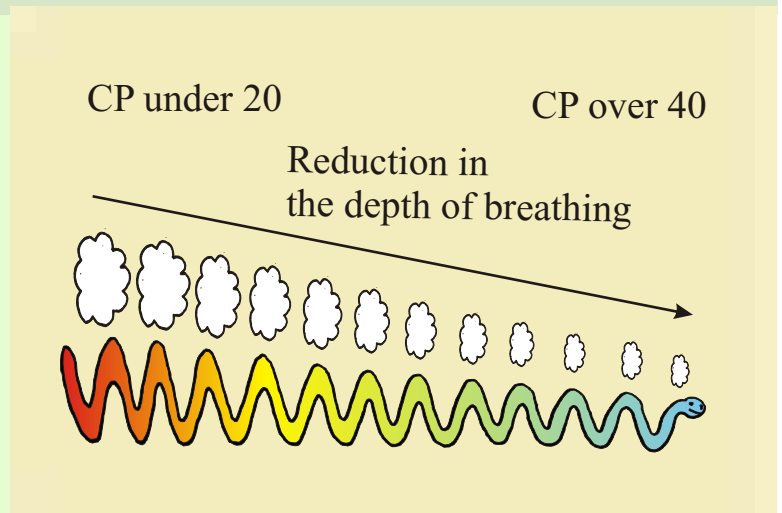
## Buteyko method and diet

It is important to remember that diminution of the depth of your breathing is the basis for the therapeutic effect of any diet. If diet doesn't change your breathing you will not derive any therapeutic benefit from it. You can see the effect of the diet on your health by measuring your CP. A good diet will increase your CP without BBE.

## Buteyko Breathing Exercises (BBE)

The main aim of any Buteyko breathing exercises is to reduce the volume of air which flows through the lungs every minute. This allows the build up of CO<sub>2</sub> back to normal thereby stopping and preventing bronchospasm.

When this aim is realized, there will automatically be a restoration back to normal of the metabolism and the immune system. For example, if your morning CP is more than 40 you can be assured of being free of viral infections, etc.



We can only treat this by changing the depth of breathing, not the breathing rate. Therefore, in order to reduce air flow resulting from deep breathing, you need to reduce the depth of every inhalation to normal.

Of course, there is a connection between depth of breathing and respiration rate:

- 1) Deep and rapid breathing tend to go together. If an asthmatic has a CP of 5-10 seconds he usually has a respiration rate of 20 to 50 breaths per minute.
- 2) When you have a CP of 60s you typically take only 3-5 breaths per minute and automatically leave a short (automatic) pause between breaths. This automatic pause can be from 10 to 20 seconds with a breathing rate of 3-5 breaths per minute.
- 3) The first automatic pause in the breathing will appear when you have a morning CP of 15s. A morning CP of 15s with an automatic pause of 1s means that you automatically hold your breathing for 1s after each exhalation.

There are two reasons this needs to be discussed:

- 1) If you have good or heightened sensitivity to your breathing process you can feel that there is a natural need to stop breathing for 1-2s especially during Exercise 1.
- 2) Remember, that it is impossible to reduce air flow if you try to change the respiration rate. Your breathing will become deeper. In the Buteyko Breathing Exercises we only change the depth of breathing. The frequency will change naturally and automatically.

We describe each breathing exercise as “to reduce the depth of breathing”, each exercise having a variation for different functions and situations. “To reduce the depth of breathing” essentially means doing each exercise while experiencing some degree of air hunger, so that the volume of air you inhale during the exercises is less than the volume of air you inhaled before the exercises.

There are a number of different Buteyko breathing exercises which all produce a reduction in the depth of breathing and, therefore, air flow. You can use any of the exercises you choose.

# Buteyko Breathing Exercises

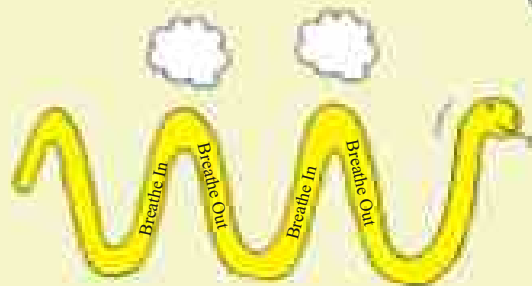
In order to help understand the Buteyko exercises, we would like to introduce to you the snake, a useful symbol of our breathing. Not only can breathing conveniently be represented with the snake, but its symbolic significance encompasses Professor Buteyko's own philosophy on breathing, that it is not just a physiological process but is also a living thing.

## Introducing Breathing Snake



The undulations of snake's body illustrate the process of inspiration (breathing in) and expiration (breathing out).

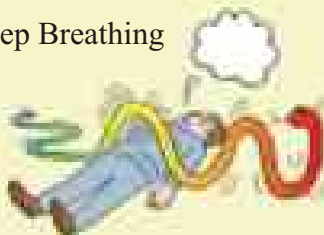
The little clouds show the volume of air breathed in and out.



## Shallow Breathing



## Deep Breathing



We also use colours to illustrate the depth of breathing. Red for deep breathing, blue for shallow breathing and yellow and green for breathing states inbetween.

It has always been known that nothing is purely good or purely bad. Everything, including the snake, has the capacity for being both good and bad. The snake can be an enemy or a friend. The snake has long been a symbol of wisdom, longevity and health.

The same can be said for our breathing. Shallow or normal breathing is a basic requirement for health and longevity. Deep breathing is the basis of many of our diseases. And so we can think of our breathing as an enemy if it is deep and as a friend if it is shallow or normal.



Rehabilitation of breathing should not be a struggle. Breathing should be regarded as something living and sacred, to be cherished and nurtured, like a baby.



### Why is it necessary to learn the Buteyko breathing exercise with a Buteyko practitioner?

- 1) You can try to “reduce the depth of breathing” without assistance, but if your condition becomes even a little bit worse, you must stop your exercise immediately because it may result in an asthma attack.
- 2) The main Buteyko exercises are based on your ability:

- a) “to feel” your breathing or “to have some sensation” of the process of breathing.
- b) “to see” your breathing.

- 3) Your Buteyko practitioner will teach you how to do it and help you “to reduce the depth of breathing” more easily and comfortably in any place and in any situation. If you cannot “see and feel” how you breath, you are likely to start increasing airflow instead of reducing it. Such attempts may then result in an asthma attack. In such cases your Buteyko practitioner will help you adopt an alternative Buteyko breathing exercise



- 4) Alveolar hyperventilation or “deep breathing” reduces  $\text{CO}_2$  to below normal in violation of the laws of physiology on the metabolism. Since factors such as over eating and over sleeping may increase hyperventilation and provoke asthma attacks, dealing with diet, sleep and communication with others becomes very important. Buteyko practitioners give advice on how to prevent "deep breathing" in any situation.

When we increase the level of  $\text{CO}_2$  to normal, the metabolism becomes normal automatically and naturally. Our needs will become normal automatically and naturally too, and we no longer require any advice. However, during the initial stages of implementing the Buteyko method, advice on these aspects is very important.

- 5) Breathing is a dynamic process. You cannot interfere coarsely and crudely in the respiratory process.
- 6) Experience during 40 years of medical practice has shown that only a very small percentage (around 0. 1%) of people attempting Buteyko exercises without a Buteyko practitioner can do the exercises correctly and without medical complications.

## How do I know that I am doing the breathing exercise correctly and have I successfully reduced air flow during the exercises?

- 1) You are doing the BBE correctly if you are able to overcome symptoms of a disease.
- 2) You are doing the BBE correctly if your CP increases.

If you reduce the depth of every inhalation, a feeling of a shortage of air should develop. This feeling is the main sign that the air flow has been reduced over what it was before the exercises.

The level of air shortage may be either large or small. Establishing a slight feeling of air hunger should be a comfortable experience.

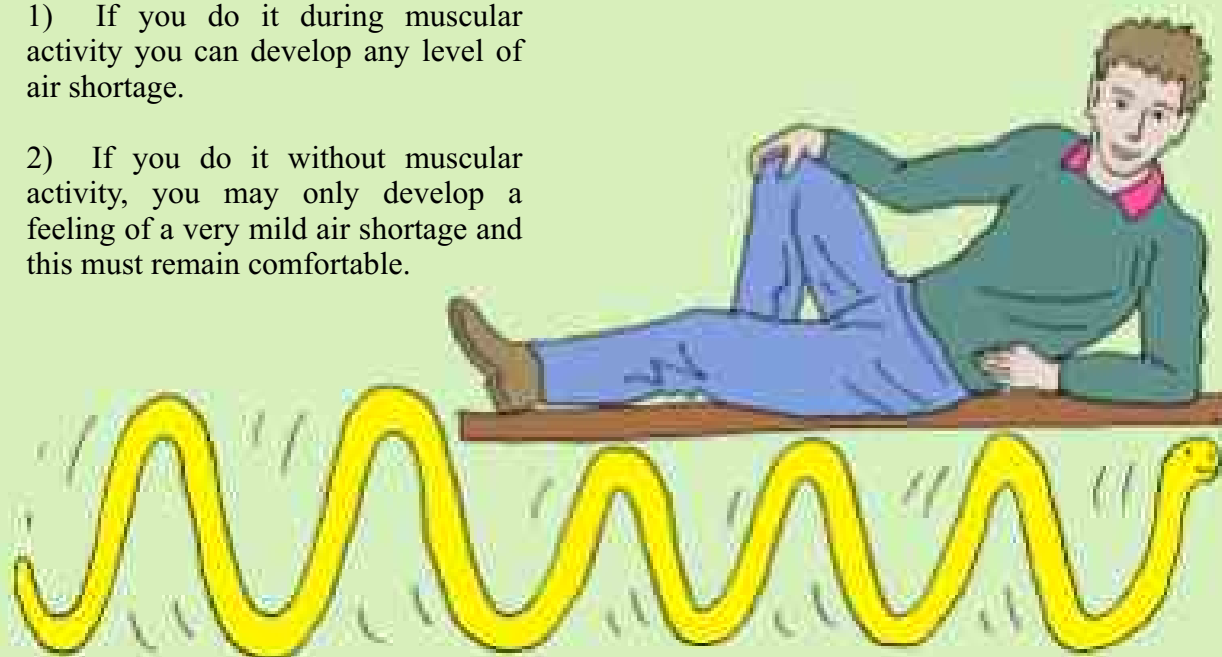
Different Buteyko breathing exercises produce different levels of air shortage.



**Our level of air shortage is dependent upon which exercise we perform, but the main rule is:**

- 1) If you do it during muscular activity you can develop any level of air shortage.
- 2) If you do it without muscular activity, you may only develop a feeling of a very mild air shortage and this must remain comfortable.

### Comfortable Shortage of Air



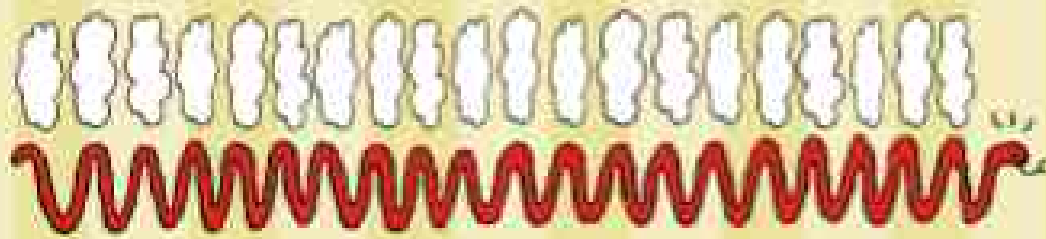


# Minute Volume

Total Volume  
of air breathed  
in and out  
in one minute

## Deep Breathing

Under CP 20



CP 20-30



CP 30-40



CP 60



## Shallow Breathing

## **Exercise 1**

### **To reduce the depth of breathing through relaxation of the muscles involved in the process of inspiration**

This exercise is the best for the treatment of the underlying condition. With this exercise, we learn to naturally decrease our breathing through relaxation.

This exercise decreases the airflow on a continuous basis. The remaining exercises are useful in increasing the level of CO<sub>2</sub> only temporarily. The crucial difference between the first and remaining exercises is that the remaining exercises only help us increase the level of CO<sub>2</sub>; they do not alter our breathing permanently.



However, since people with low CP's often have difficulty sensing their breathing, they often have difficulty doing this exercise and may have to be started on one of the other exercises until their CP is at least 20.

The remaining exercises have to be performed continuously until the Control Pause as measured first thing in the morning is consistently over 40. The Control Pause, as measured in the morning, is an accurate reflection of the state of health.

The main aim of this exercise is to reduce the depth of breathing as a result of relaxation of the respiratory muscles. **For this exercise It is very important not to consciously interfere in the breathing process or to change the pattern of your breathing using volitional control.**

There are two approaches to this exercise:

#### **Approach 1: “Awareness of breathing process”**

##### **Steps**

- 1) The aim of this exercise is to decrease your level of breathing through having complete awareness of your breathing and through relaxation of the breathing muscles.
- 2) Adopt the correct posture by sitting comfortably, with your back straight.
- 3) Try to see and feel the process of your breathing. Ask yourself what it is that you feel and see during the inspiration and expiration process.







Can you sense  
your breathing?



No?  
Concentrate  
really hard!



Thats it! Tune  
into the pattern  
of your  
breathing.



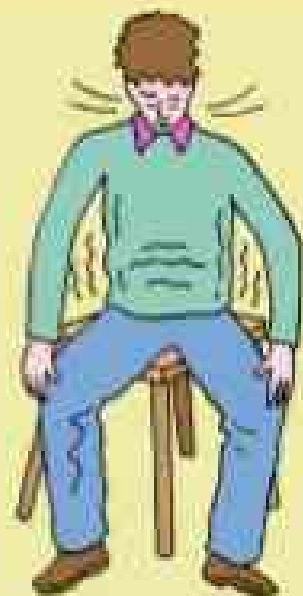
Become very  
aware of your  
breathing.



Hear your  
breathing



Feel the  
movement in and  
out of your body



See your breathing with  
the rise and fall of your  
chest and daphragm

1) Focus on relaxation of your body, from the head downwards while maintaining a correct posture.

