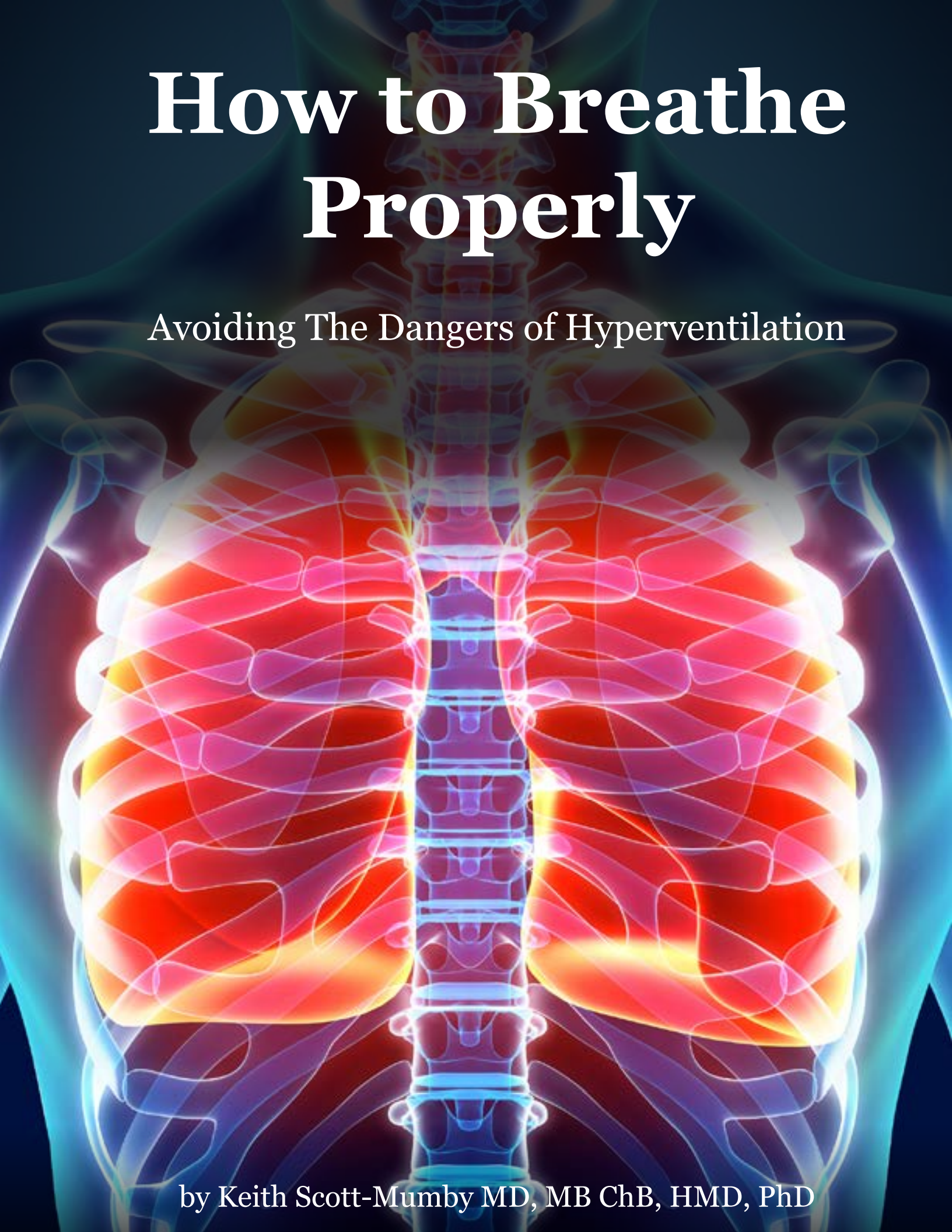
How to Breathe Properly

Avoiding The Dangers of Hyperventilation



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The Breath Of Life

Pneuma is an ancient Greek word for "breath", and had a religious context, meaning "spirit" or "soul". From *pneuma* we get our words pneumatic (air driven) and pneumonia (disease of the lungs). *Pneuma* had various technical meanings for medical writers and philosophers of classical antiquity, including Aristotle and the Stoics.

