'THE IMPORTANCE OF CORRECT BREATHING'

By

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These extracts are taken from his text entitled: 'How to best work in partnership with your Healer'.

Other extracts in the series are:

'How to get the most benefit from a Healing session'

'The Power of the Mind'

'Visualisations'

Although avoiding the use of esoteric language, the content is only suitable for the recipient of Spiritual Healing who is prepared to play a full role in the healing process and who recognises that ultimately, each of us must accept responsibility for our own physical or mental wellbeing.

Certain references contained in this text apply to other extracts.

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Perhaps you think that you already know all you need to know on how to breathe. It is after all something that everyone must do to stay alive and yet for most of us it is an automatic response which we seldom have to think about. Often it is only when we subject our bodies to some form of strenuous exercise or effort do we become aware of our breathing when we become 'out of breath' or 'breathless'. It is when we make a sudden or rapid demand on our body requiring extra energy that our lungs must inhale and exhale more air to meet this increase in activity. At the same time our heart has to beat more rapidly to provide an increased blood flow. So, it is not just the food we eat that provides us with the necessary energy we need to fulfil the physical demands we make on our body - the very air we breath has a just as vital a role to play in keeping our body fit and healthy. This is not just in terms of the volume of it that we need to process but like our food, how pure and uncontaminated it is. In other words, its quality.

I have already established that the bones, vital organs and other tissues of our body are simply groups of different cells working in harmony with one another. All these cells need the oxygen contained in the air we absorb through our lungs to function properly and to re-generate and to stay healthy. It is a fact that the vast majority of us, certainly in western style cultures, do not breath properly and are often inhaling substances mixed with the air absorbed by our lungs which are at the very least impeding our bodies ability to keep itself healthy.

Let us try a simple experiment to determine the efficiency of our breathing. I will assume that you are sitting or lying down in a relaxed state whilst reading this text and have not just completed any strenuous activity. Now become aware of the rhythm of your breath. By this I mean how long your lungs take to inhale and exhale each time. Now count the number of seconds you take to complete each cycle. Start counting at the same rate of the seconds hand of a clock. Start at the moment you begin to draw the breath into your lungs and continue counting until that same breath has been discharged. Don't try to exaggerate the breath or deliberately hold it for longer than normal. Monitor your breathing for a minute or so to establish its normal rhythm before counting an individual breath.

If you are breathing in an efficient manner, each complete cycle should take about 4 to 5 seconds. If you are taking longer, then so much the better. This means that you are completing no more than about 12 to 14 breaths in a minute. Unfortunately, because of our modern life styles and the lack by many of us of any regular exercise, an increasing number of us complete each breathing cycle in about 3 to 4 seconds - sometimes even less. This is equivalent to a breathing rate of at least 15-20 cycles per minute. Of course, during heavy physical exercise our breathing rate will increase considerably - as high as 80 times a minute, but I am referring in our exercise to our breathing when we are fully relaxed. A short breathing cycle is often an indication that our breathing is too shallow. To understand the significance of this, we need to consider what is taking place when we breathe and the effect this has on ALL the cells in our body.

I am not attempting to give a full medical explanation of the workings of our respiratory system, and certain aspects have been deliberately simplified or omitted in order to aid an easier understanding of the main points we wish to make.

Although our respiratory system provides the means by which we sense different smells and our ability to speak through our larynx or voice box, the prime function of breathing is to provide oxygen to every cell in the body. Without an adequate supply of oxygen, our body's tissue soon degrades and dies. Oxygen is an essential ingredient for metabolism to take place. This is the biochemical process which keeps our body functioning. Together with digested nutrients obtained from the food we eat, enzymes and other chemicals, the oxygen is vital to enable the cells to burn energy. This process literally keeps us alive and is known as 'aerobic respiration'.

As with a motor car engine, if the fuel is not mixed properly with the correct amount of air, or either of these prime ingredients becomes contaminated, then the engine cannot work at peak efficiency. The resultant loss of vital energy causes sluggish performance or at worse a complete breakdown. Likewise it is with our body. The oxygen obtained from the air we breathe must be of sufficient volume and purity and mixed with various chemicals brought about by complex biochemical changes. Any deficiency or contamination of the original basic ingredients (i.e. the food we eat or the air we breathe), will impede or adversely effect our body at a cellular level resulting in sluggish or impaired functioning of the vital organs. Such a situation, if not addressed, can only lead to disease and/or breakdown of these vital organs and ultimately to premature death.
Therefore, not only must we try to ensure that the food we eat is of the purest quality and contain all the essential vitamins, minerals and other chemicals that our body needs, but the right amount of pure oxygen must be provided to be mixed in the correct proportions at a cellular level with these substances so as to provide the necessary energy to maintain the efficient functioning of all aspects of our physical body.

Most of us realise that the air we breathe is taken in through our lungs. There is however, the common misconception that this air is basically Oxygen when we inhale and Carbon Dioxide when we exhale. In reality usually over 78% of inspired air is Nitrogen. Oxygen constitutes less than 21% of the normal atmosphere we all breathe. The remaining 1% or so is made up of Argon, Carbon Dioxide and a miscellany of other trace gases. When we exhale the proportion of Carbon Dioxide increases to about 4%. In other words we are still expelling 80% of the oxygen taken in with each breath. Based on a normal breathing rate of 12 to 14 breaths per minute this represents about 3 ¾ pints of oxygen entering the body every minute. If as previously established, many of us are breathing too shallow or the process by which we absorb oxygen through our lungs is impeded by contamination or disease, then the correct amount of oxygen is not available to be combined with the complex chemical substances contained in each cell and efficient cellular function is compromised.

