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How I propose this book to work:

This is a lifestyle book, and it is laid out to be read s-l-o-w-l-y. Maybe a couple pages per week?

I introduce different lifestyle behaviors, give you some opportunities to play around with them and what actually works for you. Each of us has different needs — nutritionally, emotionally, spiritually, physically, etc. Even though for example, we know vegetables are good for us . . . each of us need different amounts of different vegetables depending on the climate we live in, our body type (and how well we digest), and our gut bacteria . . . for our best health (our bodies tell us which ones we need the most through taste, cravings, etc.), and many of us don't know how to prepare them so they are good . . .

So, each chapter or section gives you different options and lots of information on how and why to incorporate these into your life.

For best results, experiment what is going to work best for YOU. Individual you. What works best for me might not be best for you, however we have a framework of health and some ideas . . . within that framework if we can find what suits us it is much easier to make the lifestyle change.

Don't be afraid to tweak things a bit — go ahead and play with the ideas, see what you can make work for you. You need to enjoy each change, each step along the way — make it fit you and your life, your responsibilities, pleasures, etc.

Take your time reading this book, make notes, experiment and enjoy the journey,

Where to start? Let's just dive in.

Breathe

Breathing. We do it approx. 26,000 times each day. There are many ways to do it -- because if we can't . . . Learn how to breathe as if your life depends on it.

When deep breathing is done you feel freshness, energetic, and lightness in both body and mind.

Breathing deeply is important -- this is why in my classes I stress the importance of breathing deep enough that your rib cage moves -- breathing deep enough that you fill your entire thoracic cavity (ribs and chest) with air and you feel rib cage expansion on the inhale; this will access the rich blood in the lower lobes of the lungs where we can absorb more oxygen and exhale more carbon dioxide.

- Think of a 3D expansion of your rib cage as you inhale — expanding top to bottom, side to side, and front to back. When you fill your entire thoracic cavity you will expand both your rib cage area and your chest.
- It is ok when breathing deep to expand your chest too — as long as you are expanding your rib cage as well. Some people have heard that "chest breathing" is bad — this is referring to shallow breathing where ONLY your chest moves and not your rib cage. I would re-word this statement from chest breathing to shallow breathing. It is shallow breathing that is not as beneficial, not necessarily chest breathing.

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Breathing deeply through your nose is important because the lungs are gravity fed:

- The lungs are mostly gravity fed (although other individual factors may play a role with blood distribution in the lungs). This means the blood pools in the lower lobes of the lungs — so most of the blood holding the CO2 to remove from our lungs sits in the base of the lower lobes — this blood is also the most oxygen rich. (2)
- And furthermore Nasal Breathing (vs. mouth breathing) turbinates the air we breathe spiraling it down deeper into the lower lobes of our lungs perhaps also helping us to access this rich blood in our lower lobes.

Studies have shown that there is a significant increase in CO2 released during nose breathing compared to mouth breathing. (3) Of course more studies to prove this would be nice to see.
These findings suggest that by breathing through the nose, both at rest and during exercise, more CO2 would be expelled (exhaled), and the removal of fat in the form of broken down triglycerides would be significantly increased. (3)

Removal of fat exhaled? A fun little fact here! Many of us are happy to exhale a little fat off our bodies — really we can?

Guess what the primary organ of fat removal is???? Are you ready for this . . . our **LUNGS**!

- A new study published in the *British Medical Journal* determined that the primary organ of fat removal in the body is the lungs. (1) In fact, according to the study, when 10kg of fat in the form of triglycerides is lost, 8.4kg of that fat is exhaled through the lungs.

Triglycerides are the fats stored on our body and carried in our blood. Triglycerides are made of carbon, hydrogen, and oxygen. When we burn fat the hydrogen and oxygen combine and form water (which we excrete through sweat, urine, and feces) and the remaining carbon is breathed out of the lungs as CO2 . .

- The carbon from the broken down fat is exchanged in tiny sacs in the lung tissue called *aveoli*, and breathed out of the body as CO2.

And interestingly over 80% of the fat is metabolized down to carbon dioxide and less the 20% is broken down to water . . .

This means over 80% of the fat we metabolize is excreted through our lungs!
This could also be why the ancient yogic texts say pranayama makes you light . . .

We all know that deep breathing includes deep exhalations which removes the carbon dioxide which is in turn is removing the unnecessary fat and toxins from our bodies . . . Remember toxins are stored in fat cells, as you metabolize the fat toxins are burnt off as well.

- A note for the yogis: This is why I like the strong breathing in uth-pluthi at the end of our practice, not only are we burning off the toxins that the liver and kidneys could not get rid of — we are burning the fat that housed the toxins :)

When I was doing research on pranayama (breathing exercises) one of the benefits I came across is that deep breathing by combustion burns off the hardest to remove toxins from our body (which the liver and kidneys are challenged to remove).

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It would seem by breathing deeply and expanding our thorax as the ancient yogis taught us, we we would access the blood rich lung tissue in the base of the lungs and release CO2 more efficiently during exhalation. I would recommend this style of breathing as your pattern for breathing all day long . . .NOT just on your yoga mat.

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A bit on body weight
In our society we do have body weight issues, obviously. The issue is not lack of control which many obese individuals are sadly misinformed . . . your weight reflects your lifestyle choices — in fact diet and lifestyle play just as much a role in your weight . . . the more sugar and carbs you eat the more triglycerides your body will make forcing the body to store far more triglycerides than we can breathe out in a 24 hour period!