Their view was that *pneuma* sustains consciousness. They were not much wrong!

According to Diocles and Praxagoras, the psychic *pneuma* mediates between the heart, regarded as the seat of Mind in some physiological theories of ancient medicine, and the brain. It all sounds a bit odd to us but in fact is curiously close to modern scientific understanding.

In classical philosophy, *pneuma* has to be distinguished from the word *psyche*, which originally meant "breath of life", but has come down to us as "spirit" or most often "soul". Psyche in classical mythology, was a princess of outstanding beauty who aroused Venus' jealousy and Cupid's love.

Pneuma is mentioned several times in Greek translations of the Hebrew Bible and the New Testament.

To the ancient Gnostics, the word pneumatic meant: *"spiritual", fully initiated, immaterial souls escaping the doom of the material world via gnosis.*

It all boils down to the observation that, without breath, there is no life.

We'll dial it in further and see that, without healthy breathing, there is no healthy life. But what do we mean by healthy breathing? Certainly NOT deep breathing! That leads to a state we call hyperventilation and it is far from optimum.

Hyperventilation and The Importance of Proper Breathing

The subject of hyperventilation is of considerable importance to knowledgeable holistic doctors. In the 1980s, it was talked about a lot. Today it is less widely known and appreciated, which means it is fast becoming a "missing" or forgotten diagnosis.

This pamphlet aims to do something to reverse the trend. I urge that conscientious practitioners study and learn more about it. In doing so, you will uncover more and

more cases of it and, as a result, be able to help many people who would otherwise baffle those who practice the healing arts!

The point of introducing it to this text is that hyperventilation may also be a source of obscure and unusual psychiatric complaints.

What Is Hyperventilation?

The word means over-breathing: that is, breathing in excess of physiological requirements.

In the normal course of events air is drawn into the lungs. Oxygen is removed into the blood and, at the same time, carbon dioxide is given off as a waste product in the exhaled breath. We call this process respiration or, more correctly, external respiration.

The uptake of oxygen need not concern us here. The oxygen is tightly bound to hemoglobin (the red blood pigment) and remains at a fairly constant level provided the lungs are working normally. The body only takes up abut 25% of available oxygen, so oxygen deprivation is not really an issue for people with undamaged lungs.

Carbon dioxide, on the other hand, dissolves directly into the plasma. A simple chemical reaction takes place, which may be represented by the equation:

CO_2	+	H_2O	=	H_2CO_3
Carbon dioxide	+	water	=	carbonic acid

Carbonic acid dissociates into H^+ ions and HCO_3^- (bicarbonate) ions and this affects the acidity of the blood (the blood's pH, for those with scientific knowledge).

Both the kidneys and the lungs control bicarbonate levels, the kidneys by selective excretion and the lungs by blowing off extra carbon dioxide. There are chemicals called *buffers* present in the blood that are able, to a certain extent, to 'mop up' excess acidic and alkaline ions, but there is a limit to how much they can regulate the body's acid-alkali equilibrium.

You will now readily see that over-breathing will lower the carbon dioxide levels excessively, which will deplete blood bicarbonate and will in turn upset the body's acid-base equilibrium enough to cause symptoms in susceptible patients.

Those who perpetuate the acid-alkali foods and water myth need to get a grasp of this crucial physiology. The body does not like pH values outside a very narrow range and the kidneys will restore the imbalance created by any substance that causes a major departure from normal values, whether acid foods or “alkaline water”, etc.

Of course, we are talking about un-conscious involuntary overbreathing now, not something indulged in temporarily to order to play the bagpipes or some similar act. It is a bad habit that has become elevated to the status of a disease process.

Symptoms

The brain is susceptible even to tiny drops in carbon dioxide levels. It is not surprising, therefore, that a number of subjective symptoms can be produced, including major psychological disorders, as well as objective responses. The table below lists the common symptoms that must lead to the consideration of hyperventilation as a diagnosis.

For each category score 1 point for each symptom even if only one symptom within the category applies to you. Do not increase your score if you suffer from more than one of the symptoms in a category.