One common indication of insufficient oxygen reaching the cells of our body is becoming breathless through carrying out even the most simplest of tasks. Because our reserves of energy are depleted through inadequate oxygen absorption, our body tries to make up the short fall by increasing our breathing and heart rates. this is done in an attempt to absorb more oxygen so as to maintain correct metabolism, but as I have already established, even in a healthy body with an efficient breathing pattern, only about a fifth of the volume of the air we inhale contains oxygen and less than 20% of this available oxygen is actually absorbed by the red blood cells which pass through our lungs. These red blood cells receive oxygen by travelling along fine capillaries from the pulmonary artery and pass in close proximity to minute air sacs known as 'Alveoli'. Each red blood cell largely contains Haemoglobin which is what gives the cells their colouring. The Haemoglobin acts like a magnet and binds the oxygen chemically as it is transported to the various cellular structures of the body.

A pair of healthy adult lungs will contain more than 700 million Alveoli representing a total surface area of between 50 and 100 square yards. The more Alveoli working efficiently, the greater will be their oxygen absorbing efficiency, providing this most essential ingredient for healthy cell maintenance and regeneration.

I have now established how important it is that sufficient oxygen is absorbed in order to maintain our body in an optimum condition and this is why I am devoting quite some time to emphasise the importance of correct breathing. I am now going to describe some simple breathing techniques to aid the process I have just described. The first method is to develop a slower rhythm to your breathing which will enhance the exercises described in the supplementary text entitled ‘Visualisations’. It is intended to create a more relaxed state of consciousness. Changing your breathing pattern will alter the frequency of your brainwaves and in our second exercise I am are going to describe a method of establishing a theta rhythm operating at between 4 to 7 cycles per second. This will provide a gateway to deeper meditation and access to the unconscious mind. This second exercise will also require deeper and controlled breathing and will help to improve oxygen intake. Our third and final exercise is based on the Crane Yogic technique originally practised by Chinese Taoists, and is specifically intended to develop the lower portion of the lungs which are seldom utilised. This technique is particularly useful in dealing with abdominal or intestinal problems. In Chinese Yoga as with other types such as Hatha or Raja, the air we breath is believed to be a vital source of 'Universal Life Force' or 'Vital Energy' which I have previously mentioned in relation to the Chakras energy centres. In Chinese philosophy this energy is known as 'Qi' or in Hindu teachings as 'Prana'. It is because of these beliefs that breathing techniques form such an important part of some Yogic teachings. However, I will not be delving into such matters here preferring instead to concentrate on a purely medical approach in understanding the importance of the process we know as 'breathing'.

Before I describe these breathing techniques, it will be helpful to ensure first of all that we have a basic understanding of the mechanical processes involved when we draw air into our lungs and what we mean when we use terms such as 'Abdominal' or 'Diaphragm'.

Unfortunately, many of us seem to have a wrong impression of the mechanics of the breathing process and often imagine that we are sucking in air through our nose and mouth and inflating a bag like structure inside our chest cavity known as the lungs. We could liken this procedure to when we draw liquid up a straw. In point of fact, this is a far from accurate description, which probably explains why so many of us do not know how to breathe properly or how to go about improving our breathing technique. No doubt because the movements of breathing are usually controlled in a reflex manner by the respiratory centre of our brain, known as the 'Medulla Oblongata', we give little thought to what is actually taking place. However, we CAN override this automatic response and teach our brain to regulate our breathing differently. Indeed, every time we speak or cough, we are imposing a change in our breathing pattern.

The lungs and heart, together with their associated tubes and pipework, virtually occupy the whole of the chest area. They are protected by a bony cage consisting of the ribs on each side, the breastbone at the front, and the spine at the back. The lungs are surrounded by a double membrane known as the 'Pleural Sac'. One layer of this membrane lines the chest cage, the other layer covers the lungs themselves. the two membranes are kept separated by a thin smear of lubricant known as the 'Pleural Fluid'. This pleural sac keeps the chest cavity airtight, the only way in being down the 'Trachea' or windpipe which is the part of the air passage between the larynx and the main bronchial tubes serving the lungs.

The pumping action which regulates the air flow into and out of the lungs is created by the chest cage and two sets of muscles. The first major set of muscles constitutes what we know as the 'Diaphragm'. This consists of three crisscrossing groups of muscle fibers overlapping one another and are joined at their edges to the bottom of the bony cage of the chest, which we have previously described. The diaphragm therefore, forms the floor to the chest supporting the lungs and is domed shape when in a relaxed state (i.e. when there is minimal air in the lungs). This dome, or partial bell shape, is caused by the pressure of the abdominal organs below and projects up into the chest area to within an inch or so of the nipples. Therefore, when we refer to the 'Abdomen' or 'Abdominal Area', we are referring to those organs separated by the diaphragm which are associated with digestion - the stomach, liver, intestines etc and the organs involved with excretion - kidneys, bladder etc.