Pay full attention to relaxation of all the muscles which take part in inspiration.

2) For example, to decrease the depth of breathing, try to relax the muscles around the diaphragm.

This is the area of muscles at the top of your stomach between the navel and breastbone.

Maintain a good posture, draw in your stomach a little and feel and see how your costal arch becomes a little higher than it was before.

Then, relax the upper part of the muscles of the stomach. This will cause your stomach to move out a little.

Doing this will increase your awareness of seeing and feeling the volume of air which flows through the lungs at any moment. This is one of the possible techniques to help you reduce the depth of your breathing naturally.

3) The volume of air inhaled into lungs will automatically decrease at a steady rate.

4) There is no effort involved in this exercise. You should not consciously alter your level of breathing as effort is too difficult to maintain over long periods. Please remember that the purpose is to reduce breathing through relaxation.

5) Try to do this exercise at all times and in all situations. Be aware of breathing at all times and focus on relaxation at all times.

It is necessary to sit down and set aside a certain amount of time each day for this exercise until you have become proficient at it. .

## Muscles tensed

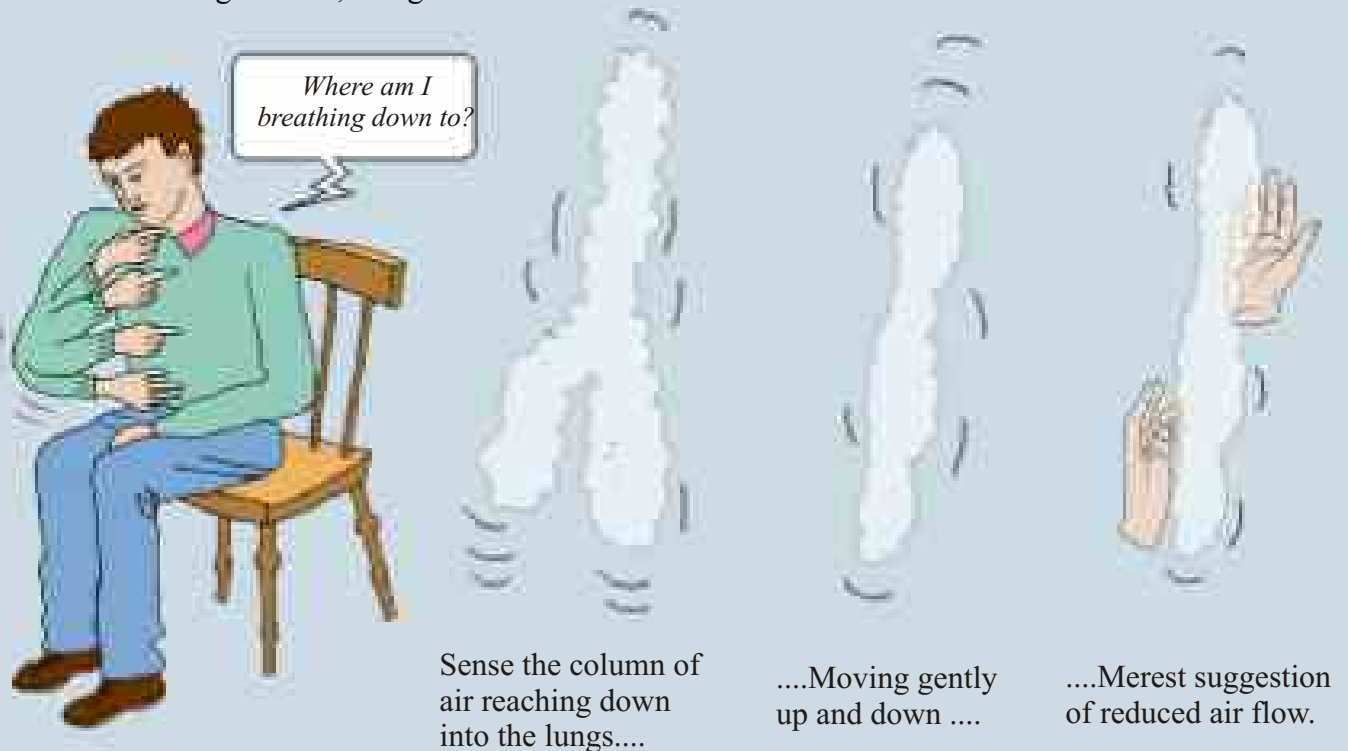


## Relax!



**Approach 2: "The perfect man breathes as if he is not breathing"  
(Lao Tzu, 500 B.C.).**

- 1) Assume the correct posture by sitting erect with a straight back and with shoulders dropped back. The correct posture will ensure that the stomach is naturally drawn in without any effort and without any tension in the abdominal muscles. It will also cause you to reduce the depth of your breathing automatically.
- 2) At this stage do not interfere with your breathing. This is difficult, because just by adopting this posture the depth of breathing automatically reduces a little and we additionally tend to want to help reduce our breathing with the Buteyko method. If at this stage you are trying to do the Buteyko method, you will be over-doing it and experiencing an air shortage that is too great.
- 3) Now, while sitting with this erect posture, just try to sense your breathing. Try to see, hear and feel your breathing. What do you feel? Do you feel movement of air in the nose?
- 4) And now try to reduce the movement of airflow a little without any effort, just hinting at reduced air flow. With this your air flow will become slightly less, but you will still be comfortable. This will result in a feeling of calm, being at ease and total relaxation.

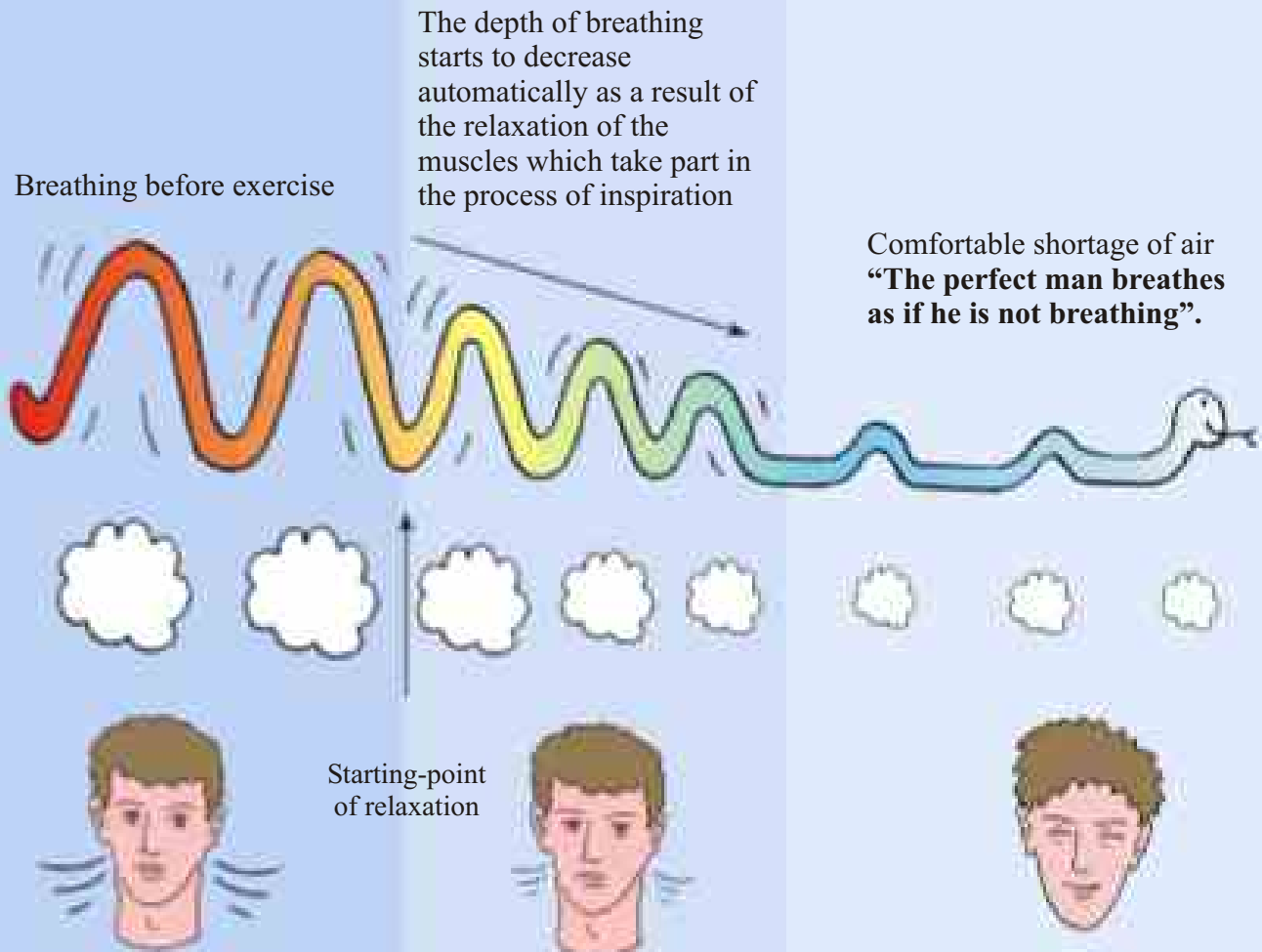


- 5) Try to sustain this comfortable feeling of slightly reduced air flow for 5, 10, 20 seconds and then longer. If you feel a little tense after 5 to 10s, then you will have lost that comfortable feeling and you will be breathing more instead of less. This tension is a result of excessive effort you have put into reduced breathing. It comes about when attempts are made to reduce breathing with effort rather than with relaxation. For this exercise it is a mistake to try to reduce breathing with willpower.
- 6) If this happens, stop your exercise, distract your mind for a minute or two and start again.
- 7) Initially you will only be able to do this exercise for 5 to 10s. Later you will be able to do it all day long.
- 8) This exercise resonates with the words of Lao Tzu (500 B.C.): "the perfect man breathes as if he is not breathing".

## Diagram of Exercise 1 - Approach 2

**“The perfect man breathes as if he is not breathing”**

It should be easy and pleasant to reduce breathing.



### **Possible mistakes**

Consciously interfere in the breathing process or to change the pattern of your breathing using volitional control.

Air shortage will be excessive for this kind of exercise:

If frequency of breathing was increased automatically.

If there is a difference in the length of inspiration and expiration.

If there is tension or any discomfort.

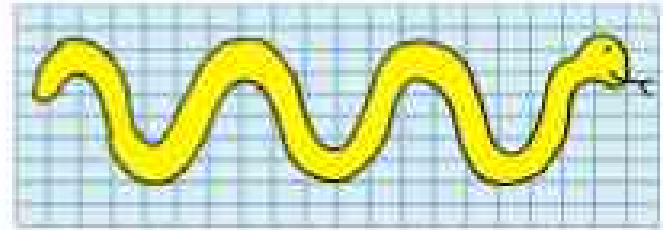
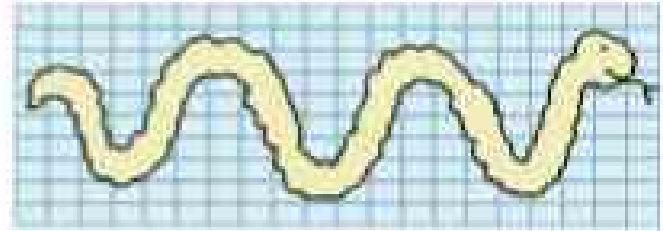
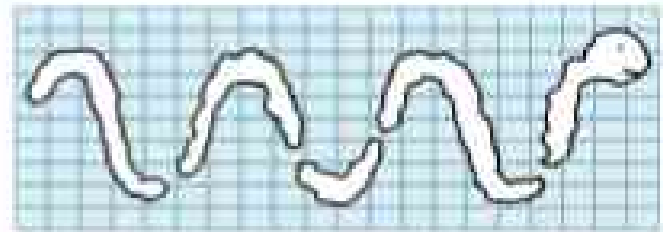
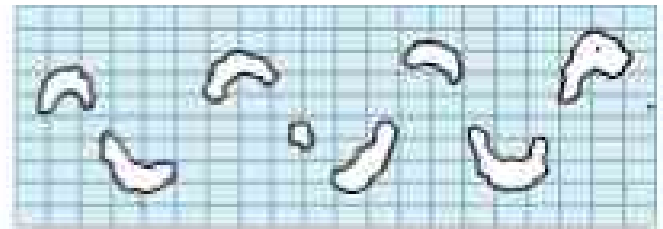
If there is some effort expended on reducing the depth of breathing.

### **Approach 3: “Just hint at reduction of air flow “**

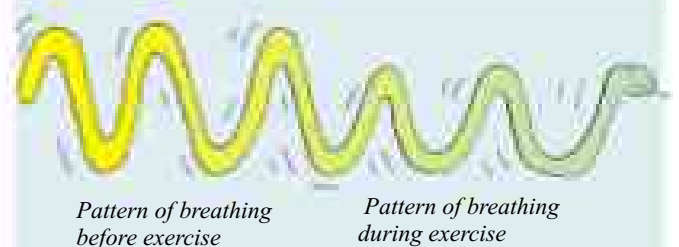
- 1) The aim of this exercise is to decrease your level of breathing through just hinting at reduced air flow without any effort and any relaxation.
- 2) During this exercise you need to focus attention only on the pattern of your breathing.
- 3) Adopt the correct posture by sitting comfortably, with your back straight.
- 4) Try to see, hear and feel your breathing. What do you feel? Do you feel movement of air in the nose? Do you feel movement of the chest or stomach while trying to sense your breathing?
- 5) At the same time you need to visualize the pattern of your breathing:
  - What is the frequency of your breathing?
  - What is the duration of each inhalation and exhalation?
  - Is your breathing regular and calm or is it erratic?
- 6) You do not need to do mental arithmetic on the frequency of your breathing or count the duration of each inhalation in seconds. You need to feel or have a sense of the pattern of your breathing; because when you start to reduce air flow you need to compare your new pattern of your breathing with the pattern which you had before this exercise.
- 7) Try to decrease the depth of breathing through just hinting at reduced air flow. You should do this through feeling a reduction of your breathing without any dramatic change in the pattern of your breathing. If you sense that the pattern of your breathing is changing then you have decreased the depth of breathing too vigorously.