As you come into your natural lifestyle, your weight will reset slowly -- albeit more slowly than you wish it is most successful this way. We do not diet or try to lose weight, we live a healthy lifestyle and the body naturally adjusts; so in the mean time here are a few tips to help you in this area while you learn the lifestyle:

- Don't sit too long - every 15 minutes of uninterrupted sitting get up and move! Intermittent exercise all day long along with a reasonable (in time and intensity) exercise or yoga program seem to be the most effective
    - In fact if you do need to sit . . . sit on the floor instead of a chair . . . or when you do need to sit in a chair don't sit like a lady . . . Fidget! Fidgeting helps keep your metabolism up and your blood pumping through your veins. Most of the issue with sitting is that your body has a hard time effectively moving blood, lymph, neurons, hormones -- and just functioning against gravity. Our body needs to function to be healthy, movement helps our body function.
- You are what you eat . . . eats too . . . Be mindful of what you put into your body. I have much research coming in this book and on my website. (**www.befityoga.com**)
    - get rid of processed foods, eliminate sugars, be careful with carbs and grains until we understand better what is really healthy for our bodies.
    - focus on fresh vegetables, herbs, nuts and seeds, grass fed fats (and if you are not vegetarian grass fed meats), and eating more fat and cholesterol in general!
- Periods of intermittent fasting will help your body burn more fat as fuel instead of blood sugars.
- Get rid of toxins in your environment — toxins in our environment interfere with many of the processes in the body and in many cases confuse our immune system leading to obesity, auto-immune diseases, cancers, etc. Some of the first places to look for toxins? Cosmetics, toothpaste, hairspray, shampoo, conditioner, lotions, pills, household cleaning supplies, furniture (especially new furniture that off gases), receipts, — the list is extensive.l

Getting back to breathing, **cellular health is your best preventative medicine.**

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Deep breathing stimulates cellular breathing -- taking in O2 and giving off CO2 in every cell of our body. This improves the health of each cell in our body. Disease starts when a cell is not healthy -- and as more and more cells become unhealthy disease takes a stronger hold on our body. Keeping your cells healthy is the root of disease prevention. Deep breathing is one of the easiest ways to improve cellular health.

A typical office worker, sitting 8 hours per day in a building with fake air does not activate cellular breathing. Further complicated by this person then sitting in their car with their windows up, going home to their homes that are sealed "efficient" and enclosed from the fresh air -- leaves the body deprived of oxygen and vitality. Deep breathing especially when we have access to fresh outside air gives our body vitality.

How you breathe is important. Deep breathing increases absorption and improves distribution of oxygen in our systems.

Learning a yogic style of breathing as a way of breathing all day long; on a scientific level, helps our body better "digest" the air we breathe. Many of us do not pay much attention to our breath, resulting in shallow breathing. Shallow breathing does not oxygenate our tissues enough -- depriving us of oxygen and leaving us feeling drained of energy. Shallow and erratic breathing also disrupt the mind.

Filling your body with O2 and getting more O2 to your cells and tissues is preventative medicine at a CELLULAR level. Preventing disease before it sets in to our tissues.

Cellular Health depends up 2 processes -- getting nutrients into a cell and toxins out.

- Oxygen plays a vital role in every metabolic process in our body. **Health depends on how efficiently nutrients can be absorbed and utilized at a cellular level**. Oxygen is what breaks down food in the cell turning sugar into energy, remember the Krebs cycle? I love how we are one with the universe :) **Photosynthesis and Respiration are the same in reverse . . . Photosynthesis is a plant turning the Sun's energy into Sugar, Respiration is the process of turning that sugar back into energy :)**

- Healthy cells are aerobic -- meaning they have adequate levels of O2. When cells are deprived of O2 decay sets in and cells can mutate or die.

    - **The primary cause of cancer is directly related to cells deprived of O2. Cancer cells are anaerobic and thrive in an oxygen-deficient environment.**

And the other side of breathing - the release of Carbon Dioxide (C02). Health is also dependent on how effectively toxins and waste can be removed from the body.

Cellular waste is removed from the body in several ways:

- Most toxins are dissolved in water or fat and transported to the kidneys or to the liver and colon where it can be excreted in our urine or bowels.

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- **Some of the most toxic poisons in the body can only be "burnt up" and neutralized through oxidation — deep breathing — exhaling the carbon/fat/toxins from our lungs as explained.** Have a good breathing session and "POOF" toxins gone ;)

Breathe deep and Oxygenate your cells while you burn up toxins

Breathing Deep and your Nervous System:

Our breath rate can be automatic or controlled. It's not quite as easy at our will to give orders to our liver, spleen or stomach, but it is easier to control our breathing. When our breath is left to subconscious control it is easily influenced by our thoughts and emotions and what is happening around us; this commonly sets off a chain reaction of stress responses in the body that are not favorable for regeneration -- Under the stress response our breath gets erratic and our heart rate increases, the body slows or stops digestion, and diverts blood flow and body energy from our organs to our muscles stimulating the fight or flight response so we can run, move, jump out on the way -- think quickly.

Diverting blood flow from our organs leaves them not able to operate fully, while this may be ok for short periods of time (for example, dodging a car that almost hit you), remaining in this state for long periods of time (stressing out all day at work . . .) leaves your organs not fully functioning and our body more susceptible to disease. Our body is constantly regenerating, stop this process too long and aging sets in ... Stress stops this process.

By consciously controlling our breath and keeping it deep we set off a chain reaction which calms our heart and slows our pulses, relaxes our minds, helps the organs of the body operate efficiently digesting food and using nutrients, getting rid of toxins, and rebuilding tissues.

Yogic breathing techniques improve our breathing and breath awareness 24 hours per day, improving our health. Breathe deeply not just when practicing yoga, but all day long, establishing regular breathing patterns as habit.

A word on our mental states, what we think becomes our reality. Anti-depressants are making us crazy and violent ... Many of us awake to the stark reality that life is not always a cake walk… Learning acceptance and how to roll with our lessons in life is easier under the influence of deep breathing. Deep breathing calms our mind and gives us a better outlook on life. It induces the meditative state where ease of life, and happiness comes easier.