The lungs are inflated by the diaphragm contracting and becoming flattened which also partially impresses the abdominal organs. This causes the lungs to be pulled down by suction existing between the pleural sac and the diaphragm. The stretchy spongy structure of the lungs enables them to expand as they are pulled down. This increase in volume creates a pressure drop inside the lungs resulting in a partial vacuum. This causes extra air to be forced into the lungs through the respiratory tract as the atmospheric pressure outside rushes in to remove the void. This is how we breathe in. The diaphragm is assisted in expanding the lungs by a second set of muscles connected to the rib cage, known as the 'intercostal'. These intercostal muscles aided by certain other muscles in the back and neck, contract in unison with the diaphragm and pull the ribs upward. The ribs are actually jointed at the spine and breast bone allowing the rib cage to swing up and outwards so as to enlarge the chest and encourage further expansion of the lungs, thus increasing their volume area even further. The lungs themselves play a purely passive role in the actual process of drawing in air. When we exhale, the diaphragm and chest muscles relax. The chest cavity elastically recoils to its previous volume. The elasticity of the lungs in conjunction with gravity pushing down on the rib cage, aids the lungs to contract and to blow air back out the same way it came. The rib cage is designed so that it is slightly slanting downward to assist the lungs to deflate.

From the foregoing, it should now be apparent that correct posture also plays an important role in efficient breathing. If we slouch, we are compressing our rib cage and preventing the efficient operation of our diaphragm - thus impeding an adequate flow of air entering our lungs. This is why posture plays such a crucial role in Yoga in establishing correct breathing principles.

I will now describe the first of our breathing exercises. In this first exercise we will be creating a more relaxed state of mind in order to make us more receptive to the visualisations which will be described later. It is important that you feel totally relaxed which you will not be able to do if you are not sitting or lying in a comfortable position. I am going to try to get you to adopt a slower rhythm to your breathing. I have already explained how to determine your normal respiratory rate. In this

exercise, I am going to try to slow your breathing down and establish a new rhythmic pattern. This will be personal to you and it is not the case that you should be trying to complete a certain number of breathing cycles in a given time or expanding your lungs by taking in more air than normal. Neither should you be attempting to hold your breath at any stage of the breathing cycle. I am merely trying to get you to adopt a slower rhythm to your normal breathing pattern.

We are not in this first exercise so concerned about correct breathing posture. You may indeed, have got into bad habits in the way you normally sit, and not find it comfortable to adopt one of the recommended more erect sitting positions. When you have practised the 2nd and 3rd breathing techniques, you will find that your posture will automatically improve. If you sit now in what is an uncomfortable position which you are not accustomed to, then your muscles will soon begin to ache and your mind will become focused on the discomfort that you feel. This will distract you from establishing a more relaxed, meditative state of breathing. Having established a comfortable sitting or laying position, try to switch off from your normal everyday thoughts. Don't at this stage think about your breathing, just enjoy the quietness of the moment and let your body become more relaxed. Try to keep your mind empty. Whatever you do, don't use this period of relaxation to mull over worries or anxieties that may be affecting you at the present time. Some of us lead such hectic life styles, that we find it difficult to switch our minds off from our every day activities. We get into the habit of thinking that our minds must be constantly active and when we are not at our place of work or physically involved in some activity, we should be planning or working out other matters which are affecting our everyday lives. This is how we become stressed - we do not appreciate that like our bodies, our minds require rest and not just when we are in a sleep state. Our conscious mind needs periods of quiet relaxation every day. This first exercise is helping us to establish this more relaxed state.

If you are succeeding in blotting out most of your random thoughts, you may find that you become more aware of your body's heart beat and the normal momentum of your lungs. Focus your mind now on your breathing. Without attempting to adjust the amount of air you are breathing in, determine if the inhalation is equal to the exhalation. It is important that the period of time you take to draw air into your lungs is the same as when you discharge a breath. Count at your own rate to determine if this is the case. If the exhale is, for example, shorter - then consciously make an adjustment in your breathing cycle so that you are taking as long to breathe out as when you breathe in. In this exercise, the delay between each breath is unimportant.

Continue to monitor your breathing pattern so that you are consciously making sure that both parts of the breathing cycle are the same. Having established an equal rhythm, we are now going to try and regulate the breath by slowing it down. I should again emphasise that you should not try and take deeper breaths. Simply slow down the inhale and exhale so that they are being let in and let out more gradually. If you have previously monitored your breathing rate and established that you are taking only 3 to 4 seconds to complete a cycle, then try to slow this down to 4 to 5 seconds. Practice breathing at this slower rate ensuring that each part of the breath (that is the inhale and exhale), are both equal. After a period of time you will find that this revised breathing pattern will become perfectly normal to you.

In conjunction with the deeper breathing patterns that follow, you will probably find that your lung capacity will naturally increase allowing you to lengthen the time taken to inhale and exhale, particularly when you are in a relaxed state. Do not attempt to take longer breathing cycles so that it begins to feel uncomfortable. Start altering your breathing pattern slowly and practice this exercise regularly so that in a short time it will become normal to you and you will no longer have to think about it. You will then be ready to practice meditative breathing exercises such as the examples which I explain later on. This first exercise is merely a preliminary stage to establish a slower, more rhythmic, form of breathing.