8) If this happens, stop your exercise, distract your mind for a minute or two and start again. For this exercise it is a mistake to try to reduce breathing with willpower.

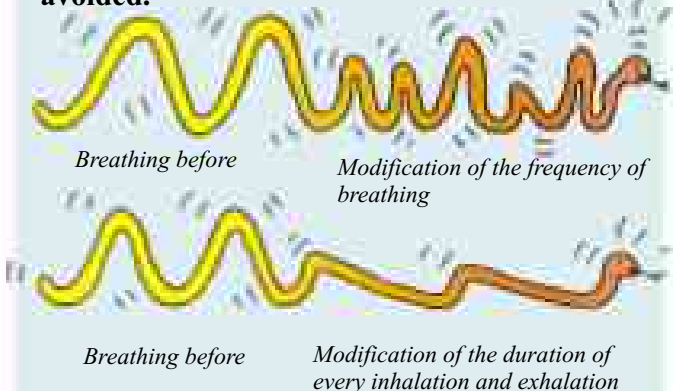
This exercise is difficult enough, because it requires a lot of attention to the breathing process as well as extreme sensitivity to your breathing. As with any of the other Buteyko breathing exercises you can do this exercise until any symptoms of disease disappear or your CP becomes higher. Don't forget to measure your CP before and after any Buteyko breathing exercise. And don't forget that measurement of CP after exercise requires you to wait for some time until your breathing stabilizes to its normal level.



#### **Decreasing the volume of breathing without any dramatic change in the pattern of breathing**

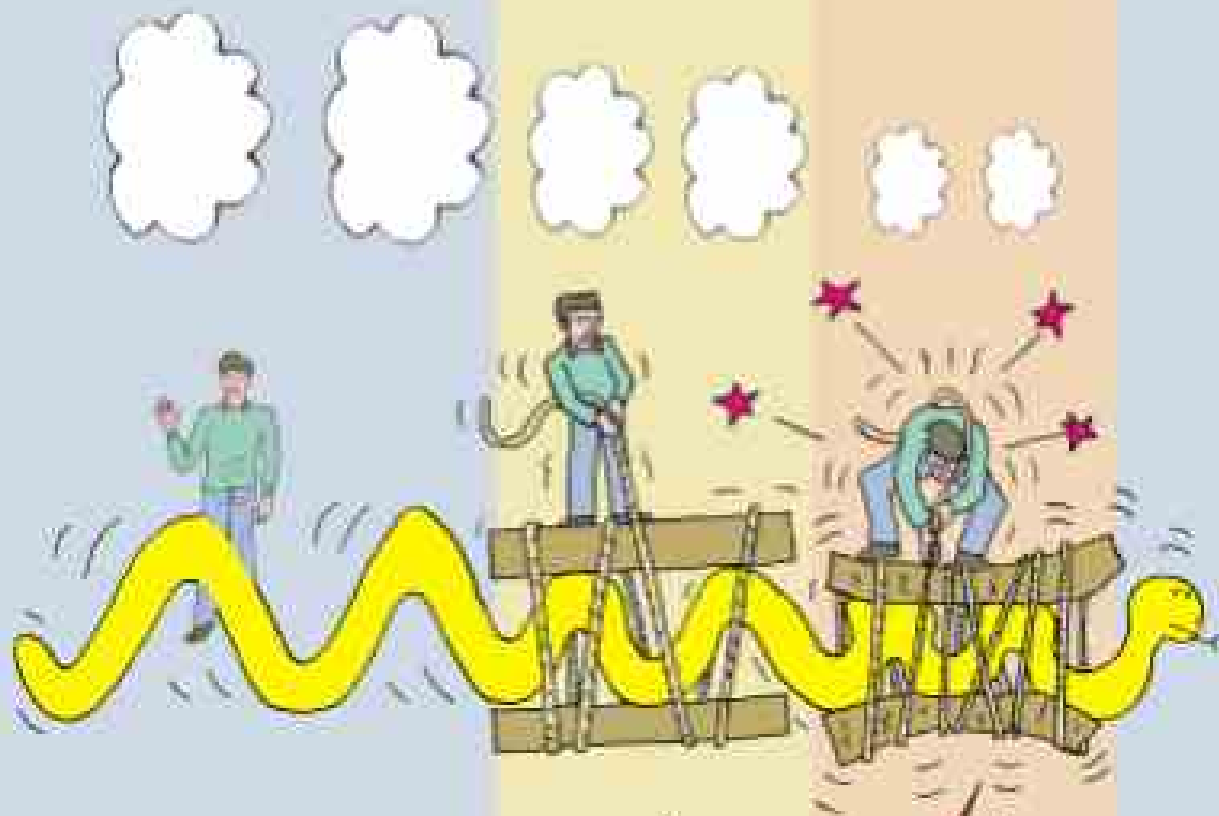


#### **Excessive decrease in the volume of breathing resulting in a dramatic change in the breathing pattern. These situations must be avoided.**



# VOLITIONAL CONTROL

Decreasing of volume of inhaled air using volitional control



Volitional  
Control

Volitional  
Control



Normal breathing



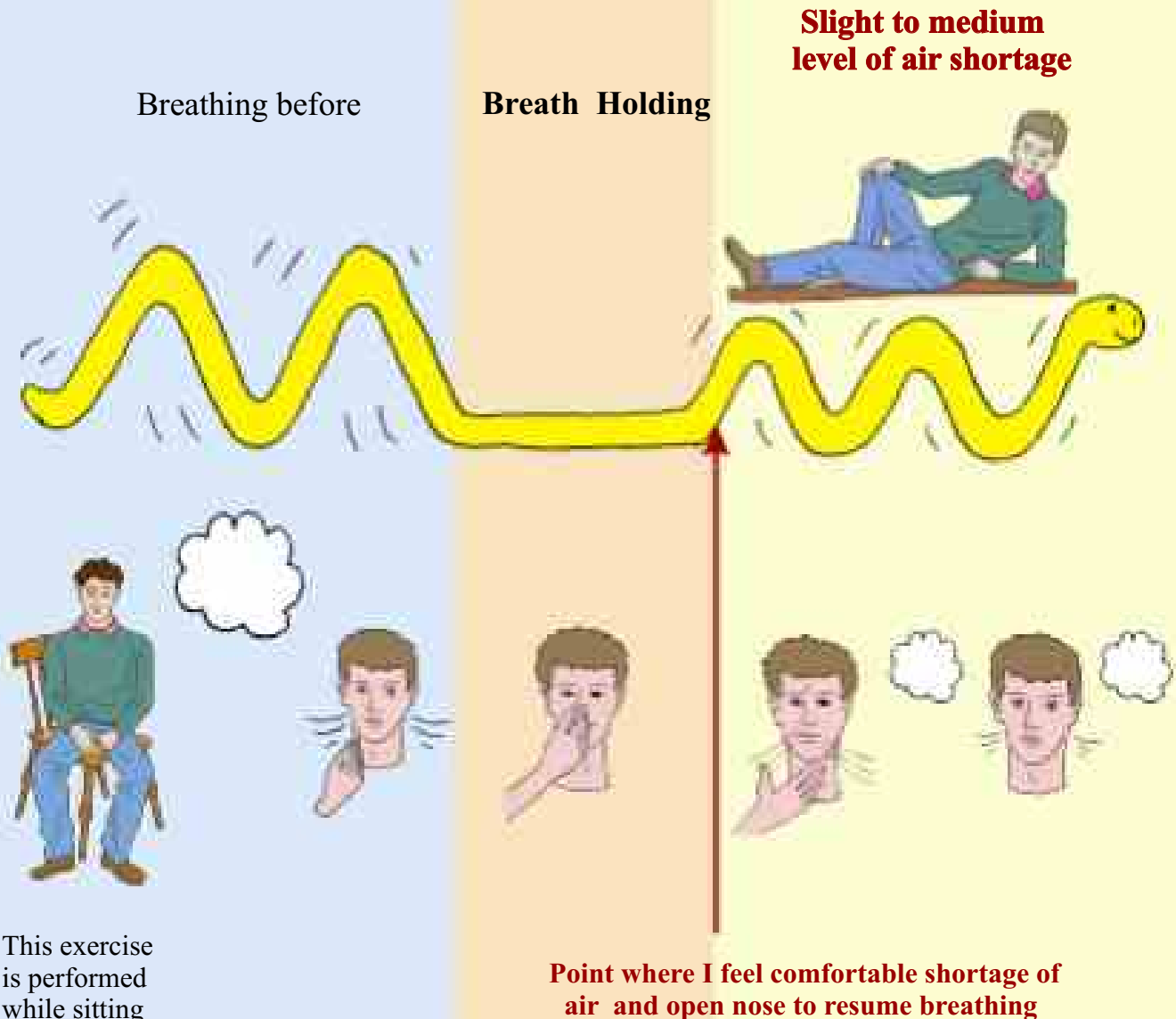
Moderate level  
of air shortage.  
Pressure of sore  
muscles and  
fatigue



High level of  
air shortage,  
discomfort,  
effort, tiredness

## Exercise 2 “ To reduce the depth of breathing using breath holding”

The aim of this exercise is to raise Carbon Dioxide levels through creation of slight but comfortable air shortage



This exercise is performed while sitting down without engaging in any physical activity.

### Step 1

Breathe out **normally**. At end of exhalation, block your nose with your finger and thumb. During exhalation, do not forcefully exhale, as immediate discomfort will be felt.

### Step 2

Continue to hold your breath until you feel a slight but comfortable air shortage.

### Step 3

When you resume breathing, sustain this feeling for as long as you can.



After recommencement of breathing, maintain a comfortable feeling of a shortage of air with breathing muscles relaxed. If you try too hard to create an air shortage, this will disrupt your breathing pattern too much and may cause you to take deep inhalations thus causing hyperventilation.



It is necessary to pinch your nose during this exercise, as we often have up to 5 to 30% of total volume of air inhaled before we are aware of it. This is especially important for beginners to the Buteyko Method.



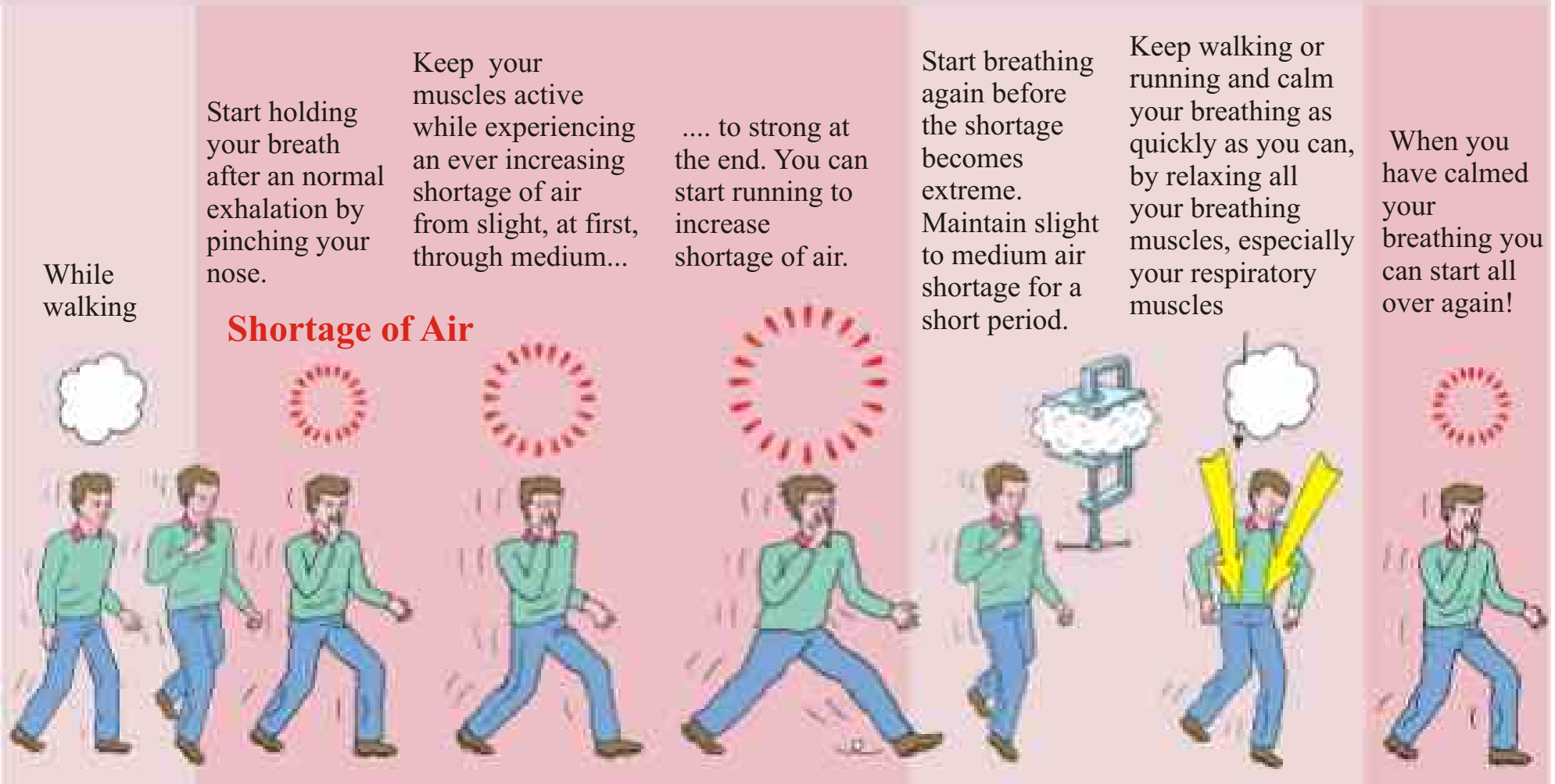
### **Possible mistakes**

Holding the breath for too long, resulting in an excessive air shortage.  
Breathing pattern was changed too much as a result of excessive air shortage.  
Tension and discomfort during exercise.