Mental States

“Spiritual Emergency”, so-called (ref. Stanislav Grof)

Sensation of floating (feeling ‘spaced out’, ‘unreal’ or ‘distant’)

Difficulty with memory

Difficulty concentrating

Mental confusion (‘racing thoughts’)

Tension

Anxiety

Panic attacks, including Out-of-Body

Fear of crowds, shops, queues, stuffy places, artificial lights, lifts, trains, underground trains, etc. Feel physically ill, tight-chested, prone to collapse when faced by the above situation

Temporary delusion

Seeing things that are not there (hallucination)

Quick temper

Quick/easy tears

Coma, stupor or convulsions-if hyperventilation is severe

Sleep

Vivid/frightening dreams

Waking in morning feeling ‘drugged’/headachy/fatigued/lethargic/with aching muscles

Waking in the night choking/breathless/panicky

Waking repeatedly soon after going to sleep

Sleep apnea

Eyes

Blurred or double vision

Distortion of perspective (‘the room tilts away’)

Sensitivity to bright lights

Ears

Vertigo (dizziness)

Tinnitus (ringing/buzzing in ears) which varies from hour to hour

Sounds seem distant or unusually loud

Sensitivity to loud noises

Nervous System

Lack of co-ordination/bumping into things/clumsiness ‘Tension headache/thick head/hangover-like state for large part of many days

Headache during ‘attacks’/caused by exercise

Migraine attacks

Numbness/’deadness’/tingling in extremities, limbs, lips, face, tongue

Feeling ‘electric’ – but not the electric shock one can get by making contact with an object

Unpleasant sensations in skin/just below surface of the skin

Cold/burning/aching/ ‘creeping’ feeling, commonly in the thighs/buttocks/ feet but maybe other parts of body

Autonomic Nervous System

Emotional sweating/sweaty palms/armpits

Easily blushing or going very pale

Cold hands/feet (when rest of body is warm)

Raynaud’s disease

Respiratory System

Unreasonable breathlessness/air hunger/feeling of restricted chest

'I do exercises to improve my breathing'

'I do not breathe enough/breathe deeply enough'

'Sometimes I stop breathing/have to remember to breath'

Frequent sighs/yawns

Cigarette smoke provokes other symptoms listed on this chart

Singing voice becomes off-key/tuneless/husky

Speaking/singing loudly provokes symptoms listed on this chart

Speaking voice goes husky/feels strained

Throat dry/'rough'/sore

Asthma attacks now/in the past

Heart

Rapid, slow or irregular heartbeat

Blood-pressure changes easily

Dull pain/ache in center of chest

Angina/ coronary pain, but medical investigations prove negative

Profound/ frequent fainting spells

Muscles

Weakness/fatigue

Exercise has to stop due to sudden unreasonable exhaustion

Sudden loss of strength

Hard exercise improves symptoms

Muscles feel stiff or ‘in spasm’

Muscles ache (feeling ‘beaten up’ or as if ‘been in a fight’)

Tense jaw muscles (may cause headache)

Muscle tremors

Muscle twitching

Tightness around eyes/mouth

Throat

Globus (sensation of pressure or lump in throat or at root of neck)

Sensation of restricted throat

Difficulty swallowing

Gastrointestinal System

Excessive belching, swallowing air

Discomfort/tension/sinking feeling/distress just below tip of breast-bone

Distended stomach

During attacks of other symptoms: urgent/uncontrolled bowel movement

Urinary Tract

Frequent need to pass urine

Discomfort at neck of bladder

Severe urge to pass urine/incontinence, when accompanied by any of the other symptoms in this table

Reproductive System

Orgasm during cult activities ('unusual' sexual practices)

Premature ejaculation

Sex provoking prolonged exhaustion

Sex improving all symptoms for a few hours

Interpretation

Less than 15: Unlikely to be overbreathing; 15-20: Symptoms may be caused by hyperventilation

Tests

There are no laboratory tests to detect hyperventilation, though patients subject to it may have chronically low serum phosphorus and this is well worth checking. The only real way to diagnose it for certain is for the patient deliberately to overbreathe by way of a test.