Mental activity correlates with our breathing pattern, more thoughts = more breaths and erratic breaths. **By reducing the number of breaths we take in a given period it makes concentration and meditation easier.**

Deep breathing:

- Gets more oxygen to our cells
- Increases lung capacity making it easier to breathe deeper
- Removes toxins, the deeper breath allows more time for CO2 to be expelled

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- Induces a meditative state, keeping us happier
- Increases our Life Span? Some people have laughed at this fact . . but the yogis give it merit:
    - The sages observed animals and noticed that animals with a slow breath rate such as elephants, tortoises, and pythons have a longer life span than animals with shallow breaths such as rabbits, birds, and dogs. From this observation they realized the importance of slow breathing for increasing our life span. Our respiration and heart are directly related, a slow breathing rate keeps our heart beat slower and stronger, our heart beats more efficiently all day long moving blood in the body with stronger pumps but less of them . . . promoting longevity.

Ideal breath rate for our normal day is about 6 breaths per minute -- this is a 5 second inhale and 5 second exhale. Not difficult to do .... but will require some attention until it becomes habit. This breath rate gives more time for each cell in our body to expel CO2 and take in O2.

- Reciting mantra or prayers also slows down breath rate to about 6 breaths per minute! I love how many old time practices are rooted in creating better health.

Nasal breathing is important also.

Nose Breathing is an important part of our health! Let's look at some research on the benefits of nose breathing and why you want to breathe through your nose.

Nasal Breathing . . . Next time you go to the store, or just out and about, look around. Pay attention to people, notice who is breathing through their nose and who is breathing through their mouth . . . I don't want to offend anyone so will keep my observations to myself, take notice what you observe . . .

Nasal breathing pulls more O2 across the brain, among many other benefits . . . Each nostril functions independently and synergistically in filtering, warming, moisturizing, dehumidifying, and smelling the air.

Nose breathing imposes approximately 50% more resistance to the air stream in normal individuals than does mouth breathing, resulting in 10-20% more O2 uptake. (Cottle, 1972:Rohrer, 1915) There must be adequate nasal resistance to maintain adequate elasticity of the lungs. (Cottle 1980).

What this study is saying is **breathing through your nose improves oxygen uptake — it requires a slower exhale than breathing through your mouth which allows more time for O2 extraction and CO2 expulsion in our lungs, also exhaling especially through your nose puts a back pressure on the O2 in the lungs helping to drive the O2 deeper into the tissues** (our lungs extract O2 from the air on our exhale)**.**

Maintaining a keen sense of smell is also very important for enjoying life, and for safety and social acceptance. Think of all the beautiful smells we enjoy with our nose. Smell influences our behavior, our memories, and many autonomic nervous system functions which are below the level of conscious awareness. This is because the receptors in the nose, known as olfactory bulbs, are direct extensions of a part of the brain known as the hypothalamus. The hypothalamus, also known as the Brain's brain, is

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responsible for many functions in our bodies, particularly those that we consider automatic: heartbeat, blood pressure, thirst, appetite, and of course, the cycles of sleeping and waking. The hypothalamus is also responsible for generating chemicals that influence memory and emotion. Breathing through your nose regulates and balances the functions of the hypothalamus.

Realize . . . breathing through your nose instead of your mouth positively effects your heart rate, blood pressure, thirst, appetite, and mood . . . And that's not all here are some more facts on why you want to train yourself for nasal breathing.

Inhaling and exhaling through your nostrils instead of your mouth:

- Filters and humidifies the air you breathe.
    - Your nose is the only organ able to properly prepare the air you breathe; mouth breathing leads to over-breathing, chronic hyperventilation, depleted carbon dioxide levels, reduced blood circulation, and narrowing of the airways.
- Breathing through your nose turbinates the air you breathe taking it down deeper into lungs -- the capillaries in the lower lobes of the lungs have more O2 in them so you get more O2 in your blood with each breath.
    - The lungs are a primary source of our energy level. They extract oxygen from the air we breathe primarily on the exhale. Because the nostrils are smaller then the mouth, air exhaled through the nose creates back pressure when one exhales. It slows the air escape so the lungs have more time to extract oxygen from them and that back pressure helps to drive the O2 into our cells. When there is proper oxygen-carbon dioxide exchange, the blood will maintain a balanced pH. If carbon dioxide is lost too quickly, as in mouth breathing, oxygen absorption is decreased.
- The receptors for the Parasympathetic Nervous Systems are in the lower lungs, nasal breathing stimulates this part of your nervous system which is another reason why **deep breathing slows down your heart rate and reduces blood pressure**.
    - Breathing through your mouth keeps your breath shallow, in the upper lobes of the lungs, where the receptors to the sympathetic nervous system are located. Shallow breathing stimulates this part of your nervous system preparing you to fight or flight; releasing cortisol and adrenaline into your blood stream. If we run or fight and use up these hormones -- no damage done. If we do not these hormones marinate in our blood stream continually stimulating the stress response.
- Nose breathing during exercise reported 50% less fight or flight stress and 50% more calm parasympathetic nervous system activation when compared to mouth breathing.
    - Nose breathing exercise **increased alpha brain wave activity** compared to mouth breathing exercise. Alpha brain waves are produced during relaxation or meditative states. Mouth breathing exercise produces a significant amount of beta brain waves that are associated with a stress response.

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- Nose breathing exercise **increased brain wave coherence** compared to mouth breathing exercise. Brain wave coherence is associated with calm and organized brain function.
- Nose breathing exercise was perceived as **less exertion (it was easier)** as compared to mouth breathing exercise, according to the Borg Scale of Perceived Exertion. (1)
- Nose breathing exercise demonstrated **shorter recovery times and better endurance** than mouth breathing exercise.

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While I am a fan of all exercise, yoga teaching us how to breathe through our nose while exercising seems to offer superior results over western minded exercises.