I have already explained why it is so important to maintain an adequate air intake. In our second breathing exercise we will be attempting to increase the amount of air entering our lungs by increasing the 'inspiratory reserve volume'. This is the amount of additional air that our lungs are capable of holding over and above that of a normal breath. In a healthy pair of adult lungs this can mean at least an additional 5 pints of air to the 1 pint we normally inhale during restful breathing, known as the 'normal tidal volume'. For our diaphragm and lungs to be able to work to full efficiency, it is important that, together with the rib cage, they are not impeded. This means that we must ensure that our posture is correct by not slouching or bending forwards. Unless some physical disability prevents you, one should either sit on a firm upright chair or sit cross legged on the floor. The important thing is to maintain your back in an upright position so that the small of your back is slightly hollowed. Do not sit in an armchair or on a sofa which invariably have a seat or back which slopes downwards or backwards preventing you from sitting in a proper upright position. If you are restricted to a wheel chair, ensure that you have a firm cushion in the lumbar region of your back to help keep your chest out.

The correct posture is bolt upright like a soldier standing to attention. Keep your head tilting back slightly so that it is properly balanced on the top of your spine. In the correct position your chin should be parallel with the ground. Keep the spine straight with your chest out and shoulders back and your abdomen tucked in. Your hands should be resting on your thighs or knees either palm upwards or downwards, whichever feels the most comfortable. If you are sitting on a chair, keep your feet firmly on the ground. If you have become used to sitting in soft furnishings, whereby you are usually leaning forwards so that your abdominal area is compressed, then you may find that the straight upright position that I am advocating, will cause you to develop back ache or other muscular pains. However, if you persevere, your body will soon adjust to this proper sitting position whereby it will become your normal preferred posture. Not only will this facilitate easier breathing but it will strengthen your back and prevent curvature of the spine in later life and other abdominal problems.

Having adopted a correct breathing posture, just relax for a few minutes taking normal breaths, as I have just explained in our first exercise. Now place your hands immediately underneath your rib cage so that the tips of your middle fingers are just touching when you exhale your breath. Your little fingers should be approximately in line with your naval, or just above it. Your thumbs should be touching the bottom of your rib cage. Do not attempt at this stage to take deeper breaths, just observe how your middle fingers touch as you exhale and part slightly when you inhale. If they do not separate, then this may be an indication that you are breathing too shallow.

Having made sure that you are fully relaxed, now determine how much your rib cage expands and hinges up between each breathing cycle. Typically, the space between your middle fingers should widen to about 1/8th of an inch, but this can vary depending on your fitness and physical stature.

Whatever is the amount of expansion between your middle fingers, this will be used to measure how much your lungs are expanding as we employ a more deeper breathing pattern.

Firstly, try to expel as much air from your lungs as possible. Pull in your abdominal muscles so as to push up the diaphragm and then let all the air out. When you think that the lungs are empty, try to force out more air by making some exaggerated gasps - but only whilst trying to let more air out. This will resemble the sound of 'huh, huh, huh', as you use every effort to empty the lungs. It may take some practice to learn to force the belly upwards as you exhale. Having discharged all the air you can from your lungs, start to draw the breath in gradually whilst at the same time pushing the abdomen DOWNWARDS. In fact, many of us are inclined to push our abdominal organs up making it more difficult for the diaphragm to stretch - thus impeding the lungs from fully expanding. I will be mentioning this aspect further in our third breathing exercise. Continue to draw in as much air into your lungs as you can, slowly and steadily. Do not draw the air in rapidly. As you inhale, become aware of your middle fingers separating as your lungs begin to fill with air. Observe how much more the gap between your middle fingers has increased as the lungs become full. Practice taking in as much air into your lungs as possible. When the maximum gap between your fingers starts to become constant, after having completed several breathing sessions, then you will know that you have reached your full lung capacity. Now concentrate on lengthening the period of each breathing cycle. Try to slow this down as much as possible. Learn to hold the breath for a few seconds between inhaling and exhaling. Similarly, when letting the breath out, try holding it for a moment and take as long to exhale as you did with the inhalation. By practising this exercise regularly you will find that it will become progressively easier to slow down the breathing cycle and to take in a much larger volume of air. Do not be discouraged if you experience some discomfort. Certain muscles involved in you respiratory system have got to be trained to do their job properly, and they may complain by creating a few aches and pains.

There is the old adage that 'consciousness expands with breathing'. It is medically accepted that our brain waves can be modified by adopting different breathing patterns and this can enable us to influence such things as our heart rate and pain threshold. Biofeedback machines are now extensively used to teach people to deal with stress by showing how their heart rate can be slowed down through relaxation and altering their breathing pattern. According to American research, a brain wave of between 4 to 7 cycles per second, known as the 'Theta Rhythm', represents the best frequency for carrying out visualisations and gaining access to the unconscious mind. It is also the best frequency for carrying out lower abdominal breathing which forms the basis of our third breathing exercise. Having practised developing deeper breathing, it should now be relatively simple to adjust your breathing pattern to a Theta Rhythm. Adjust your breathing cycle so that the inhalation and the exhalation each take about 4 seconds. Similarly, make the pauses between each, about 4 seconds. Continue this cycle for a few times and then increase the duration of the exhaled breath only. In other words, breathe in for a count of 4. Hold your breath for 4. Breathe out over a count of 4. Pause for a count of 4, before breathing in again. Continue this cycle for a minute or so, and then regulate the out breath only, over a progressively longer period. Keep the in breath and pauses to the same count of 4.