### **Exercise 3 “To reduce the depth of breathing using muscle activity while breath holding”**

During this exercise hold your breath while doing physical exercise such as jogging, walking or participating in sport. Here is an example of this exercise while walking/running.



#### **Possible mistakes**

- Holding the breath for too long followed by a deep breath.
- Not being able to hold the breath at all due to excessive physical activity.
- Maintaining an air shortage after the breath hold.

**The following rules are very important and common to all Buteyko breathing exercises.**

- 1) The greater the level of muscle activity the more intensely you can push the feeling of shortage of air.
- 2) If you are sitting still while doing the Buteyko breathing exercises, then the feeling of air shortage you should experience should be very mild.
- 3) If you are exercising very vigorously while doing the Buteyko breathing exercises, then you can push yourself to experience a very strong shortage of air.

For example, while walking, running or jumping you can tolerate a higher level of air shortage because your muscle activity is high. The combination of vigorous exercise and a strong feeling of air shortage produce a very high CO<sub>2</sub> level.

**When you resume breathing after a breath hold during vigorous exercise, it is necessary to keep moving while you normalize your breathing.**

This breathing exercise is to be performed repeatedly during physical exercise.

The main advantage to breath holding with muscle activity during exercise is that the levels of CO<sub>2</sub> will increase at a substantially greater rate than if breath holding while sitting down.

This exercise does not train us to breathe correctly. It rapidly raises the CO<sub>2</sub> level to alleviate symptoms, but the effect is only temporary. A little while after you stop doing the exercise, your CP will drop to where it was before. While the CP appears to become longer with frequent repeated applications of the exercise, it does not permanently raise CO<sub>2</sub> until the CP has reached 40. Only when this level is achieved will a physiological change take place that reverses deep breathing as a physiological condition. Therefore you must repeat this exercise until your CP exceeds 40.

#### **Caution:**

When the CP is between 5 and 15, this exercise should be avoided or done with extreme caution. Since at these low CP's our breathing is very unstable, an asthma attack can easily be triggered by a single deep breath after a breath hold. If it is necessary to do this exercise it should be done attentively, unhurriedly and with slow movements.



In order to avoid an asthma attack, it is important not to take any deep breaths after resuming breathing.

## Exercise 4

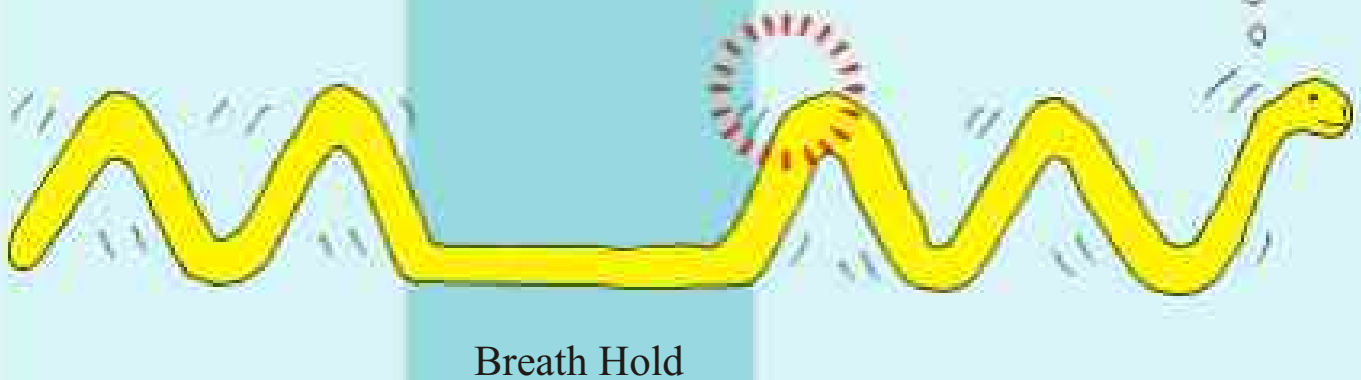
### To reduce the depth of breathing using many Breath holds

This exercise is very useful for people who do not have the time during their working day to devote to doing the other Buteyko exercises that take up time. Instead they do many breath holds at different times throughout the day.

Hold you breath to create a slight air shortage. Hold your breath for about half the length of your control pause, carefully avoiding any feelings of discomfort.

Then breathe as normal. This should be done from 100 to 500 times per day.

500 TIMES A DAY!!



#### Possible mistakes

- Too big an air shortage followed by a deep breath.
- Breathing pattern was changed too much as a result of excessive air shortage.
- Tension and discomfort during exercise.



**A 24 hour Challenge !**

## Many breath holds during the day



When you wake up



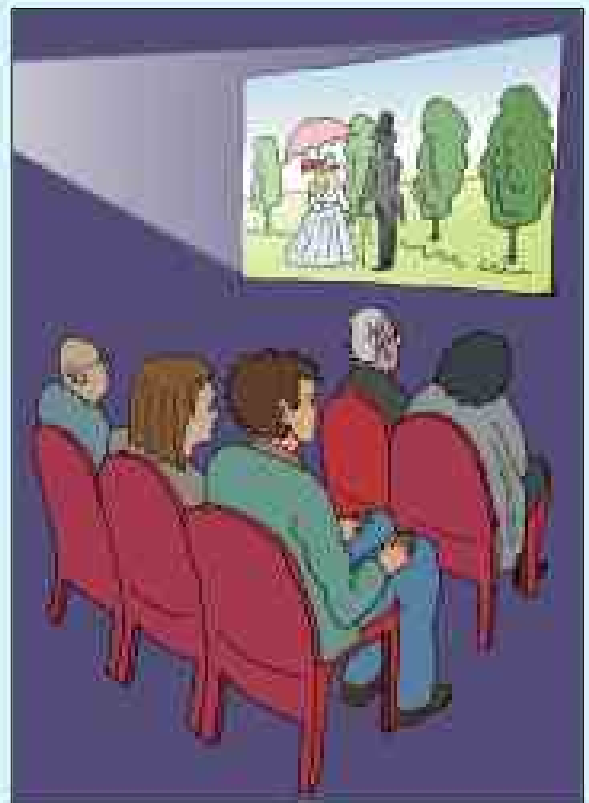
Going to work



At work - useful to combat stress!



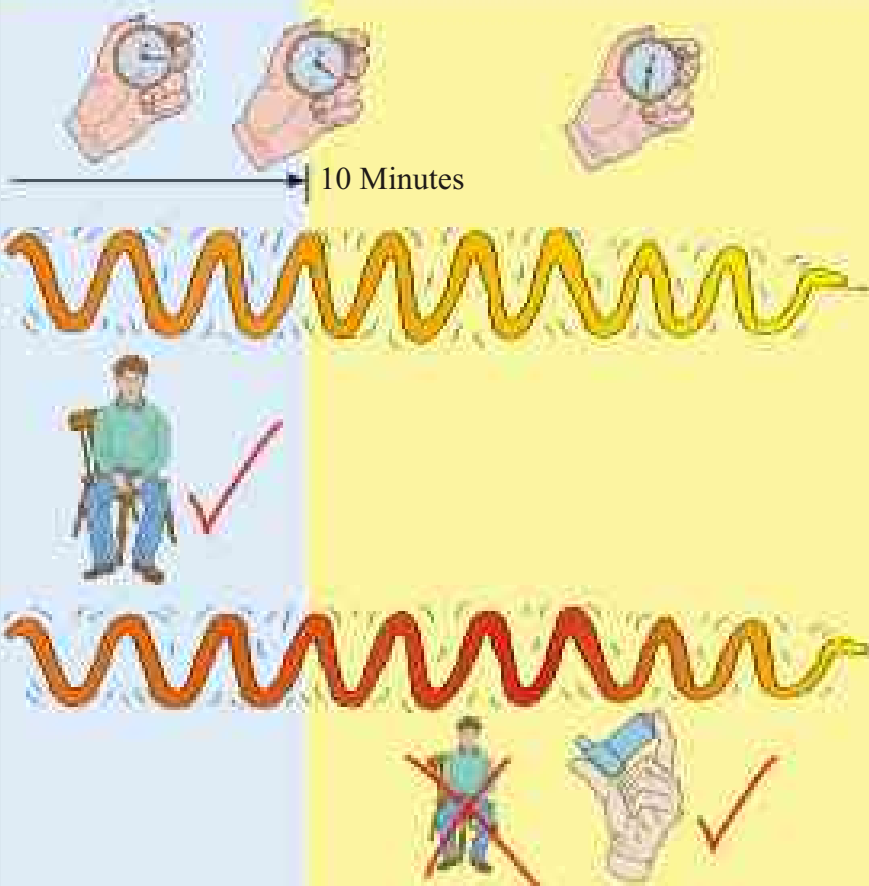
When you return home from work



And at the cinema

## Exercise 5

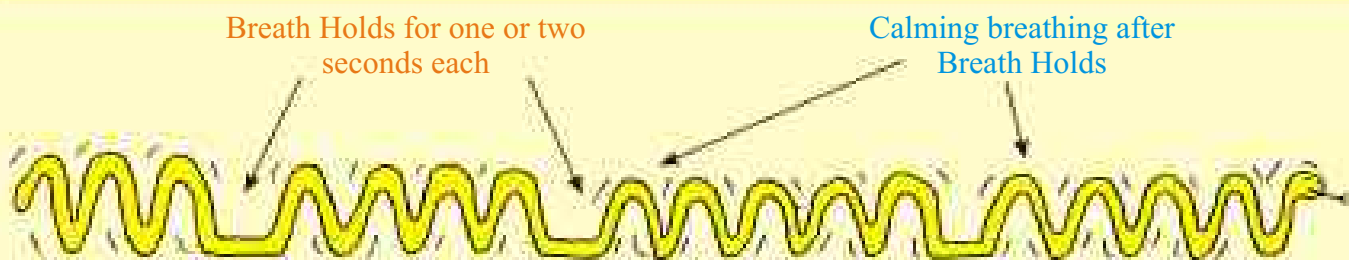
### Exercises to perform during the first stage of an Asthma Attack



It is important to keep in mind that if an attack has lasted for more than ten minutes, it is dangerous and it is a lot more difficult to control with exercises. It is necessary to take medication immediately.

#### Approach 1: “Many small breath holds”

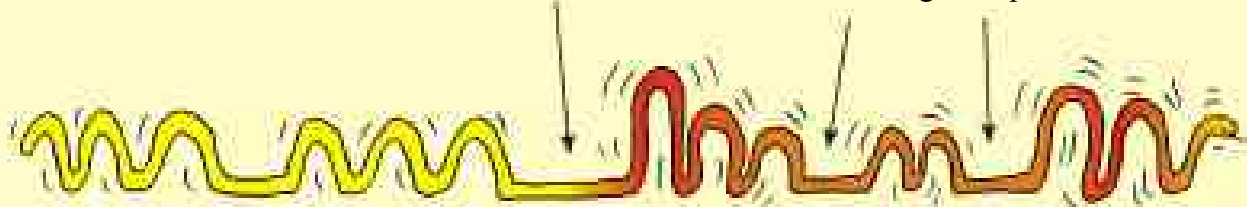
Do many small breath holds lasting just one or two seconds. Have an interval between breath hold about one minute until you relax and calm your breathing after previous breath holding.



#### Possible Problems

The most important point to remember is that if the breath hold is too long, the following breath may become too deep resulting in an increase in the severity of the attack.

Doing breath holding too frequently. It is necessary to calm your breathing after previous breath hold.



## Approach 2: “Relaxation instead of exhalation”

One of the features of an attack is the difficulty in breathing out. To help breathe out, especially during the early stages of an attack, perform the following.

1) Breathe in and stop breathing for half a second. (It is not necessary to do a breath hold).



### Possible mistake

If the air shortage is too great, the respiratory muscles will not be able to relax.

2) Relax your muscles of the upper part of the stomach (abdominal muscles above the navel) so that you breathe out naturally without any effort allowing the exhalation to proceed by relaxing the respiratory muscles. Do not force your breathing or mechanically breathe out. Let your relaxed muscles play the main role in the exhalation process.

Relax your  
breathing  
muscles



## Approach 3: “Relaxation during exhalation”

1) While you are exhaling, imagine your respiratory muscles relaxing, starting at the top and working down.

2) You can tell when your respiratory muscles, especially the diaphragm, are fully relaxed, by a natural pause in breathing which occurs for about half a second at the end of exhalation.

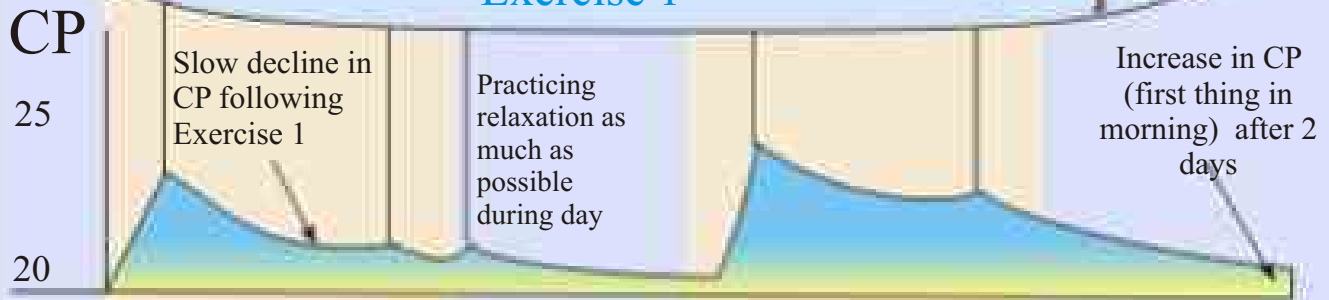
### Possible mistakes

Making an attempt to hold breathing artificially at the end of exhalation. Stoppage of breathing at the end of exhalation must result from relaxation of the respiratory muscles, especially relaxation of the diaphragm which is the main respiratory muscle.