Mouth breathing and resultant over-breathing elevates your blood pressure and heart rate, worsens asthma, allergies, rhinitis, sleep apnea, and deprives your heart, brain and other organs of optimal oxygenation.

How did sleep get into the mix? Nasal Breathing while sleeping is also important!

- What you do during waking hours carries over into sleep. Any opportunity for mouth breathing inhaling or exhaling will increase the chances of mouth breathing during sleep. Hospital studies have established that nocturnal mouth breathing is a primary cause of loud snoring. Snoring is a precursor to sleep apnea and apnea a precursor to heart attacks and dying in one's sleep.

- Each nostril is innervated by five cranial nerves from a different side of the brain. Afferent stimuli from the nerves that regulate breathing are in the nasal passages. The inhaled air passing through the nasal mucosa carries the stimuli to the reflex nerves that control breathing. Mouth breathing bypasses the nasal mucosa and makes regular breathing difficult.

And more reasons to breathe through your nose:

Nasal Breathing & Nitric Oxide (NO) (and some of the latest research):

NITRIC OXIDE (NO) : NO is an important cellular signaling molecule involved in many physiological and pathological processes. It is best known as a powerful vasodilator -- meaning it relaxes your blood vessels improving blood flow.

- **Why Care About Nitric Oxide?** Nitric oxide is such an important compound that it was dubbed "Molecule of the Year" by *Science* magazine in 1992, followed by the 1998 Nobel Prize in Medicine for its discovery as a signaling molecule in the cardiovascular system.

- Nitric Oxide also functions as a signaling molecule for your brain and immune system.

Your sinuses produce Nitric Oxide during nasal breathing, breath retention, and humming. One of the reasons yogis chant "ommmmm;" the buzzing om in your face (or singing or humming) is shaking nitric oxide into your bloodstream. Similar to, but NOT laughing gas, nitric oxide is remarkable. It's a relaxant

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that causes blood vessels to dilate, improving the absorption and release of gases in the lungs. It regulates the production of hair and erections (due to blood flow improvements) . . .

Lightning produces nitric oxide, and so do your sinuses.

- Nitric oxide is important in regulating blood pressure. (Remember it's a "vasodilater" meaning it relaxes your blood vessels so they dilate easier.)
    - By helping to regulate your blood pressure, nitric oxide enhances blood flow. Nitric oxide signals the smooth muscle cells in your blood vessels to relax so that your vessels dilate and your blood flows more freely. When you have inadequate nitric oxide, your risk for coronary artery disease increases.
    - nitric oxide production in important is protecting organs such as the liver from ischemic damage.
- If your blood is flowing freely, then nearly every physiological process will function better. If your blood is sluggish, then blood carrying important nutrients can't reach the areas that need them. NO improves blood flow.
    - Nitric oxide from the sinuses helps to explain why we feel so good after deep breathing through a yoga session, and why breathing exercises are so refreshing. It may even explain why it is so invigorating to breathe through the nose during aerobic exercise. These activities all stimulate the production of nitric oxide in the nasal passages. **From there, Nitric Oxide travels down our windpipe, clearing out bad bacteria and opening blood vessels as it travels down to the lungs and back again**.
- Nasal breathing is just one way to get your NO; other ways to increase your NO:
    - Sunshine :) helps our skin produce NO for use in our lungs. Researchers found that sunlight triggers your skin's production of nitric oxide. Your skin contains large stores of nitrite and nitrate, but only the nitrite is biologically active. Sunlight appears to prompt conversion of nitrate to nitrite and nitric oxide (NO).
    - Calcium, magnesium, and Vitamins C & E rich foods
    - Olive extract
    - Bitter melon
    - Electrical acupuncture
    - Taking a warm bath

Just a thought on nasal breathing to leave you with: Mouth breathing can produce an anterior open bite, a longer face, and some suggest that because of poor sleep quality produces a baggy appearance under the eyes. Mouth breathing also accelerates water loss increasing possible dehydration.

I was watching the new Star Trek movie a few years ago (2009); there was a line in it that made me laugh. James Kirk was hiding under a bed, the woman Lt. Nyota Uura walks in to talk with her friend,

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right away she says “who’s that”? Her friend replies, who’s who? She states “The mouth breather hiding under your bed?”

Clearly this term is not used in a complimentary tone here . . .

Now that you are breathing through your nose:

TAKE IN THE AIR

When you are outside or practicing yoga or meditation and breathing, how you breathe can increase your oxygen absorption. Animals do this very well, have you ever noticed a rabbit breathing? Animals nostrils are very mobile and flexible and expand with each inhale — and so are the nostrils of humans that still live in nature such as tribes in Africa.

When we normally breathe our nostrils barely move — and sometimes they even pinch shut a little as the suction from inhaling tends to draw them inward.

So instead try to TAKE THE AIR, expand or slightly flare your nostrils as you inhale — notice how the air enters more easily, in greater volume, and in better balance between both nostrils.

Opening the nostrils during inhalation directs more of the air toward the area in our nose with the most sensitive nerve endings. The air current that enters our nose is divided into three streams — 2 of the directions are in and down, the third direction brings the air across our olfactory region at the top of our nasal cavity. This olfactory region — where our sense of smell is — is also the region of our nose that absorbs the negative ions from the air we breathe (which is what gives us vitality). As you breathe through your nose you want to feel most of the air go in and down the two currents that direct the air into your lungs, and a small amount go into the stream to the olfactory region. Putting too much of your air into the olfactory region will create a “sniff”. Sniffing gets you less oxygen as it uses your chest muscles more than your diaphragm — and this is every inefficient way of getting oxygen.