Our third breathing exercise is based on the early Chinese Taoists method known as 'The Crane'. It is intended to energise and strengthen the abdominal area and is called 'The Crane' after the bird, which is often observed stimulating its abdominal area by folding one leg into its belly. This exerts pressure on its abdominal muscles and the internal organs. In Chinese Yoga is the fundamental belief that to lead a long and healthy life, one must maintain a strong internal system. The Crane method is

primarily intended to strengthen all parts of the digestive tract, recognising that weaknesses in this area makes us more prone to all types of diseases, particularly diverticulitis and cancers of the stomach, intestines and Colon. Other conditions such as constipation, diarrhoea, and ulcers, as well as what has become commonly known as irritable bowel syndrome', are all indications of weakness in one or more parts of the digestive tract. Since this tract is normally controlled by involuntary muscles, the Crane technique teaches us how to bring these muscles under our control whereby the abdominal organs are encouraged to move, and so become strengthened.

The Crane method causes the lungs to push downwards, thus pressing the abdominal organs against the surrounding muscles. This has the effect of expanding the belly. This exercise not only strengthens the digestive tract, but also encourages greater movement of the diaphragm and therefore, more air into the lungs. Although this third exercise may be carried out in a sitting position, it is preferred if it can be performed laying flat on the ground. It is best to practice this exercise early in the morning and always on an empty stomach. Alternatively, you may perform this exercise when retiring at night, when any food or drink has had plenty of time to be processed by your digestive system. Woman should not perform this exercise during pregnancy.

Place your hands, palms down, on the lower abdominal area so that they lie either side of the naval. This is a lower position than we used in our second breathing exercise to measure the expansion of the rib cage. Begin to exhale slowly whilst at the same time pushing gently downwards on your abdomen so that it creates a hollow cavity. The action of pushing down on the lower abdomen will help to push the abdominal organs up against the diaphragm, thus helping to deflate the lungs and discharge the maximum amount of air. When you have completely exhaled, begin to inhale slowly, but concentrating your mind on pushing the upper part of your abdomen down towards your naval. If you are doing this properly, your belly should expand like a balloon. Whilst inhaling using your abdominal muscles, try to avoid expanding your chest. As I have already explained, the action of the lungs expanding automatically causes the rib cage to rise. With Crane breathing, we are trying to encourage the lungs to inflate DOWNWARDS, by using the lower abdominal muscles. Try to consciously restrict your chest from expanding as you perform this exercise, so as to force the diaphragm to push down on the organs within the abdomen. At the same time focus on the naval area and imagine that you are only using your lower lungs to breathe in.

Use your hands to assist the abdominal muscles by pressing in the appropriate direction. Once you have mastered the technique and the abdominal muscles are working efficiently on their own, your arms can be laid down to the side of your body. Practice this exercise regularly to maintain optimum performance of your respiratory system. Now try the second breathing exercise again, allowing your chest to expand to its fullest capacity. Position your hands just below the rib cage, as previously explained, and measure the increase in capacity between a maximum exhalation and inhaling to your fullest extent. You will probably be pleasantly surprised to realise that what you thought was your lungs maximum volume, has now increased.

Any discussion on breathing would not be complete without mentioning the subject of 'Hyperventilation’ or as it is often referred to - 'over breathing'. With this condition, contrary to popular belief, any exercise which encourages deep breathing is in fact making matters worse. Often hyperventilation is associated as being a symptom of stress and may be the root cause of a variety of conditions such as panic attacks, chronic tiredness, heart palpitations, aching limbs, and chest pains. People who suffer from cold hands and feet and who put this condition down to 'poor circulation'

may in fact, be suffering the consequences of over-breathing. Even many digestive disorders which cannot be identified from intensive medical tests or examinations and which often are conveniently categorised as being irritable bowel syndrome', may be the consequence of hyperventilation.

Our body has a complex mechanism for monitoring the ratio of oxygen to carbon dioxide within our respiratory system. In fact, it is levels of carbon dioxide, rather than oxygen, which play a much greater role in determining our breathing pattern. This is regulated by chemically sensitive cells located in the brain stem known as 'chemoreceptors' which monitor the level of carbon dioxide in the 'cerebrospinal fluid'. This is a clear watery fluid which surrounds and protects the brain and spinal cord. The chemoreceptors monitor the level of carbon dioxide which diffuses from the blood into the cerebrospinal fluid. If the level of carbon dioxide builds up, the chemoreceptors send nerve messages down the spinal cord to the diaphragm to increase breathing, so as to lower the carbon dioxide levels in the body.

With hyperventilation, we are breathing too rapidly when our bodies are in fact at rest and not requiring extra oxygen. The respiratory centre of the brain tries to compensate for this by calling for more oxygen - in other words, we over breath. Our brain is misreading the cause of the situation and is unwittingly making matters worse. This is why people who are suffering from a chronic bout of hyperventilation, or a panic attack, are encouraged to breath into a paper bag so as to increase the level of carbon dioxide in their blood stream. This will be sensed by the 'chemoreceptors' which transmit the correct message to slow down our breathing rate. Our body also controls the amount of air we inhale by expanding and contracting the bronchial tubes. This process is known as 'Dilation' and will be described in further detail later on in respect to the other major respiratory disorder known as 'Asthma'.