# REDUCTION OF BREATHING - FREQUENCY OF EXERCISES

Day 1

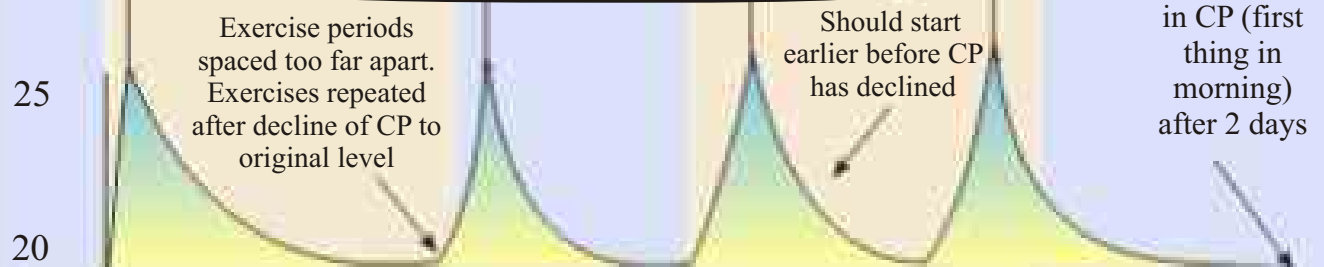
## Reduced Breathing Through Relaxation Exercise 1



## Reduced Breathing Through Volitional Control Many periods of shortage of air and breath holds

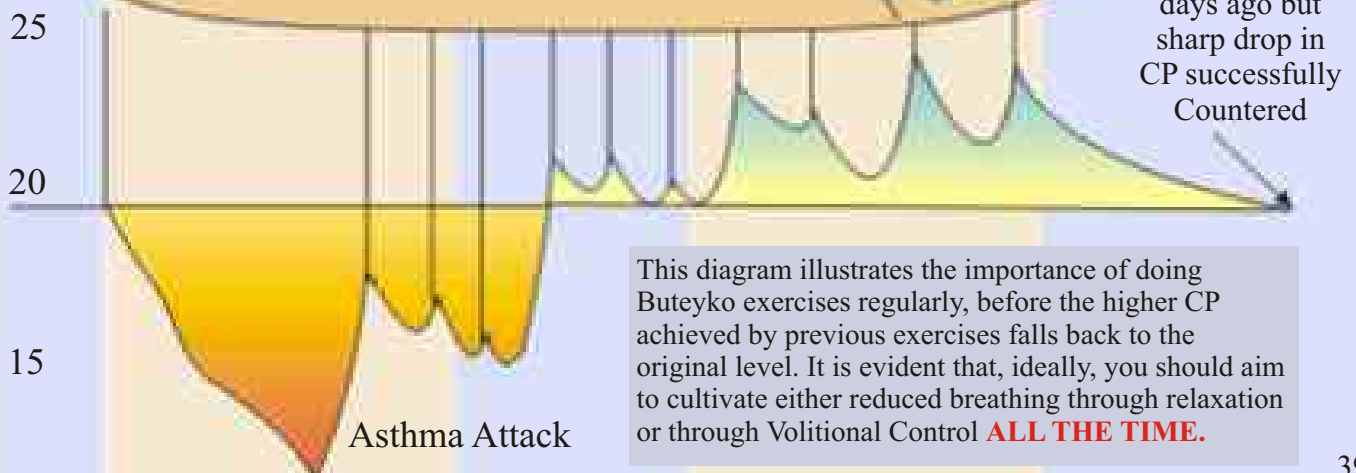


## Reduced Breathing Through Volitional Control A few periods of shortage of air and breath holds



## Combating Symptoms

### Reduced Breathing Through Volitional Control



This diagram illustrates the importance of doing Buteyko exercises regularly, before the higher CP achieved by previous exercises regularly, before the higher CP achieved by previous exercises falls back to the original level. It is evident that, ideally, you should aim to cultivate either reduced breathing through relaxation or through Volitional Control **ALL THE TIME**.



## How to prevent hyperventilation during Sleep

It is very important to prevent hyperventilation during sleep

1) **Measure the CP before** going to sleep. Then **measure the CP again after** sleeping, in the morning (morning CP).

a) In a normal situation, your Control Pause in the morning (which is the only correct and true measure of your control pause) must be greater than it was the night before. If it is not then you are breathing too deeply during your sleep.

b) When your control pause is at least 5 seconds greater after sleep than before going to sleep, you will not have any asthma problems during the night.

c) If you have any symptoms before going to sleep, your control pause will be less in the morning as breathing gets deeper during sleep.

d) Before going to sleep, be aware of your level of health and consider the likelihood of a possible asthma attack during the night.



2) If you are having severe symptoms or if there is a high likelihood of having an attack during the night, it is safer to remain awake until the threat passes or to sleep sitting in an upright position.

3) To prevent an attack, try doing Buteyko breathing exercises first. If this does not help, it may be necessary to take steroids.

4) Set an alarm clock to wake yourself every one, two or three hours depending on the severity of your situation.

5) Each time you awake, measure your control pause; this will give you a good indication of the level of your health. Try to do the breathing exercises until symptoms disappear.



## **How to stop coughing or a coughing attack**

Generally after coughing, we take a deep breath after each cough. There are steps to take to reduce this hyperventilation from coughing. Taking these steps will also reduce and stop your coughing. Coughing is both a sign and a result of deep breathing.

Steps:

- 1) Try not to cough at all.
- 2) Do not try to expel mucus from your bronchi by making any special effort.
  - a) Mucus is one of the protective mechanisms and it is impossible to remove it naturally until your CO<sub>2</sub> is sufficiently raised.
  - b) When you start the Buteyko breathing exercises the level of CO<sub>2</sub> will increase and mucus will be removed without any effort.
  - c) If you continue to cough, your level of CO<sub>2</sub> will decrease and an asthma attack will recur.
- 3) If you need to cough, do so without opening your mouth. Cough as if through your nose.
- 4) After each cough, block your nose with your finger and hold your breath for one to three seconds.
- 5) While you block your nose, try to relax all the muscles involved in the coughing process-shoulders, thorax and upper part of stomach.

## **If you have rhinitis and need to blow your nose**

- 1) Immediately after blowing your nose, block your nose with your fingers and hold your breath for five seconds. Then wipe your nose.
- 2) Wipe your nose only after a five second breath hold. Wiping your nose before the breath hold will result in a deep inhalation while you are wiping it.

## **Sneezing**

- 1) Sneeze, stop and do a three to five second breath hold and then wipe your nose.
- 2) Don't wipe before holding your breath, because you will take a deep breath while you are wiping.

## How to reverse asthma using physical exercise

Physical exercise is very important in helping to normalize your level of CO<sub>2</sub>, one of the end products of metabolism. However, it is necessary to adhere to a number of conditions.

If these conditions are not met, then exercise may exacerbate your condition.

1) Firstly, **measure your Control Pause right before you exercise**. Secondly, **measure your Control Pause one or two hours after you finish exercising**.

a) Your control pause after exercise must be greater than it was before you exercise. If it is not, or if your CP has been reduced by the exercise, then you have decreased your level of CO<sub>2</sub> during the exercise.

b) If your exercise is not particularly vigorous, for example after a long walk or cleaning a room, then you can measure your CP right after you have finished your exercise.

2) In order to prevent loss of CO<sub>2</sub> during all exercise, **try breathing through your nose at all times if you have a CP less than 20 seconds before the exercise**. If your CP is greater than 20 seconds, you can breathe through your mouth briefly during very vigorous exercise.

3) **While exercising, try to sustain the feeling of a slight shortage of air**.

4) Remember that if your Control Pause is less than twenty seconds, it will be more difficult for you to control your breathing during exercise.

## How to prevent hyperventilation when speaking

While speaking, pay full attention to your breathing pattern. You are over breathing when it is possible for other people to hear and see your breathing. You are then likely to be hyperventilating and must stop speaking.

Remember:

1) Do not breathe in through your mouth at any time especially when speaking.

2) Instead shorten your sentences, pause, relax breathing muscles and take small breaths in through the nose during mid-sentence.

3) It may take longer to get your point across but this will reduce your overbreathing.

## You will never forget how to do the Buteyko breathing exercises if:

1) You learn how to overcome symptoms.

2) Reducing the depth of breathing is easy and a pleasant experience.

## **Teaching Children the Buteyko Method**

While teaching children, telling them stories is the best way to help them understand about their deep breathing. Below are some stories that are very effective in increasing children's awareness of their breathing so that they can reduce the volume of airflow.

### **The story of the little mouse that has to hide her breathing to stay alive.**

Have the child pretend that he or she is a little mouse and that there is a big hungry cat outside the door. The cat has very good hearing and is listening for the breathing of the mouse. The child must reduce the sound of its breathing so that the cat will not hear it. This way the child will avoid being eaten by the cat.

### **This story helps us understand who will be eaten or consumed by asthma and why.**

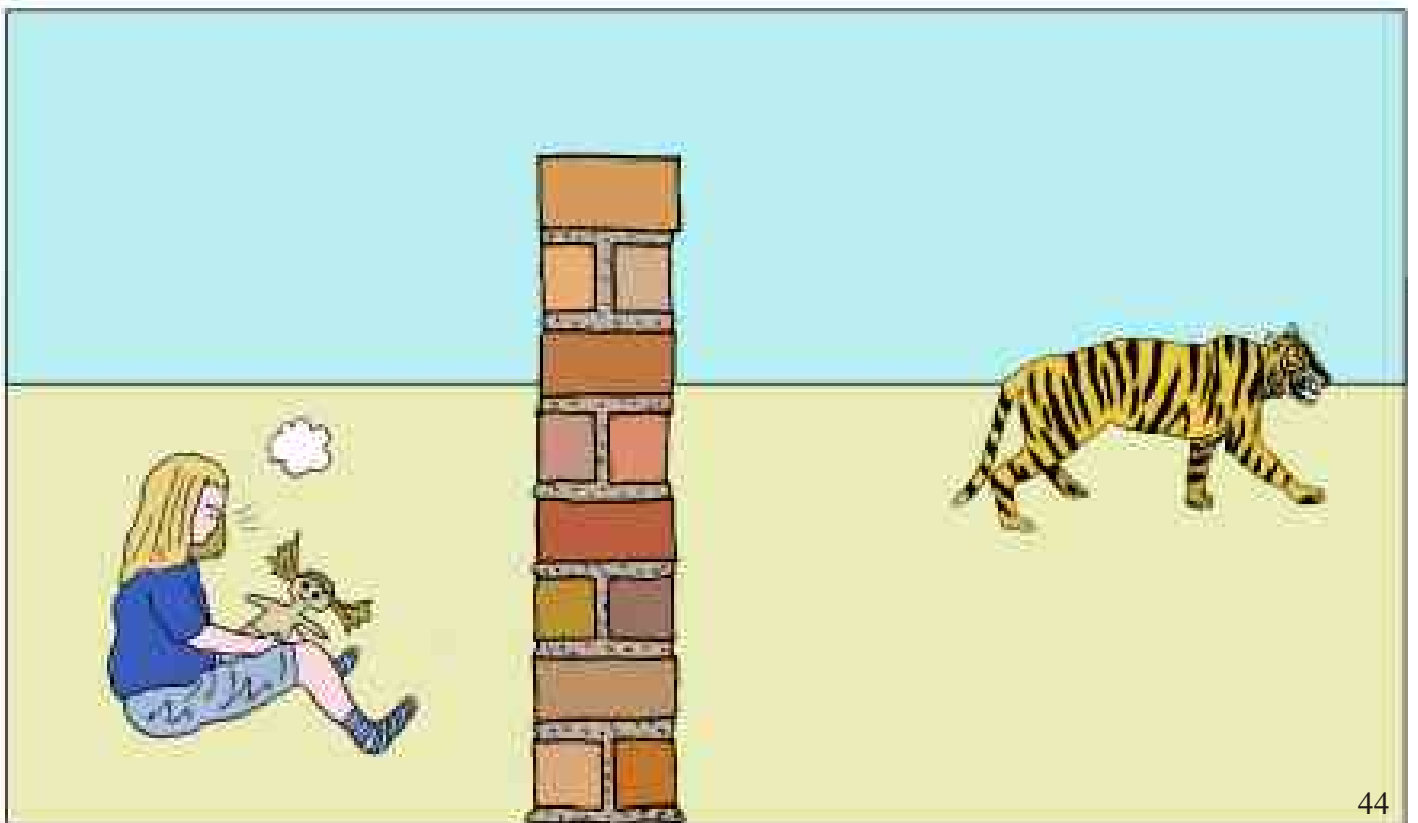
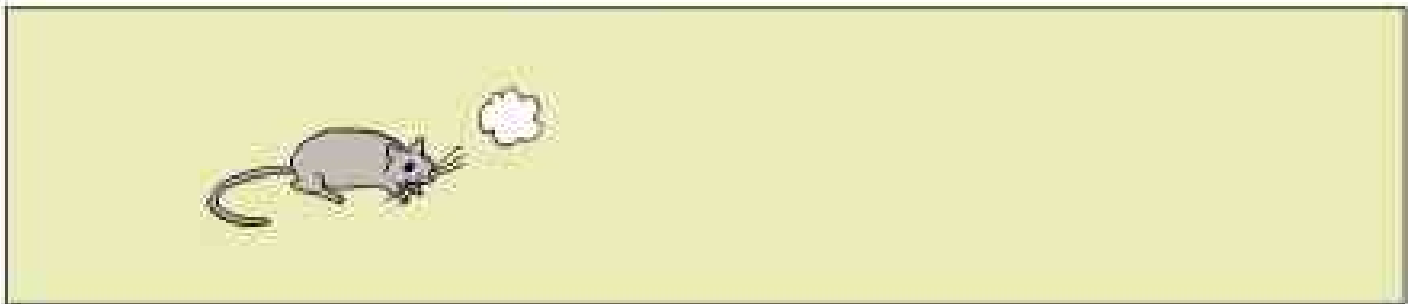
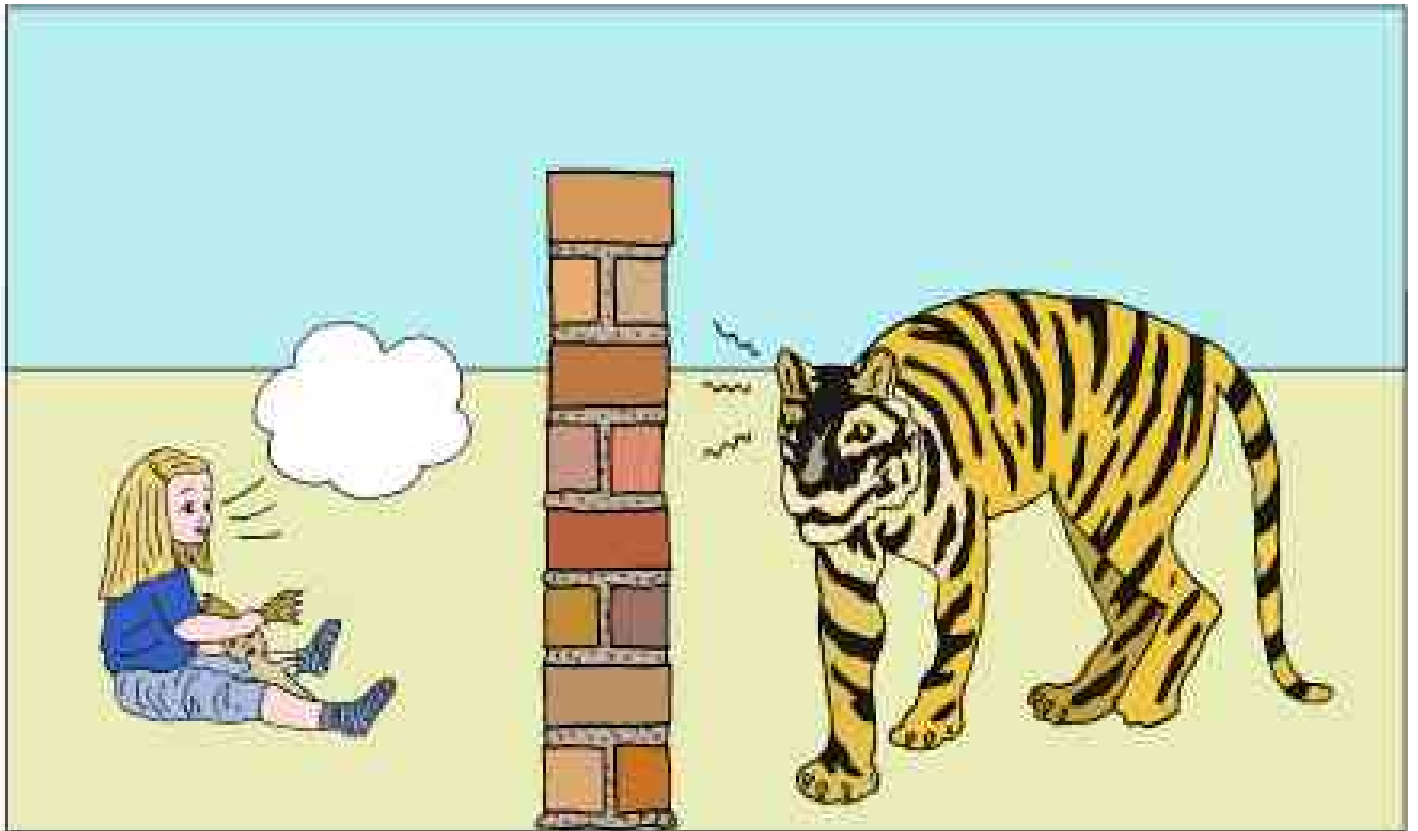
Tell the child that Bronchial asthma is waiting outside the door listening for anyone breathing. If it hears anyone breathing, it will enter that person or child and cause Asthma.