This should be done with the patient lying down and preferably accompanied by someone who understands his or her condition. The overbreathing needs to be kept up for several minutes; the patient should be quite tired as a result. If the familiar group of symptoms appear, the diagnosis is obvious.

Treatment

Drug treatment is quite inappropriate.

The real answer lies in learning to breathe correctly. Help from an expert physiotherapist is invaluable but beware: many physiotherapists make the problem worse by teaching the patient how to breathe deeply and efficiently, which is fine for someone with asthma but the exact opposite of that is wanted here.

During severe panic attacks the old trick of breathing into a paper bag is as valid as ever. Or, if the patient can be reasoned with, get him or her to breathe out, count for six long seconds then breathe in slowly, out again, hold for six more seconds, and so on. It should be possible to slow the respiration down to about ten breaths per minute or less.

5 – 6 breaths a minute is considered to be optimum in this context. I can teach you how to breathe only 4 per minute, as an exercise or training, not as a long-term breathing habit (see below).

Take Control!

Whether you have a real problem, or just want to develop healthier breathing habits, you can practice slowing your breath down. It is quite easy to practice just four breaths per minute, if you do it right.

The secret is to learn to experience the difference between chest breathing (using the ribs) and so-called abdominal breathing, though it is actually brought about by the diaphragm.

So, before you start counting and measuring the seconds, lie on the bed or sprawl on the sofa. Relax. Breath slowly. Now, do this:

1. Let your breath come into your chest. Don't inhale. Your breath will just start to come in. In fact you won't be able to stop it (3 – 4 seconds).

2. When it stops, then switch to a further intake of breath, by pushing out your stomach. Bring it in fairly slowly (a further 3 – 4 seconds). You can get a LOT more air in, sure you can. Fill right up and… hold it! (2 – 3 seconds)

3. When you can't maintain it any longer, breath out VERY SLOWLY (about 7 seconds more).

4. Now do the same thing again. Keep careful control; don't snatch at your breath.

Practice until you can do it easily: chest breath (ribs), followed by pushing out the belly, drawing in a lot more air (abdominal breath); pause for 2-3 seconds; then exhale slowly over several more seconds.

Now, if you look at the second hand on your watch, you'll be able to see you are taking at least 15 seconds for this new style of breathing. That's down to a rate of four-a-minute, or less. You can do it!

After about 20 breaths you will realize that you are getting plenty of air at four-a-minute and you do not feel "out of breath". If you don't want to take my word for it, get yourself an inexpensive oximeter—a little device that clips onto a finger tip—and monitor it. You'll see that, no matter how slowly you breathe, your oxygen level won't drop below 97 – 98%!

If you do this simple exercize for 10 minutes a day, most or every day, you will find it becomes natural and easy. Gradually, you will slow your frantic 12 – 16 breaths a minute down to a quarter of that.

QUICK TIP: If it helps, while you are practicing this, rest a book on your abdomen and deliberately push it up high when you take in the abdominal part of the inhale breath.

The Buteyko Method

This reminds me of the Buteyko method, named for Russian Dr. Konstantin Buteyko, which is excellent for correcting hyperventilation. It was originally developed as a treatment for asthma and other obstructive airways disease.

The patient AND DOCTOR get this wrong and believe the way to compensate for a tight chest or wheezing attack is to force deep breathing. It doesn't work. In fact the depletion in carbon dioxide levels and the resulting plasma acidity makes things worse.

Buteyko found that the correct thing to do is *the exact opposite*: to reduce breath intake, to take smaller and more frequent inhalations and exhalations.

It takes practice to restore a normal breathing pattern but proponents point to the many benefits of the Buteyko method, which far exceed merely helping asthma cases.

Chronic hyperventilation is less visible but major indicator of chronic stress. It has a long-term effect on general health, because less oxygen is delivered to your tissues (Bohr effect). This can cause pain, inflammation, or other malfunction throughout the body. For example, less oxygen reaching your brain can cause you to make mistakes, or to have headaches, confusion, panic, or difficulty remembering things. When the body is threatened by the lack of oxygen, stress levels rise, further increasing the heart rate, sweating and other normal responses to stress. This creates a vicious circle.