A purposely slowed breath, or when smelling something, or a purposefully rapid increase in the breath rate as we do for uth pluthi (a pumping breath done at the end of an ashtanga practice), or in the pranayama practices of bhastrika or kapalabhati all increase the flow of air to the olfactory region giving us the opportunity to absorb more prana. **P***rana* is a yogic word for processes happening throughout your body, often explained as the movement of energy. Energy moving through your body is blood flowing through your arteries and veins, neurons traveling in your nerves delivering their messages, lymphatic fluid moving through our lymph vessels and nodes clearing out pathogenic bacteria, hormones secreting, your heart beating, and your eyes shining.

Prana is akin to Negative ions . . . or we could say . . . Negative ions in the atmosphere are akin to Prana. An ion is an atom or molecule with a charge — we have positive ions and negative ions. Negative ions are very small and active mobile ions -- in the atmosphere they work to keep our air clean. In our body negative ions take part in all vital functions and are the catalysts for oxygenating our blood. Positive ions on the other hand are larger and not as mobile as negative ions and tend to hold on to

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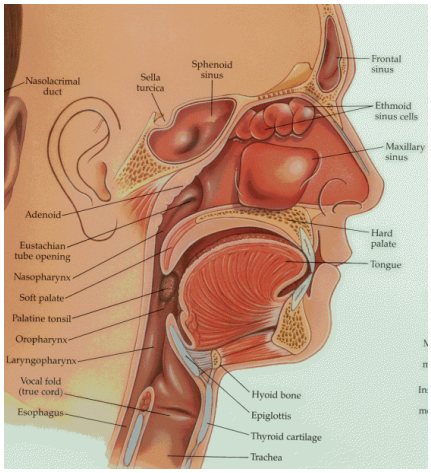
debris from the air. So we want to collect negative ions or prana in our body to help oxygenate our blood for cellular processes.

The olfactory region in our nose is our prana accumulator. Breathing this way directs more prana over the olfactory nerve endings in our nose which take in prana from the atmosphere. (You will understand and learn more about prana and vitality as your work your way through this book.)

By flaring your nostrils slightly as you inhale you pull more air across this region of your nasal passages. You will notice that by taking in the air in this way makes breathing easier, harmonious, and well balanced. **Even if the change is imperceptible to you, it is not too optimistic to say that breathing this way increases the amount of inhaled air by 10%.**

Here is a little breathing exercise to help you establish the habit of nasal breathing.



Sit comfortably in any position, but in good posture. Pelvis level (not rocked forward or back), spine long — ribs far away from your hips, shoulders relaxed, back of your neck long with your chin just slightly tilted downward. Let your muscles hang and relax on the support of your skeleton. Your skeleton supports your posture so your muscles can relax.

Close your lips, part your teeth. Put your tongue on the roof of your mouth making gentle contact with your tongue just behind your front teeth . . . this is known as jiva bandha. Jiva Bandha on a physical level helps to relax the jaw and keep you from clenching your teeth — which helps to align your head and neck in proper posture making breathing easier. It also helps to keep you from salivating as much . . . which is useful in a meditation practice. And when holding jiva bandha it is impossible to breathe through your mouth . . . so making jiva bandha a habit will help with your nasal breathing all day long.

To perform jiva bandha just silently to yourself say the letter “N” and feel where your tongue softly touches your palate. You can also touch your tongue just behind your front teeth and feel a ridge . . . with a bump. Just behind that bump relax the point the just behind the tip of your tongue. Be careful not to push your tongue onto your teeth — this can lead to forward head posture putting stress on your neck and spine and could displace your teeth as well. Your tongue should be slightly back from your teeth creating a light cupping motion toward the roof of your mouth — but keep your tongue relaxed. with your tongue in this position you can feel how relaxed your jaw becomes removing tension and making it easier to smile :)

Now breathe, take a full exhale through your nose, as you inhale flare your nostrils and take in the air.

Exhale slowly and set about a 5 second rhythm to both your inhale and exhale. Feel your rib cage expand with each inhale, pay special attention to feel your back ribs expand with each inhale (this assures you are using your diaphragm to get more oxygen for less effort)

Feel abdomen move with your breath too, you can slightly engage your abdominals as you exhale to assist in the exhale helping to push the carbon dioxide-d air out.

Sit with your breathing like this for anywhere from 2 to 5 minutes. You will be surprised how energizing it is. As you prepare to leave your meditation, take your breathing and jiva bandha with you . . . you can even take it to work with you . . . It is like whistling while you work . . . only its through your nose instead!

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RHYTHM

Lastly lets talk about rhythm and breathing.

Rhythm is a fundamental phenomena of the cosmos. From the rotation of the earth and its orbit, day and night, seasons, and our heart beat . . .

Our heart likes rhythm!
The introduction of rhythm into work regulates it and reduces muscular and intellectual fatigue. This is why we love music :) If we have a good beat going we can work very efficiently.

Rhythmic breathing behaves similarly in our body. When our breath is rhythmic it is very calming to our mind and nervous system, reducing stress. A rhythmic breath is where your inhales and exhales are even -- same length, same depth.

Our breath effects the major systems of our body through the sympathetic nervous system that regulate blood pressure, heart rate, circulation, digestion, among many other bodily functions. These are systems we can not voluntarily control -- except under the influence of our breath. When your breath is rhythmic and smooth it calms the nervous system which in turn regulates these functions in our body keeping us healthier. Breathing exercises can act as a bridge into those functions of the body of which we generally do not have conscious control.

Try it, just sit for a moment and tune into your breathing, smooth it out a little and pay attention to it.

- Now consciously control it and make it rhythmic, first by making your inhales and exhales equal. Find a comfortable cadence, then pay attention to how long your exhale is, try to match your inhale to your exhale.

- Now pay attention to the junction between your inhales and exhales. Make it smooth as the inhale turns over to the exhale. Imagine a pendulum in your mind, at one side of the arc — just where the pendulum reaches its crest and begins its trajectory the other way there is a split second of weightlessness. Feel that in your breath as you switch over from the inhale to the exhale.