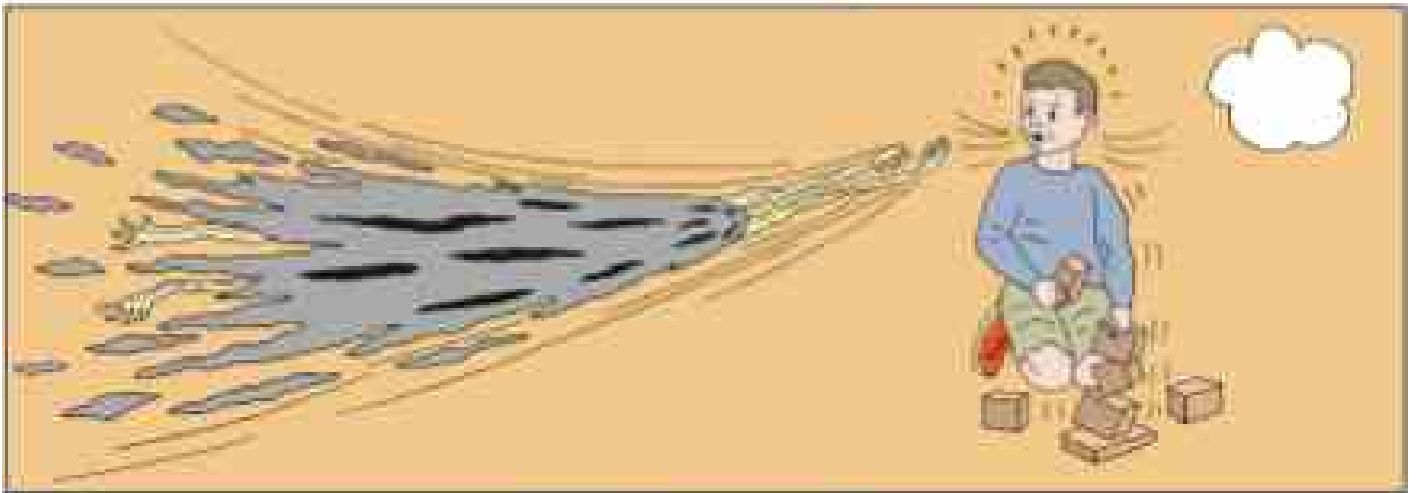
This story is very effective to help children who are open mouth breathers to breathe only through the nose. Tell the child that bronchial asthma is looking for children with open mouths. Once it sees a child breathing with an open mouth, it will enter their body through the mouth and nibble at their lungs.

These two stories are illustrated on the following pages.

### **Games with many small breath holds.**

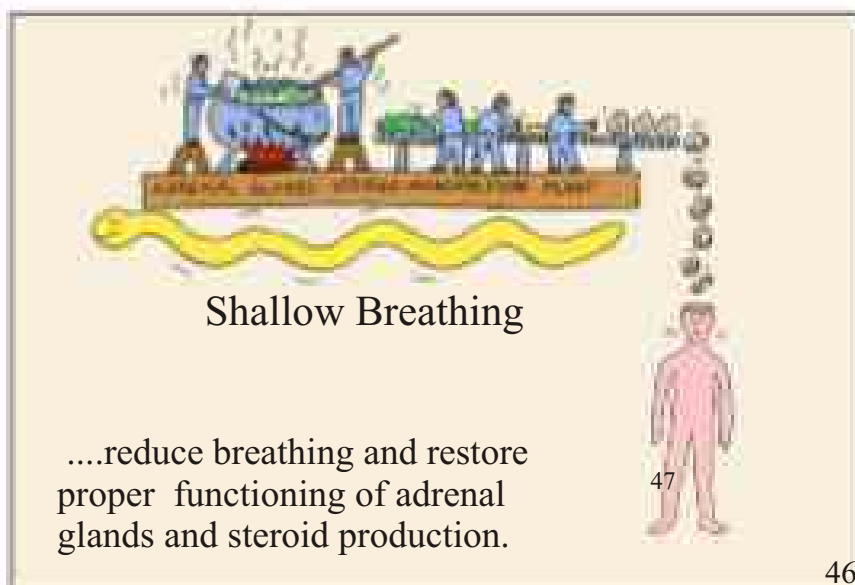
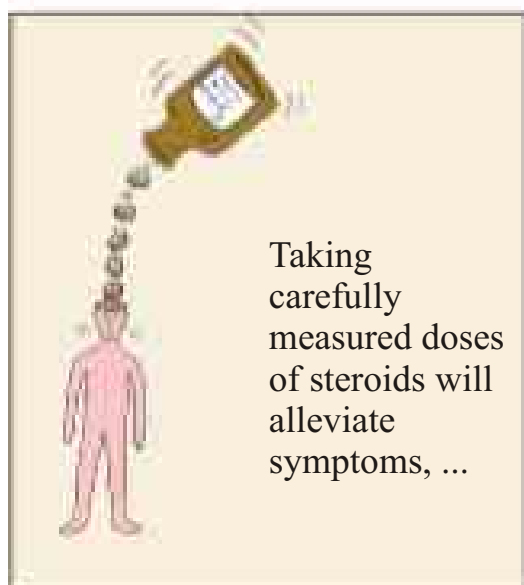
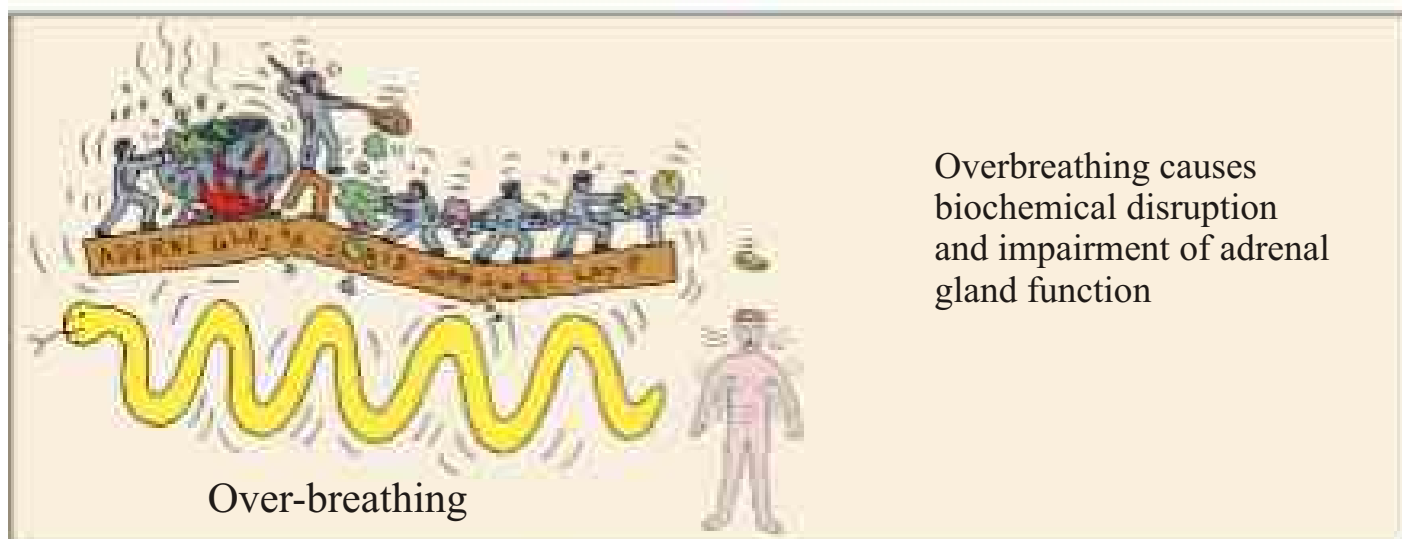
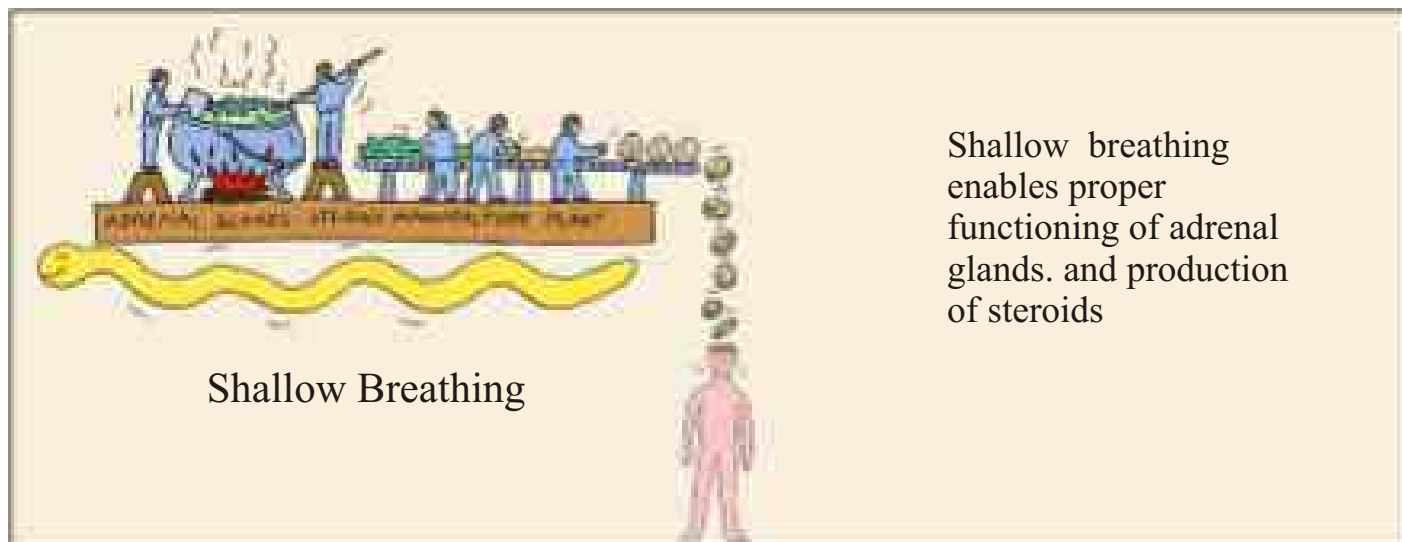
Usually, it is best to have children play doing many small breath holds with intervals of one minute between each one. It is also very necessary for parents to apply the Buteyko technique to reduce their own breathing. Children will follow exactly what their parents do even if this is learning bad habits such as deep breathing.