Test Your Control Pause

Buteyko practitioners estimate the degree of chronic hyperventilation by what is called the control pause (CP).

Here's how to do the test:

Sit down and adopt a reasonably straight posture;

Take a small breath in and let a small breath out (the breath should not be noticeable);

Hold your nose on the exhalation. Your lungs should be mostly empty but not completely devoid of air. Holding your nose is necessary to prevent air entering into the airways;

Count how many seconds you can comfortably hold your breath before you need to take a breath in. *Please note that this is not a test of how long you can hold your breath using willpower, but simply until you feel the first physical urges to breathe.*

Release your nose and breathe in through it;

Continue to breathe normally through your nose. Your first intake of breath after the Control Pause should be no greater than your breath prior to taking measurement. If you need to take a much bigger breath after measuring the Control Pause, that fact alone is a sign that you have held your breath for too long.

The level of carbon dioxide in the body determines the length of time the breath can be held; a higher level of carbon dioxide corresponds to a longer breath hold. Increasing levels of carbon dioxide in the blood helps to reduce the symptoms of over-breathing and lower breathing volume to a normal level.

The closer your CP is to 40 seconds, the better the match between breathing volume and metabolic requirements, and the greater the oxygenation of the body. In hyperventilation cases, the CP is low (less than 20 seconds). It is common for people in the Western world to have a Control Pause of between 5 and 15 seconds, indicating a prevalence of habitual over-breathing.

By practising the Buteyko Method using books, DVDs, or with the tutelage of a Buteyko practitioner, you should be able to increase your CP until you have reduced or completely eradicated the symptoms associated with chronic hyperventilation. That means much lower stress levels!

Something Pure To Breathe!

It doesn't make sense to train your lungs to do their best and then breathe poor quality air.

This is an issue: air pollution in the average home is as much as 100 times higher than levels allowed by the EPA in the workplace!

While none of us have much expectation that society and industry will suddenly stop polluting our atmosphere, it makes sense to at least clean up your personal environment. Effectively that means creating clean, breathable air in the home and/or in your office local environment.

There is nothing to be done about urban pollution, or summer allergens, apart from keeping your doors and windows closed. But there are a number of air purification devices on the market which may help reduce your exposure to dirty air.

In fact if you lowered you target to just one room—the bedroom, where we spend approximately 1/3rd of our lives—and got really clean, healthy air around you while you sleep, that would represent a massive boost in your overall health.

Every little helps! So do as much as you can.

Some people will find the equipment below very useful, enabling restful nights and symptom-free days, perhaps for the first time; others will benefit only a little and find trying to tackle inhalant particles and gases not worth the trouble. People vary and there are no hard-and-fast rules. A little experimentation is recommended.

What About Face Masks

There are situations where a multiple sensitive person may want to wear a protective mask, for example when cleaning in a dusty enclosed space. However it is not a good idea to get into the habit of using artificial aids on a semi-permanent basis. Often this means little more than psychological dependence that may not have any relation to scientific removal of impurities. Patients who squeal and hold a handkerchief over their face every time someone takes the top off a felt tip pen are inviting ridicule, moreover (my point entirely) there are far better ways of conquering your problem than this.

If you need to use a mask, be aware of the different types and know their limitations:

Lightweight, cotton surgical masks strain out some, particles such as pollen, dust and smoke. People sensitive to wheat and flours who work in the catering industry may need one of these. They are not completely effective against particles and do NOT remove chemical hazards.

For chemical vapors you may need an activated-charcoal filter mask. There are many simple versions of this design which, in its full form, is the gas-mask worn by troops in combat. Suppliers claim these are effective against benzene, ozone, diesel fumes, lead salts, hydrocarbons, nitrous oxide and sulphur dioxide. Most people would probably benefit from one of these masks when encountering urban smog. A half mask (illustrated) could be the best choice, but not if you have sensitive eyes that react and stream tears.

Air Filters

If you can't face the expense of major household filtered air purification, consider a small, mobile system. Standards are variable and if possible you should try out a model before buying. Beware of buying a unit that seems inexpensive but is inadequate to the task; check volume air turnover and compare this to the size of the room you are trying to maintain pure. Aim for at least four changes of air per hour. This rating is called the "clean air delivery rate" or CADR.