- Now pay attention to the other side of the “arc” . . . the junction from the exhale to the inhale. This one is usually a little rougher transition. Many people have a little more of a bumpier transition from the exhale to the inhale. Try to keep that smooth and do not draw out the pause between the breaths too long. Try to keep it about the same length as the pause between the inhale and the exhale.

- Just sit for a few more minutes and imagine a pendulum swinging through an arc with your breath. You may instantly feel energy as your whole body operates more efficiently when you breathe this way.

- Taking it another step further, our best rhythm is to our own heartbeat. As you tune into your breath, see if you can feel your heart beat. If you can (this sometimes takes a few months of practice to sit and feel your heart beating enough to count it . . . if you do have a hard time doing that, you can palpitate your pulse on your wrist or neck and use that for your count — and to help you in feeling your heartbeat. In time you will.) Try to time your breath in rhythm to your heart;

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say 4-6 beats per inhale and 4-6 beats per exhale. Don't try to over-control your breath or make it too slow, this will put stress in your body. Find a rhythm that feel comfortable and go with it.

As many times throughout the day you can remember to smooth our your breath and make it deep and rhythmic the quicker it will become habit. The more often you breathe like this the healthier your body and mind will feel.

Here is a nice rhythmic breathing exercise I like to do each day on my walk to the studio to teach. Try it on yourself for size and see how good you feel afterward.

Breathe in rhythm with nature:

- While walking find a comfortable pace
- Count your heart beat to your pace -- maybe 2, 3, or 4 beats per step
- Now match your breath to your pace -- perhaps 3, 4, 5, or even 6 steps per inhale and per exhale.

The nice thing about your breath? It's very portable -- it can go with you wherever you go!

Finding a breath for you to breathe most of your day.

Breathing as a daily habit:

Bring your breath into your conscious control as many times per day as you can. Slow down your breath, breathe through your nose and smile. Do this while working, driving, cooking, washing dishes, reading, as often as you can remember:

- Breathing through your nose!
- Deeper, slower breathing. About a 5 second inhale and 5 second exhale. Keep a smooth rhythm.
- Flare your nostrils slightly with each inhale
- Touch your tongue to the roof of your mouth (jive bandha).
- Smile as you breath :)

Here is a breathing exercise to help you connect with your breathing. This exercise will help you feel how every cell in your body breathes . . . meaning cellular respiration. We don't realize we can breathe into different areas of our bodies, or even use your mind to direct our breath, but we can.

Something you may commonly hear in a yoga class is to send your breath to a certain area of your body. Over the years many people have told me they have a hard time visualizing this process; but when you realize that every cell in your body "breathes" it may start to make that connection easier. Every cell in your body takes in oxygen and gives of carbon dioxide (intra-cellular breathing) — every cell in your body inhales nourishment and exhales waste to and from its surrounding tissues.

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Take meditation moment and lie down for a few minutes.

Lie down on your back comfortably:

- Observe your natural and spontaneous breathing process
- Develop awareness of the rhythmic flow of your breath
- Feel your breath flowing in and out of your nose
- Notice your breath is cool as it enters your nose and warm as it leaves
- Bring your awareness to the region of your throat. Feel your breath flowing in and out of the back of your throat.
- Bring your awareness to the region of your chest. Feel your breath flowing in the trachea and bronchial tubes.
- Feel your breath flowing into your lungs. Be aware of your lungs expanding and pressing into your rib cage, then relaxing.
- Shift your attention to your rib cage and enjoy the expansion and relaxation of this area.
- Bring your awareness down to your abdomen. Feel your abdomen expand on the inhale and fall in on the exhale.
- Feel the entire breathing process from your nostrils to your abdomen.
- Feel your body absorb prana and energy from the inhaled air.
- Feel your body expel toxins from your body and mind as you exhale.
- Return to this state often.

BREATHE CONSCIOUSLY UNTIL IT BECOMES HABIT.

The Power of your Breath — Breathing into different areas of your body:
Energy follows thought; I have read about tests where they hook up yogis to all kinds of monitors and have them mentally control different functions in their body, using their mind to slow down or affect heart rate, breath rate, blood pressure, and brain activity -- yogis were able to slow down their brain activity to that of the deep dreamless state while still awake and conscious. And I have read of tests done on body builders/weight lifters where they hook up them up to monitors and have them perform an exercise not thinking about the muscle they are using, then again perform the exercise putting their mind into the muscle they are working -- there was increased muscle activity when the mind was involved in the exercise. So its not too ethereal to say that when you are breathing into a certain area of your body you are using your mind to control your body functions. When you use your mind to focus on a certain area of your body you can improve the cellular exchanges in that area thereby speeding up a healing process or just to have the cells work more efficiently.

Don't worry about body breathing to all your cells! that could be a little overwhelming, just choose an area in your body and focus on it. Don't worry about doing it wrong or right! Every cell in your body knows how to breathe whether you think about it or listen to the cells or not ;)

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Yogic breathing is considered “an intermediary between the mind and body (Sovik, 2000) It is also equally worthy to observe that breath awareness was originally developed to the movements being done by the yogi to achieve the joining of the mind, body, and spirit in search for self-awareness, health and spiritual growth.

Here is 5 minute breathing meditation for an area of your body that is tight or painful:

- Lie supine, or however is comfortable for you that you do not need to fidget.
- Settle into your breathing using any of the breathing exercises you have learned thus far
- Now in your mind, send your breath to a specific tight or painful area of your body.
- As you inhale feel that area expand, as if you are breathing space into that area of your body. Feel blood flow go around the sore area and into the muscles and other surrounding tissues as they relax and spread out. Feel the body bring nourishment to the area or what it needs to heal.
- As you exhale feel that area relax and soften inward slightly. Imagine toxins or pain leaving your body from that area with each exhale.
- Stay with these thoughts as long as you can, when your mind starts to spin a story or slip off on what you need to do, slowly bring yourself back.
- As you go on with the rest of your day continue breathing into the sore area and feel it relax and heal.