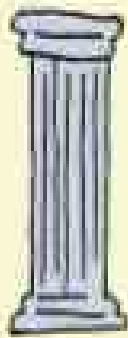


## Buteyko's *quick* and *safe* steroid therapy for asthma.

With Buteyko therapy, steroids are not seen as just anti-inflammatory agents only. The profound biochemical disturbance caused by chronic hyperventilation can, in many individuals, apparently, lead to hormonal disturbances such as insufficient Cortisol production. When Cortisol requirements are not met, increases in breathing, heart rate and a general state of malaise follows. In these cases short term steroid supplementation is an essential adjunct to Buteyko therapy.



## Traditional Steroid Therapy



Steroid

## Buteyko Short Steroid Course



Steroid



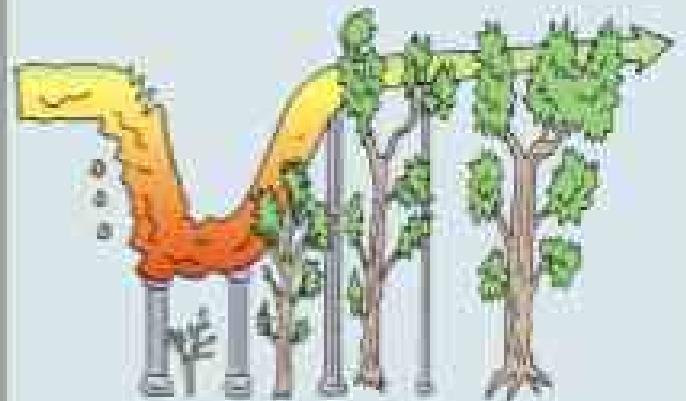
Buteyko Breathing Exercises

Health  
High CP

Asthma  
Attack

Illness  
Low CP

Time



Buteyko Breathing Exercises minimises steroid dose and allows early cancellation of steroid therapy





Steroids can be used briefly, safely and effectively in treating asthma. This is normally a one-time intervention with no further application of steroids being required. The following issues must be understood:

- **The principles on which Buteyko's short and safe steroid course are based.**
- **When is the correct time to use steroids?**
- **What are the best types of steroid to use?**
- **Protocol for steroid therapy in the Buteyko treatment for asthma**
- **Dose reduction and termination of steroid therapy.**
- **How to avoid having to resort to further steroid interventions**

### **The principles on which Buteyko's short and safe steroid course are based.**

1) The main principles are as follows:

- a) Steroids will help you increase your morning CP to more than 20s, but only if you follow the correct dosing procedure (see *Dosing Procedure*).
- b) You will not experience any asthma attacks with an early morning CP of 20s or more. At this point you can terminate steroid therapy if you are able to maintain this CP.

2) How the Buteyko method can help you permanently terminate the use of steroids

- a) The Buteyko method presents us with a very exact physiological law: any asthmatic can live without steroids as long as his morning CP is greater than 20s, especially if he has already been on steroid therapy in the past.
- b) Conventional medical management presents us with a problem: as soon as somebody starts to decrease steroids, his morning CP decreases too, either immediately or a little while later. This increases the chances of an asthma attack. Unfortunately almost nothing can help him retain a high CP. Some time after terminating steroid therapy his morning CP decreases to below 20s and his condition worsens. A low morning CP is the main reason why it is very difficult and almost impossible for asthmatics to live without steroids over a long period of time. Conventional asthma management has no way of terminating steroid therapy permanently.
- c) In order to keep your morning CP above 20s and to stay permanently off steroids without worsening your asthma, you need to practice the Buteyko breathing exercises. This will help you maintain a morning CP greater than 20s.
- d) Without the Buteyko breathing exercises only the steroid holds up the CP making the steroid indispensable over a long time and often requiring the course to be repeated.

3) Does the Buteyko method help me stop steroid therapy *permanently* or only *temporarily*?

a) The Buteyko method gives you an opportunity to stop taking steroid ***temporarily*** as long as you have morning CP greater than 20s and ***permanently*** if you have a morning CP greater than 40s over a long period.

b) It must be clearly emphasized that it is only with Buteyko exercises that steroids can be rapidly reduced. This is because with the Buteyko exercises we can maintain a CP greater than 20, which is the value above which we are guaranteed to feel well. With steroids we can increase our CP, but the breathing exercises enable us to maintain this CP while reducing and then terminating the steroids.

4) Why is this steroid course of *short* duration?

a) Sometimes the Buteyko steroid course lasts only one or two days provided the asthmatic starts the course ***in time***.

b) The Buteyko method tries to apply steroids only in order to increase the morning CP **and not the CP taken at any other time**.

If you start steroid therapy ***in time*** and ***with the correct dose***, then, on average it will last from one-two days.

But if you start steroid therapy too late it will take several days more before you can terminate it. In this case you will need to implement a dose lowering schedule. On average it takes about a week.

When your morning CP rises to more than 20s you will be able to stop taking the steroid because you can maintain this higher CP with the Buteyko breathing exercises.

5) Why is this steroid course safe?

a) Because this course requires a very low dose of steroid. The average dose is from 0,005-0,025 gram (1-5 tablets) of Prednisolone (or equivalent), provided you start steroid therapy ***in time***.

b) Because it is a very short course in comparison with the standard course of steroid therapy for asthma. The consequence is that the Buteyko course of steroid therapy can be shortened relative to the usual course, which can be quite protracted. This distinction is very important because a short course of steroids is completely safe.

c) Medicating with steroids is a temporary measure and comes to a permanent end once the CP has risen sufficiently.

6) What other differences in approach to steroid therapy are there between Buteyko and conventional asthma management?

a) There is a special protocol for setting the dosage. This protocol will show you how to determine the ***“correct dose”*** (*dosing process*) and what is meant by that.

b) The Buteyko breathing exercises allow for rapidly diminishing steroid requirement.

## Warning:

The following information regarding the administration and reduction of steroids is only applicable in conjunction with **regular use** of the Buteyko method.

## When is the correct time to use steroids?

There are three important indicators that will enable you to determine when Steroids should be used.

### 1) Your state of health

- a) When you have a requirement for more than three puffs of Ventolin (or equivalent) per day.
- b) This marks the beginning of asthma exacerbations and a deterioration of your condition. Remember, non-steroidal medications cannot stop a seriously worsening process or condition.
- c) It is necessary to draw a distinction between “need for” and “use of” a non-steroidal inhaler like Ventolin, since it is possible to patiently ride out an asthma attack without resorting to Ventolin (or equivalent). It is the increased “need for” and not the increased “use of” Ventolin that determines the need for additional steroid.

### 2) Your pulse

- a) If your pulse is 10 to 20% higher than your normal pulse (taken when you do not have an attack and while at rest) *both during the day and during the night or over a 24 hour cycle* (For adults: if your pulse is greater than 80 beats per minute on average.)
- b) In 80% of cases both of these conditions will be met. In the remaining 20% only one of these conditions will apply. For example, an indication for increasing steroids is when Ventolin requirement is for more than 5-15 puffs per day, even though the pulse is close to normal. Very often the second condition will appear 2-3 days later.

### 3) Your morning CP

- a) If you have a morning CP lower than 10, **and** satisfy 1) and 2) above then you will need steroids.
- b) If your morning CP is 5-10s, but your pulse is normal and you do not require 3-5 puffs of Ventolin (or equivalent) in a day, then you can increase CP using Buteyko breathing exercises alone and you do not need to use steroids.
- c) The **Morning Control Pause** is measured in the morning after a night's sleep when you are still in the bed and as soon as you wake up. It is a more important index than your CP during the day. During the day your CP will vary too much for a variety of reasons. But the morning CP is independent of your life style.

## Important:

- 1) If you are afraid of using steroids for asthma, you can wait for all three of the above indicators to appear. In this case you will have to use steroids all the same but the dose will be higher.
- 2) It is better to start the course earlier rather than later. It is better to add steroids for treatment of asthma than to increase from a puff of Ventolin (or equivalent) to more than three per day.

### **Example 1: “Do I need steroid supplementation or not?”**

When you wake up in the morning feeling bad after a night of asthma attacks, you need to consider whether or not you might need steroid supplementation (or an increase in your dose if you are already on steroids.)

As already discussed, there are three indicators that will help you determine whether or not you need to take steroids or correct your steroid dose. You need to consider your pulse, your general state of health and your morning CP.

- 1) If your pulse is 10 to 20% higher than your normal pulse and if this has not changed since the previous day, then you need to add steroid supplementation for your asthma. If you have high blood pressure you must consult with your doctor because sometimes steroids can increase blood pressure.
- 2) If your state of health is poor, meaning you required more than three puffs of bronchodilator such as Ventolin over the previous 24 hours, then you need to add steroid supplementation for your asthma.
- 3) If your morning CP is lower than 10s, then you need to add steroid supplementation for your asthma.

### **Example 2: “Will this be a low dose, short term course or not?”**

Your pulse is high, but you are not using more than 1-3 puffs of Ventolin (or equivalent) per day. Your morning CP is around 15s.

- 1) It should be sufficient for you to take 1-2 steroid tablets during the first day while you are setting the dose. If your pulse becomes normal, your health improves sufficiently and your CP does not decrease the next morning, then you can discontinue the use of the steroids immediately. Typically, if you start using steroids *in time*, the course will only last a day and there is no need to taper the dose off gradually.
- 2) If you wait until your pulse becomes high and you need 5-10 puffs of Ventolin (or equivalent) per day and your morning CP drops to below 10s, then you are likely to need three or more steroid tablets on the first day. The course usually lasts several days and you will need to implement a dose lowering schedule. This can all be avoided if you start taking the steroid *in time*.

### **What are the best types of steroid to use?**

Your doctor will advise you on what type of steroid to use but you must take note of the following:

- 1) It is not important what type of steroid you use. The steroid will start working only if the dose is high enough for it to get into your blood in sufficient quantity to affect your entire organism. Only when the steroid shortage has been fully made up will it be effective.
- 2) If you want to control your asthma, the steroid dosage is more important than the type of steroid (oral, inhaled or intravenous injection etc.).
- 3) It is easier to control the required changes in dosage with short acting oral steroids (tablet instead of inhaler).
- 4) If you have any other disease like gastritis, stomach ulcers, high blood pressure etc. you need to take advice from your doctor on the type of steroid best suited to your condition.

## Protocol for steroid therapy in the Buteyko treatment for asthma

The aim of this Protocol is to find “the correct dose” of the steroid for the individual during the first day. This means that the first day must be dedicated to setting the dose.

### The first day of steroid therapy for asthma

These are the rules for setting the dose:

#### 1) Measure your pulse:

Normally, increase your dose until your pulse **starts to normalize**.

The pulse does not actually have to be normal, but it must start to become normal.

#### 2) Consider your state of health:

Increase your dose until you do not need more than one puff of Ventolin or any other non-steroidal inhaler per 24 hour period.

#### 3) Measure your morning CP on the day after taking the steroid:

Usually at the end of the dose setting process your CP rises to over 20s. This may happen by the evening of the first day or the next morning. Therefore during the dose setting process you first need to consider your pulse and state of health.

### How to establish whether the dose is correct (neither excessive nor insufficient)

If you've selected “the correct dose” you will see the following signs:

#### 1) Your pulse starts to normalize.

- It need not be normal, but it must start coming down (normalize).
- If you have *over dosed* then your pulse comes down too quickly.
- If you have *under dosed* then your pulse does not come down within the next 2 days.

#### 2) Your state of health improves.

- To be in a *state of good health* means that while you may not have any symptoms of asthma now; you may still get the occasional symptom which you can overcome with Buteyko breathing exercises or, at most, one puff of bronchodilator in 24 hours.
- If you *over dose* then you will not have any asthma symptoms at all. You can eliminate all symptoms of asthma very quickly by overdosing. Over dosing is not dangerous over short periods, but you need to have the occasional asthma symptom in order to work on your breathing with the Buteyko method.
- If you *under dose* you will need more than 3 puffs of bronchodilator in 24 hours.

#### 3) Your morning CP becomes greater than 20s.

- When the correct steroid dose has been administered as a result of the dose setting process, the level of breathing will decrease automatically. A CP of more than 20s is more likely to help prevent asthma attacks.
- If you *over dose*, your CP will rise up to around 30s and you will not experience any asthma symptoms.
- If you *under dose* then your CP will drop to below 10s.

### If you set your daily dose too high or if you overdose during the dose setting process:

1) You are likely to overdose if you panic at the start of an asthma attack while trying to determine your dose.

2) It is not dangerous to overdose on steroids for a short while. An overdose enables you to reduce your dose more quickly and will enable you to enjoy particularly good health.

### Example 1: “How should I set my dosage for the first time?”

#### 1) Consider your pulse and your state of health.

- a) If your pulse is between 80 and 100 and you can manage without bronchodilators then you are not too bad and may take only one steroid tablet immediately.
- b) If your pulse is between 100 and 120 or greater and your airways are whistling or wheezing and you need one or two puffs of bronchodilator, then your condition is bad and you should take two to three steroid tablets immediately.

The standard dose of a steroid tablet (pill) is 0,005 of Prednisolone or 0,004 gram of Triamcinolone (or equivalent).

If you are taking the steroid in tablet form, don't swallow the tablet but suck it until it dissolves in the mouth.

#### 2) Wait for between **one and two** hours and try to perform the following simple steps

- a) First of all try to settle down and relax.
- b) Pay full attention to relaxation of all the muscles which take part in the inspiration process.
- c) Especially try to relax the stomach muscles around the diaphragm.

#### 3) At the same time you can do any Buteyko breathing exercises not involving physical activity.

- a) If your condition is not too bad, try to do the “Relaxation instead of exhalation” breathing exercise.
- b) One of the features of an attack is the difficulty in breathing out. To help breathe out especially during the early stages of an attack, perform the following.

Breathe in and stop breathing for half a second. (It is not necessary to do a breath hold)

Relax your muscles above your stomach so that you breathe out naturally without any effort

Do not force or mechanically breathe out. Allow the exhalation process to proceed through relaxation of the respiratory muscles.

- c) If your condition is bad, try to do the “Many small breath holding” breathing exercise.

Do many small breath holds each lasting one or two seconds.