If you suspect that you are suffering from hyperventilation, you should not attempt the 2nd and 3rd deeper breathing exercises which I have just given. The first method which I described, to encourage slower and gentler breathing, will help to establish a more balanced breathing pattern. It is important to learn to pause between breaths and to only breathe through the nose. When you have retrained your brain to breathe properly, you can then practice the other deeper breathing exercises to improve your oxygen intake. If you require further advice and instruction in what is termed 'Chronic Hyperventilation Syndrome', then you may wish to contact a Physiotherapist who has been given the necessary training to help people deal with this condition. Look for a chartered physiotherapist who will hold a state recognised qualification. A list will normally be found in your local 'Yellow Pages'. When phoning, be sure to ascertain that they have the necessary experience to help people to deal with hyperventilation - not all physiotherapists are familiar with treating this condition.

One of the most serious respiratory disorders is 'Asthma'. This can be a very debilitating condition and reported cases are unfortunately, on the increase. It is estimated that over three million people in the U.K. alone are affected by this condition and every year chronic attacks kill hundreds of people. Conventional medicine has still to unravel all the causes of Asthma which vary from person to person. The commonly held belief is that the condition may be aggravated by some infection, or irritant being breathed in, or a food allergy, or allergens such as pollen, or even some emotional upset. Whatever triggers the reaction, the result is a severe narrowing of the bronchial tubes or bronchi. These are a branching system of tubes conducting the air we breathe from the windpipe to the lungs. These bronchi are lined with muscles which can contract causing a severe restriction to the amount of air which can enter our lungs. This contraction is primarily caused by the Vagus nerve in

the brain releasing the chemical 'Acetylcholine' at the nerve endings controlling the bronchial muscles. Some control of these muscles is also caused by the body releasing 'Histamine' to an allergic reaction. The bronchial muscles can also expand to allow an increase in air flow in response to the body requiring an additional amount of energy. The body can release chemicals known as ‘Bronchodilators’; the most important of these is 'Adrenalin' which has the effect of relaxing the bronchial muscles allowing more air to pass into the lungs.

Conventional medicine basically treats Asthma by giving drugs to counter the effect of the body releasing an excess amount of histamine or acetylcholine which as we have just determined, will cause the bronchial tubes to contract. These chemicals can be released by the body malfunctioning and producing an excess of antibodies to deal with some infection or other irritant being breathed in. Therefore the drugs prescribed are intended to encourage the bronchial tubes to relax or expand in a similar manner to the body's own bronchodilators. With emergency treatment administered by a medical professional, Adrenalin or Aminophylline will normally be injected. The steroid, Hydro-cortisone may also be administered which has a similar effect. Self medications to prevent or minimise an attack, normally involve taking tablets or the use of an inhaler. Drugs like 'Cromolyn' taken by inhalation may be prescribed to decrease the release of histamine. Bronchodilators such 'Isoproterenol' or 'Ventolin' may be given in various forms such as tablet, or as an aerosol inhalant or as an ampoule for a nebulization spray. In severe cases of Asthma, steroid drugs may be prescribed.

Now I have given a basic explanation of the conventional methods for dealing with Asthma, it should be apparent that these methods of treatment are largely treating the symptoms rather than dealing with the root cause. I am now going to describe what is a controversial theory as to what usually causes the Asthmatic effect and how to CURE it. It is based on the premise of breathing less will improve or even eliminate the Asthma condition. This proposition may in part seem to contradict some of my previous statements but in fact, it reinforces them and extends our understanding of how our body regulates the levels of oxygen and carbon dioxide. This theory is based on research carried out by the Russian physiologist Professor Constatine Buteyko. He asserts that the narrowing of the bronchial tubes, as I have previously described, and which causes the characteristic wheezing and feeling of breathlessness associated with Asthma, is the body's attempt to stop us blowing off essential carbon dioxide. If you stop hyperventilating, carbon dioxide levels will rise and the bronchi will re-expand naturally. When you hold your breath, you increase the level of carbon dioxide which opens your airways enabling more oxygen to be breathed in. In other words, when you hyperventilate, you have less oxygen. Your bronchial airways narrow because your body wants to hold onto the carbon dioxide. If you now use drugs to open the airways, then you may relieve the immediate symptoms but the underlying problem still remains. Professor Buteyko also believes that in the long run the use of bronchial dilating drugs can make the Asthma worse particularly if they are provided in large doses via nebulizers. In fact contrary to popular belief, the use of steroids is considered preferable in the short term as they do at least successfully combat any inflammation which may exist in the bronchial tubes. Once the inflammation has been eliminated the object should be to reduce and ultimately eliminate the use of them as quickly as possible. Many patients believe that the biggest side effects are due to steroids and prefer the use of nebulizers. In fact, according to Russian research, the reverse is true.