Self Awareness and Spiritual Growth through Breathing
Your body holds the truth, your mind only speculates . . . other benefits to body breathing:

One of my favorite sayings over the years . . . the issues are in the tissues . . . meaning our body holds our stories for us. All our experiences in our lives all have purpose, its just sometimes our mind labels them as bad, so we block the lesson. When we block the lesson our body has to store it for us until we are ready to accept it. When you focus on breathing into a certain area of your body, you might be tapping into some stored emotions or feelings; which can be very useful. As this story opens up to you again, you get another chance to put it good use and learn whatever lesson you were to learn from it but weren’t previously ready for . . . You know all those little aches and pains we are always dealing with? If we store our emotions too long they manifest into our aches and pains. So by breathing into those areas you just may tap into some undiscovered lesson and in the process have less aches and pains as you mature!

5 Minute Meditation to help you breathe into different areas of your body — sending your breath as a healing balm to tight, painful, or injured areas of your body.
Lie on your back, pillow under your lower legs and in a comfortable position. This is a nice breathing exercise to do in your rest pose after a yoga practice or workout:

- Settle in and align yourself for a lying meditation, so get comfortable on your back; put a pillow under your knees if necessary, roll your shoulders open, lengthen the back of your neck, take a nice deep inhale through your nose and a long sigh through your mouth. Now connect with your deep slow NASAL breathing with jaw relaxed, lips closed, teeth parted.
- Feel your breathing process, stomach rising and falling, air entering and leaving your body, your lungs expanding and contracting . . . When lying supine gravity assists the exhalation requiring minimal effort from supporting muscles to exhale. Although those of us used to yogic breathing may wish to

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resist the exhale to some degree by eccentrically controlling the exhale with the diaphragm—this is really not necessary when relaxing. Allow the exhale to "whoosh" out with gravity and relax!

- Lying supine with your hands on your belly. Inhale, relax and allow your abdomen to protrude (feel your hands move outward/upward), do not push outward with the abdomen; allow the diaphragm to solely inhale. Exhale, relax and allow the belly to fall in. Breathe into your hands and feel them move with the belly breath.
- Now take a body scan, feel any areas in your body that are achy? tight? sore? Bring your attention to the area.
- Try to relax the area, think "create space" in this area. Space will allow for blood flow, toxin removal, and nutrients to get into a cell. Let that area of your body completely relax and "spread out".
- Now tune in to your breathing, make it slow, deep, and relaxed. Spend a moment with your breath.
- Once you have your breath, direct it with your mind. As you inhale send your breath into the tight area of your body. As you relax and exhale, imagine toxins and pain leaving the area — being carried away by your body's systems of eliminating toxins (liver, spleen, lymph, kidneys, colon).
- Each Inhale imagine in your mind your breath flowing to the painful area bringing with it oxygen and nutrients for healing. Send your breath as a healing balm.
- Each Exhale feel pain and tightness leaving your body.

Using the Power of Your Mind

Here is a nice meditation using the power of your mind to take a tour through your body. These are excerpts from Beryl Bender Birch's (my first teacher) book "Power Yoga". It's a nice way to use your mind to help keep the systems and organs of your body healthy and clean and functioning optimally — although the last part always makes me giggle when I read it to a class:

Settle in and align yourself for a lying meditation, so get comfortable on your back; put a pillow under your knees if necessary, roll your shoulders open, lengthen the back of your neck, take a nice deep inhale through your nose and a long sigh through your mouth. Now connect with your deep slow NASAL breathing with jaw relaxed, lips closed, teeth parted.

Are you fairly symmetrical? Check your hip bones, heel bones, shoulders, are your bones spaced evenly? After arranging your superficial structure of your bones and muscles, sink a bit deeper.

Enter your respiratory and circulatory systems. You can start by entering through your nose and traveling along your breath to your lungs. Bump around inside your lungs like a helium balloon. Hop on an oxygen molecule and squeeze through the walls of the lungs and travel to your heart. Imagine the passages into and out of your heart; see them as clear and smooth and free of debris and obstacles. See all the little trap doors swinging easily and functioning without resistance or stress.

From there be pumped out of your heart and sent tumbling into the vast networks of rivers, streams, and creeks that make up your circulatory system. Construct a little boat or raft for yourself and set out down the main artery leading from your heart.
<< excerpt from Bobbi: Although I have been told the pressure in the arteries is so high that this would be more like white water rafting ;) >>
As you travel downstream, notice the condition of the "banks" of the river. Look for debris or litter. If you see any , then imagine a big trash collecting "boat" (a white blood cell) traveling down the river, sucking up the debris and transporting it to the recycling station. Imagine that all the walls of the blood vessels are plaque free -- pink and smooth. The banks of the river and pristine and untrampled. See a beautiful and healthy environment. Notice the branches and tributaries of the main river that go off to the various organs and how well organized the delivery of supplies and removal of waste are along these passageways.

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Sink deeper still -- into the nervous system. The scenery changes. Now you will see great networks of tracks and trails and pathways. Observe how well maintained they are. Polished, shiny stainless steel. No rust. No broken tracks. Check the connections, the intersections and the switching stations of the countless nadis (channels). Look around for static or interference, especially if you have had a stressful day. If you find any impediment that is creating poor reception, do some rewiring and breathe a little prana to that stretch of track.

Settle deeper still -- into the digestive and elimination systems. Now you get to roam around in your stomach and get a look at that last meal, close up. This can be frightening or rewarding. If you have been eating nutrient dense food and lots of vegetables, things should look pretty good, matter that is easy to digest and move along the system. No problems. But lets suppose you had a bagel for breakfast, a cheese sandwich for lunch, and pizza or a hunk of beef for dinner. You'll be lucky if you can make it through from one end of your stomach to the other, and you'll have a hard time squeezing through your intestines. The intestines will be clogged up like the local expressway at rush hour . . . anyway pay attention to your intestines. They can bring you years of joy or misery -- its up to your mouth.