The best units combine chemical purification (activated carbon) with particulate removal of varying standards (see next 3 sections). Avoid units with the deplorable addition of scents and 'air freshener' perfumes; this adds chemical pollution.

There are portable models for the car that plug into the car's cigarette lighter socket. Used properly these may assure that you arrive in a refreshed state after a long drive, instead of semi-drugged with traffic fumes!

Activated Carbon Filters

These are fairly effective at absorbing cooking and food smells, cigarette and tobacco odors, perfumes, diesel and petrol fumes, smog, ozone and animal smells. They are less effective against pollen, smoke, mildew, chlorine, fish odors and some noxious gases. Unfortunately, they perform poorly against two hazardous indoor chemicals: carbon monoxide and formaldehyde.

Electrostatic Air Cleaners

A fan draws in particles and these are then given an electric charge that causes them to stick onto a screen or plate. Manufacturers claim they remove 90 per cent of particles. In fact performance falls off very rapidly and within days the unit may be less than 50 per cent effective. This type of purifier also needs constant cleaning and maintenance.

Another problem is that charged particles that 'escape' the screen or plate and stick on walls and furniture. There can be considerable build up, which causes discoloration. This type of filter may also produce ozone, a highly toxic gas that causes headaches in susceptible people.

High Efficiency Particulate Air (HEPA) Filters

These are 99.97 per cent efficient against particles of 0.3 microns (over 95 per cent efficient for particles down to about 0.1 micron in size), according to the US National Bureau of Standards. Predictably they are also quite expensive. They are sometimes called absolute filters and are used to maintain sterile air in hospital operating theatres and burns units.

HEPA filters work particularly well against important sensitizing allergens such as pollens, molds, yeasts, fungi and bacteria. They are also effective against viruses, which means they may help to cut down on colds and other infections.

So-called ultra-HEPA filters, which remove particles down to 0.003 microns, are thus 100 times more efficient at removing particles. That means they efficiently remove smoke particles and viruses too (most viruses are 0.1 microns or larger).

But don't forget, as with all devices, a filter can only clean up the air which passes through it. That's why the CADR is important: if you are not changing the air in the room at least 5 – 6 times an hour, you are not being fully protected.

The Dyson Pure Cool Fan is a good option. The Desk Air Purifier is compact and convenient and not too expensive ($300 - $400 range). At just 25 inches tall, it fits neatly into small spaces like laundry rooms and home offices where a stand-up fan might be cumbersome.

Inside the fan itself is a Dyson HEPA filter, complete with a layer of activated carbon granules that capture chemicals and odors.

I prefer the AirDoctor ™, which has additional sophisticated controls. It has a whisper-quiet powerful motor, providing a satisfactory CADR of 300 plus; enough to clean the air in a 450 square foot room—equivalent to a large bedroom—6 times per hour.

Buy the AirDoctor here: https://drkeithsown.com/air-doctor

The Molekule PECO Device

This is the new kid on the block (newest and slickest marketing does not always mean the very best of its kind, nor does it necessarily mean it's much different).

This is one of the most expensive air purifiers on the mass market, at $799,

but for serious allergy-sufferers, it may be worth the extra investment. Unlike other purifiers, which have HEPA filtration to remove particles, the Molekule is claimed to actually destroy indoor pollutants, using a patented process: Photo Electrochemical Oxidation (PECO).

Their website does not explain this in any meaningful scientific terms. And beware: some reviewers report a smell suspiciously like ozone, which is not good.

Despite the sales blather, the Molekule does use a dual-filtration system: first, the Pre-Filter catches larger pollutants like dander and pollen; then, the Nano-Filter cleans the air, claiming to eliminate airborne pollutants that are 1,000 times smaller than those the average air purifier can destroy.

The Molekule comes with a smartphone app. But numerous disgruntled reviewers point to the fact that this simple add-on doesn't work properly and has caused a great deal of frustration. Frustration means stress; so maybe the Molekule isn't so good for your health after all!