The 'Buteyko Technique' of breathing which we will now describe, emphasises the importance of maintaining any prescribed level of steroids but to ease off and preferably not to use nebulizers. This may alarm some doctors who will regard this as inviting an Asthma attack with possible serious

consequences. It should be emphasised, that I am not suggesting that any patient should discontinue any prescribed medication by their doctor or other health care professional. I am merely describing a special breathing technique which has been proved very successful in Russia over a period of more than twenty years for dealing with Asthma. The vital rule of the Buteyko treatment is to only breathe through your nose. Therefore, any nasal disorder must be addressed first before this breathing technique can be practised. At night, or when you go to sleep, it may be necessary to even tape up your mouth to ensure that you do not unconsciously hyperventilate.

Establish a steady breathing rhythm as I have already described in our first breathing exercise. Do not attempt to take deeper breaths. When you breathe out, pinch your nose shut with your fingers and delay taking in a new breath for as long as possible. You will probably find that you will only be able to resist inhaling again for a few seconds. It is much harder to delay breathing in following an expired breath than to hold a total inhalation. Continue this process of taking slow regulated breaths. Do not breathe rapidly. Take the breath in gradually. Hold it for a second or two, and then let the breath out in the same gradual manner. When you have exhaled, pinch your nose shut and start counting the number of seconds you can resist taking in a further breath. Take as long as you possibly can before inhaling another breath.

Try to find at least 10 to 15 minutes every day to practice this breathing exercise. Make it part of your daily routine. Do it as often as you can. It is better to devote several shorter periods each day than to have one extended session. You will find that you will be able to extend the breath by standing up and walking around a room with your nose pinched shut. If you persevere, it will become progressively easier and soon you will be able to delay taking in a further breath for periods of well in excess of half a minute. With continued practice, your brain will learn a different breathing pattern ensuring that the correct level of carbon dioxide is maintained in your blood. This will make it much less likely that you will hyperventilate and an asthma attack will have been prevented.
I started this section on breathing by emphasising that it is not just the amount of air we breathe which helps to keep us healthy, but how free that air is from any pollutants. I cannot therefore, avoid mentioning the subject of smoking. There seems little point in me quoting from the overwhelming statistical evidence which proves conclusively that your chances of contracting one of the many potentially fatal or disabling lung disorders such as cancer, emphysema, and bronchitis are greatly increased by smoking. Quite a few doctors and other health care professionals, who should know better, still smoke, so clearly pointing out how smoking WILL affect ones state of health is not sufficient a deterrent to make most people give it up.

For those of an older generation who were brought up believing that smoking was a perfectly acceptable social habit and did not originally realise that they were partaking of one of the worlds most addictive drugs; it is more easy to understand why, having become hooked on the nicotine, most of them find it so hard to give it up. For younger people who have been made aware from the time they started smoking of the potential risks, it is more difficult to understand why some of them should still choose to start smoking in the first place. For this younger category, the reason in most cases is probably to be more accepted by their particular social group and to feel 'grown up'. Nearly all of us when we are young, and when our body is relatively fit and healthy, believe that we will always be this way. We take for granted that our body will cope with, or recover from, the often constant abuse we subject it to. Our body does have a marvellous ability to repair itself and to ward off many common ailments, but if we do not look after it properly, eventually our body will start to rebel and begin to break down. Most young people have very little understanding of what it is like to

suffer constant, unrelenting pain. They think that these things will never happen to them.

Unfortunately, some of them become complacent and are quite prepared to take the risks associated with smoking or the partaking of other even more potentially lethal drugs. They have no perception of how their quality of life could be seriously adversely affected by the taking of these substances.

Keeping specifically to the subject of smoking, if we have any respect for our body, we should not smoke. Even if we choose to ignore the risks of contracting one of the serious lung disorders, we should realise that our body's natural filtration system is ineffective at repelling the harmful toxins contained in cigarette smoke. The toxic components include carbon monoxide, nicotine and tar. I have already explained how our body absorbs oxygen and transfers it to every cell in our body via our red blood cells. If these cells are being constantly contaminated by the poisons contained in cigarettes, then this can only have a harmful effect on our basic metabolism. So, it is not just our lungs which are being put at risk through smoking, but literally every part of our body. Yes, EVERY part of our body is being affected. The consequences are incalculable - cells will be destroyed or become malignant or mutate. Their correct functioning will be impaired, thus creating a chain reaction affecting the body's ability to maintain healthy function. It is my assertion that any adverse medical condition will be made worse, or aggravated by, the inhalation of tobacco smoke. As previously stated, our body is no more than a complex cellular structure. Some types of cell die and are replaced. Some are being constantly rejuvenated. Others die and can never be replaced. It is no more than common sense to realise that by contaminating living cells through polluted air, containing harmful toxins, will at the very least impede their proper function.

I made reference just now to our body's filtration system. I am primarily referring to the method by which impurities are removed from the air we breathe rather than how our kidneys purify the blood. There are two lines of defence to ward off harmful dust particles, bacteria, and other air born pollutants from entering our lungs. The first defence mechanism is located in the nasal cavity and in particular, those parts medically described as the 'Middle and Inferior Conchae'. These are coated with respiratory mucous membranes which trap the impurities and carry them on waves of hairlike cells to the throat, to be swallowed and dealt with by gastric juices.

If any harmful particles evade the nasal filtering system, there is a second line of defence located in the bronchial tubes. These airways are similarly lined to the nasal cavity with mucous membranes containing goblet cells producing an endless supply of sticky mucous to catch the offending impurities contained in the incoming air. On these membranes are similarly borne millions of hair like strands known as 'Cilia', which beat rhythmically to push up the contaminated mucus from the lungs and down the throat.