Allow an interval of 1-2 minutes between each breath hold. During this interval try to relax the abdominal muscles around the diaphragm.

The most important point to remember is that if the breath hold is too long, then the next breath is likely to be too deep. This will increase the severity of the attack.

#### 4) If there is no change and you are still feeling bad with a high pulse, low CP and a need for bronchodilators, then take one more tablet.

- 5) Try doing Buteyko breathing exercises for the next two to three hours, with particular attention to relaxing the abdominal muscles around the diaphragm.
- 6) If there is still no change, take one more steroid tablet while trying to do the Buteyko breathing exercises. In particular, pay attention to relaxing the abdominal muscles around the diaphragm.
- 7) Continue doing the breathing exercises for the next three to four hours.
- 8) If there is still no change, take one more tablet while trying to do the Buteyko breathing exercises. Continue taking another tablet every three to four hours until your pulse **starts to normalize and you start feeling better**.
- 9) **Warning:** if you have used more than ten steroid tablets such as Prednisolone or Triamcinolone all without effect, you will need emergency medical treatment.

### **Example 2: “How to correct the dose if you are already on steroids.”**

If you are already on steroids you can optimize your dosage for good health. Good health means that your pulse is close to normal and you can readily overcome symptoms with the Buteyko breathing exercises or with a puff of non-steroidal inhaler not more than once in 24 hours.

### **The second day of steroid treatment for asthma**

- 1) The amount of steroid, which you used during the first day, is called “daily dose” or “24-hours dose.”
- 2) On the second day you must divide the daily dose in two parts. One third of the daily dose is called the daytime dose and two thirds is called the nighttime dose.
- 3) The greater part of the daily dose (two thirds of the **daily dose**) you must take before going to sleep at night, because it is difficult to control the depth of your breathing in the night. Therefore the **nighttime dose must be bigger than the day time dose**. The steroid will decrease the depth of your breathing during the night.



## Summary of the dosing process

1) If you have dosed yourself correctly your pulse will be normal, but you may still have the occasional symptom of asthma, which you can overcome with Buteyko breathing exercises or, at most, one puff of non-steroidal inhaler in 24 hours.

2) If your health has improved to the extent that you are completely free of symptoms and, therefore, don't need to do any Buteyko breathing exercises, then you have overdosed on steroids. In this event you need to reduce your dose until the symptoms return, but can still be managed quite easily with Buteyko breathing exercises.

- Having symptoms at this level encourages you to do the Buteyko breathing exercises and will give you experience at suppressing symptoms.

3) If you use a steroid but your pulse is high and you have been taking more than 1 to 3 puffs of a bronchodilator like Ventolin in 24 hours, then you have under dosed on steroids and need to increase the dose.

- **It's better to have overdosed than to have under dosed.** Under dosing with steroids is very dangerous since your asthma is then poorly controlled. With insufficient steroids it is very difficult to decrease the volume of air you breathe. This will increase the likelihood of emergency hospitalization for a severe asthma attack. You will then require much larger dosages of steroid to control your asthma.

4) The total number of tablets you took on the day you set your dose is called the **daily dose (24 hour dose)**.

If your daily dose is more than two tablets, then you should take this same dose for at least a few days. You should then reduce this dose gradually over the next few days.

## The Buteyko steroid dosing protocol contrasts with that offered by conventional medicine which:

1) Does not tailor the dose to an individual's needs. There are no clear guidelines and no signs to follow for setting the dose apart from “good health”, “bad health” and “getting better”. This inevitably leads to doses that are too high, although it results in the patient feeling well very quickly.

2) Prescribes a day time dose which is the greater part of the daily dose. This results in health problems at night.

3) Weans the patient gradually, irrespective of the state of health. Even when the health deteriorates, doctors continue to reduce the steroids.

4) Tends to overdose patients during the entire period of steroid therapy.

## Dose reduction and termination of steroid therapy.

1) How long do you really need to use a steroid?

- Theoretically you need to use steroids until your morning CP becomes greater than 20s. When this happens your state of health and pulse will become normal too and you can decrease the dose and then try to terminate the steroid supplement.

2) For how long should one stay on the same dose?

- a) Upon normalization of your asthma, maintain this daily dose for two days but don't forget to divide the daily dose into a daytime dose and a nighttime dose.
- b) If your health is poor during these two days and if your asthma has not stabilized, then it is necessary to increase the level of your daily dose.

If your condition is bad during the day, increase your **daytime dose**.

- If your condition is bad during the night then you need to increase your **nighttime dose**.

3) When can you begin reducing your dose?

- a) If your asthma is stable for two days, then you may reduce your steroids in consultation with your doctor.
- b) If your pulse is normal and your morning CP is between 20 and 30s, and if you are confident that your health is stable, then you can start reducing steroids earlier. If your CP remains stable at 20 to 30s, then you can start reducing steroids on the next day.

4) How to reduce the dose.

- a) Start by reducing your daytime dose first.

The rate at which you reduce your dose depends on your state of health.

You can reduce your **daytime dose** by half if you have a normal pulse and a CP from 20 to 30s.

If in doubt, reduce the day time dose only by a quarter.

- b) Don't reduce your nighttime dose until you have completed reducing the daytime dose to zero. Only when you are no longer taking steroids during the day should you start to reduce your nighttime dose
- c) Duration of the course of steroid treatment may be from one-two days to one-two weeks depending on the daily dose and your CP.

5) What to do if your condition deteriorates while reducing the steroid dosage.

- a) Your condition will deteriorate only when your CP starts to reduce.
- b) You will have to postpone reducing your steroids.
- c) You have to increase your dosage again and do Buteyko breathing exercises more actively until your pulse becomes normal and your CP stabilizes at more than 20s.

If you deteriorate during the day, then try to increase the **daytime dose**.

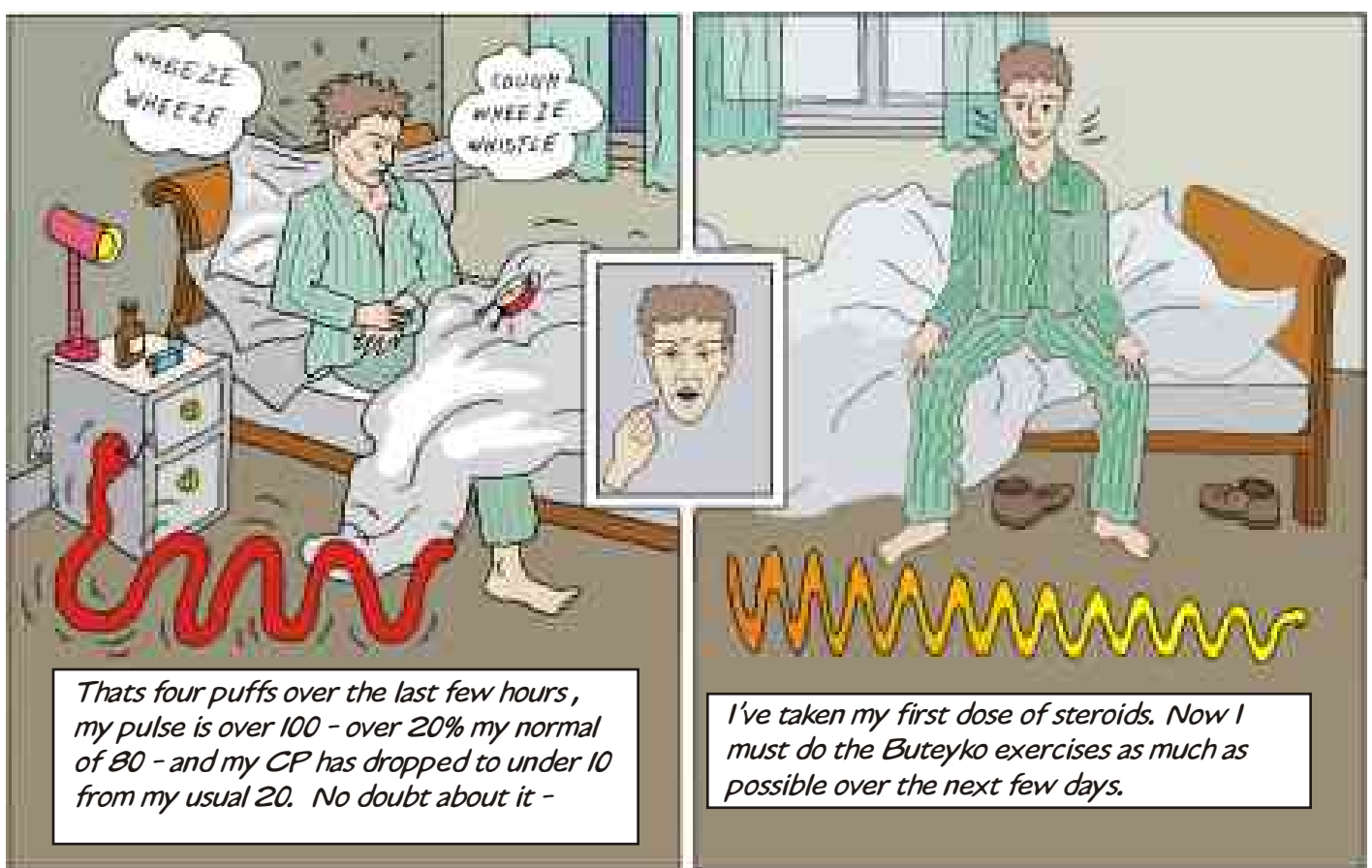
If you deteriorate during the night, then try to increase the **nighttime dose**.

You may not need to increase the overall daily dose.

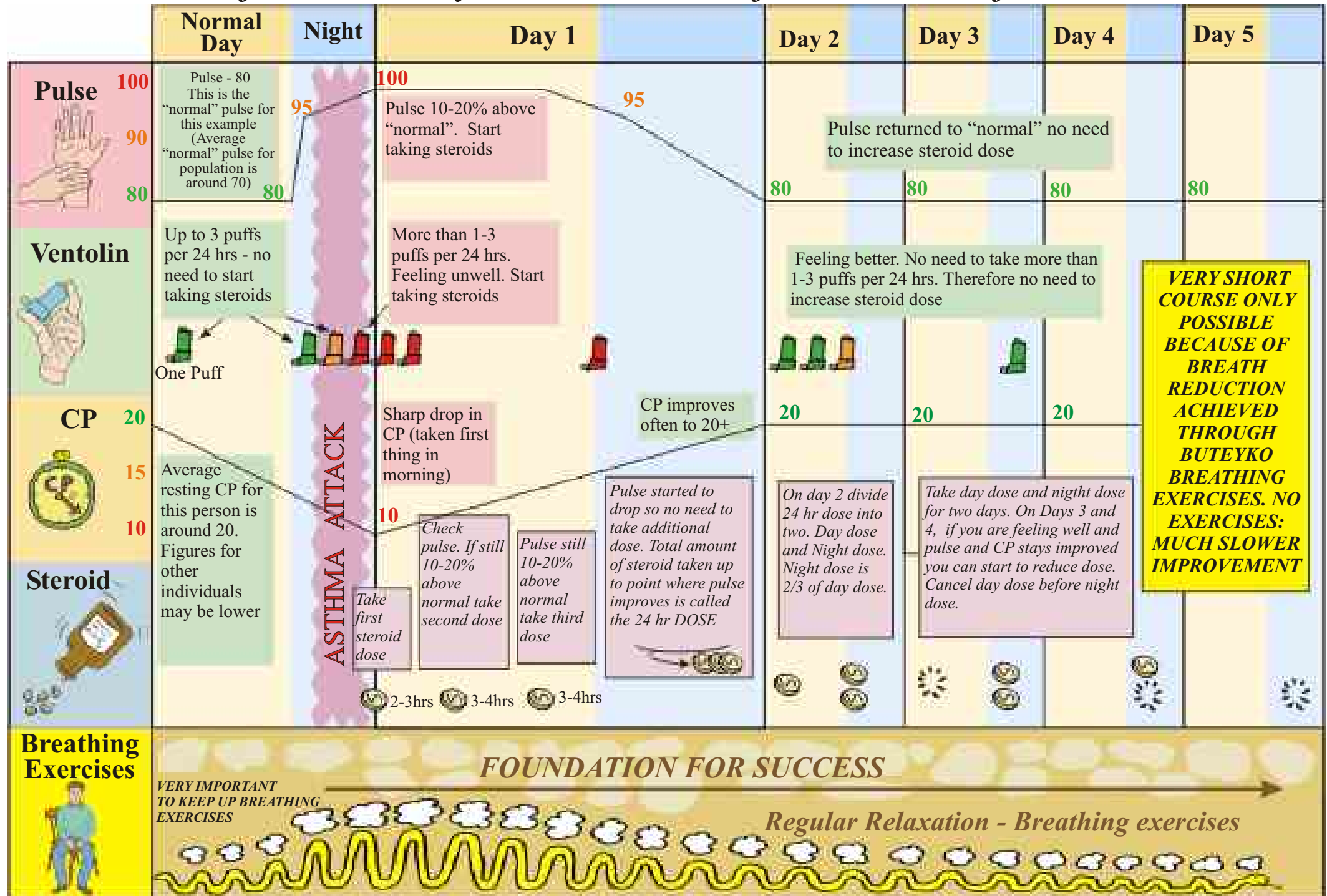
d) When your pulse becomes normal and your morning CP is more than 20s, keep on trying to reduce your steroid dose.

## How to avoid having to resort to further steroid interventions

- 1) If your morning CP is greater than 20s you will not have any asthma attack at any time until your CP falls below 20s. Steroids and the Buteyko breathing exercises will help you maintain a high morning CP. As long as you can keep your morning CP above 20s with the help of the Buteyko breathing exercises, you will not need steroids.
- 2) But you still have asthma as a disease. Temporary CP excursions to below 20s will be accompanied by a return of asthma attacks.
- 3) If you want to reverse asthma as a disease completely and never require any further steroid therapy you need to have a morning CP greater than 40s for at least 6 months.



# Safe, Short Buteyko Steroid Course for Treatment of Asthma



Note: The figures used in this example are used to illustrate the principles of the Buteyko Short Steroid Course. Actual figures will vary between individuals