Prolonged cigarette smoking paralyses the cilia, and eventually destroys them. The body's ability to remove harmful irritants from the air we breathe has now been impeded. The lungs will now have increasing difficulty to clear the mucous and in an attempt to do so develop what is commonly referred to as the 'Smokers Cough'. More serious, is that the lungs have now no defence against the ever increasing level of pollutants that are contained in the air we breath. These begin to attack the alveoli air sacs, whereby the vital exchange of oxygen and carbon dioxide, which I have already explained in some detail, is now seriously compromised. Therefore, smoking has not only affected our respiratory system, which can lead to obstructive lung disease, but eventually chokes and destroys sufficient alveoli to prevent an adequate supply of oxygen reaching all the cellular structures

of our body. These cells are also at the mercy of all the toxins absorbed by our red blood cells as they take vital oxygen from what are now critically contaminated lungs.

It is small wonder that our overall state of health deteriorates and we begin to develop all sorts of physical disorders which we may not at first have associated with smoking. It must be conceded that the air we breathe does unfortunately, contain an increasing level of toxins caused by industrial pollution and the burning of fossilised fuels. The air we breathe in towns and cities also contains a much higher level of dust particles which irritate our respiratory system. Of course, the food we eat may contain chemicals which can damage our health. It is known that more than 20 chemicals used in agriculture, can cause cancer. Modern methods of farming often mean that the fruit and vegetables we eat are devoid of vital minerals and vitamins necessary for healthy cell maintenance. We are yet to know the full effect of genetically modified food on our physical wellbeing.

All these factors can affect our state of health and make us more susceptible to contracting one of the many dreaded diseases. Smoking is my no means the only culprit and cannot be blamed, for example, for all the 40,000 new cases of lung cancer reported each year in the U.K., alone. However, the vast majority of reported cases of people with respiratory disorders are those who smoke and since most of us cannot avoid the other sources of pollution, it stands to reason that those who do smoke must be putting themselves at greater risk. Since the early 1960's smoking has been recognised as being the U.K 's deadliest drug addiction which kills one in two regular smokers. Although now regarded as an anti social activity, 12 million people in the U.K. still remain hooked on the glamour, comfort, and the addictive power of smoking. Ironically, you may smoke because you believe that it helps you to cope with a particular medical condition. In fact, smoking may be the biggest contributory factor which is making your condition worse - if indeed, not the root cause. Cigarettes are regarded by many smokers as being a great comforter, to help relieve stress and depression. They seem to create a calming effect and an increased feeling of wellbeing. This is in fact a fallacy and the latest medical evidence suggests that long term smoking may make you more depressed. Cigarettes contain a number of chemicals which affect the brain and smokers are twice as likely to develop depression as non smokers.

It therefore becomes a vicious circle - the more depressed you are, the more you smoke. Perhaps you smoke because you feel it 'soothes the nerves' and helps you to cope with the pain that your medical condition has created. You therefore, take solace in the 'Nicotine Buzz'. Like any drug, the effect is short lived and increasingly you feel the need to take more. Those toxins have now permeated through the blood stream to every part of your body agitating your nerve cells making the pain and discomfort even worse. So what do you do now? - Probably, if you are true to form, smoke another cigarette.

These are some of the facts concerning smoking. Ignore them if you wish or pretend to yourself that they are untrue - but please do realise that Spiritual Healing, or any other form of therapy or treatment, as well as taking any pills, potions, or quantities of vitamin and mineral supplements, will not have any lasting beneficial effect on your health if you refuse to give your body the best possible chance of recovery. This includes inhaling the cleanest air possible and in sufficient volume.

Finally, before I close this section on breathing, and our reference to smoking, I will provide just two statistical facts:- A recent European report states that passive smoking - by which we mean non smokers who have to frequently breath in the air containing the smoke produced by smokers, will kill

more than 22,000 people per year in Europe. Passive smoking also increases the risk of heart disease. Non smokers who live with smokers have a 30 per cent greater risk of contracting heart disease at the age of 65 than non smokers who are not exposed to tobacco smoke. Believe it or not, that's equivalent to smoking just one cigarette a day.

For those who do smoke, particularly in a home environment shared by friends and family, do you really think that you have the right to gamble with their lives and physical wellbeing? Just trying to avoid being near people when you are smoking in public is not, with due respect, sufficient. If you can be considerate to people who may be complete strangers, is it not somewhat illogical that you do not show the same consideration to those who are close to you and who may be sharing a much more confined space containing much higher concentrations of toxins from your cigarette smoke? Irrespective of the fact that it happens to be your home, please try to give consideration to their wellbeing and refrain from smoking. Better still, take notice of what I have said in this text, and give up smoking. It will be the best decision you have probably made in a very long time. If you need help to fight the addiction, consult your doctor who will be able to prescribe treatments to help you.

In the next topic entitled ‘Visualisations’, I am going to describe some relaxation techniques and powerful visualisations to help combat some specific medical conditions. I would suggest you leave reading this until later on when you have had the opportunity of mastering the breathing techniques which I have previously described. In ‘Visualisations’ we will be embarking on what could be described as a 'magical journey' so please try to ensure that you are in a relaxed state and are not likely to be interrupted.