Living in your Parasympathetic Nervous System

A little more science for those who want to hear some science about why deep breathing is so beneficial for us. I have done some research on the science behind breathing. Set aside all the studies and data and it comes down to these two benefits; the increase of oxygen to the cells and removal of carbon dioxide and toxins, and **the calming effect deep breathing has on our nervous system**. Quote from one of the articles: "Yoga participants learn how to deal with distractions and stress without having an emotionally stimulating physiological response."

I found an peer reviewed study by Len Kravitz, PhD. I used to take his workshops in the early 90's when i was studying the body (in the early 90's i was a personal trainer and fitness teacher and was just starting to get into yoga). I learned a lot from his seminars and was happy to see him writing about yoga. I will share some of his findings and the link for the entire article.

Note: He uses the word pranayama to describe the deep breathing that we do in yoga class -- to me pranayama means LACK OF breathing! As it usually includes breath retentions. So I would prefer to use the term deep breathing or yogic breathing instead of pranayama breathing.

Here are some excerpts from his research:

The yoga purpose of breath training is not to over-ride the body's autonomic systems; although there is clear evidence that yogic breathing techniques can effect oxygen consumption and metabolism (Jerath et al., 2006) <<by metabolism he means the exchanges of gases at the celluar level -- the uptake of oxygen and release of carbon dioxide.>>

In fact, much of the aim of yogic breathing appears to shift the autonomic nervous system away from its excitatory dominance (stress response). Yogic breathing has been shown to positively affect immune function, hypertension, asthma, nervous system imbalances, and psychological or stress-related disorders (Jerath et al., 2006). Jerath and colleagues add that investigations regarding stress and psychological improvements support evidence that yogic breathing alters the brain's information processing, making it an intervention that improves a person's psychological profile. <<part of the article states that breathing automatically is controlled by the medulla part of the brain, while conscious breathing is controlled by the cortex part of the brain . . . and then they state "its not fully understood how these controls of respiration are linked" . . .>>

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Slow yogic breathing techniques show the most practical and physiological benefit, yet the underlying mechanism how they work is not fully elucidated in the research (Jerath et al., 2006). However, Jerath and colleagues hypothesize that :

"the voluntary, slow deep breathing functionally resets the autonomic nervous system through stretch-induced inhibitory signals and hyper-polarization (slowing electrical action currents) . . . which synchronizes neural elements in the heart, lungs, limbic system and cortex."

As well, investigations have demonstrated that slow breathing techniques activate the parasympathetic (calming) nervous system, thus slowing certain physiological processes down that may be functioning too fast or conflicting with the homeostasis of the cells (Jerath et al., 2006).

"the science of breathing" by Len Kravitz, PhD and Sarah Novotny (http://www.unm.edu/~lkravitz/Article%20folder/Breathing.html)

What does this mean?
This study is pointing to the fact we want to operate most of our day in our parasympathetic nervous system. This is the calming, rest and digest side of our nervous system. When the "alarm bell" sounds time and time again it puts us in our sympathetic nervous system which is the flight or flight response.

Under this stress response our breath gets erratic and our heart rate increases, the body slows or stops digestion, and diverts blood flow and body energy from our organs to our muscles stimulating the fight or flight response so we can run, move, jump out on the way -- think quickly. Once or twice per day for about 20 seconds! it is fine to stimulate your stress response — it does help you to think quickly, however setting off the stress alarms all day long is problematic for the body. And the problem here is our brain does not realize non-life threatening stress vs. life threatening stress.

I like how Harvard explains how the stress response starts in our brain . . . and as we know the brain is closely linked to the mind . . . and the mind is not very accurate! Remember your mind . .. it lies to you . ..

From Harvard Health (.edu) (http://www.health.harvard.edu/staying-healthy/understanding-the-stress-response)

The stress response begins in the brain. When someone confronts an oncoming car or other danger, the eyes or ears (or both) send the information to the amygdala, an area of the brain that contributes to emotional processing. The amygdala interprets the images and sounds. When it perceives danger, it instantly sends a distress signal to the hypothalamus.

The hypothalamus is a bit like a command center. This area of the brain communicates with the rest of the body through the autonomic nervous system, which controls such involuntary body functions as breathing, blood pressure, heartbeat, and the dilation or constriction of key blood vessels and small airways in the lungs called bronchioles. The autonomic nervous system has two components, the sympathetic nervous system and the parasympathetic nervous system. The sympathetic nervous system functions like a gas pedal in a car. It triggers the fight-or-flight response, providing the body with a burst of energy so that it can respond to perceived dangers. The parasympathetic nervous system acts like a brake. It promotes the "rest and digest" response that calms the body down after the danger has passed.

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After the amygdala sends a distress signal, the hypothalamus activates the sympathetic nervous system by sending signals through the autonomic nerves to the adrenal glands. These glands respond by pumping the hormone epinephrine (also known as adrenaline) into the bloodstream. As epinephrine circulates through the body, it brings on a number of physiological changes. The heart beats faster than normal, pushing blood to the muscles, heart, and other vital organs. Pulse rate and blood pressure go up. The person undergoing these changes also starts to breathe more rapidly. Small airways in the lungs open wide. This way, the lungs can take in as much oxygen as possible with each breath. Extra oxygen is sent to the brain, increasing alertness. Sight, hearing, and other senses become sharper. Meanwhile, epinephrine triggers the release of blood sugar (glucose) and fats from temporary storage sites in the body. These nutrients flood into the bloodstream, supplying energy to all parts of the body.
All of these changes happen so quickly that people aren't aware of them. In fact, the wiring is so efficient that the amygdala and hypothalamus start this cascade even before the brain's visual centers have had a chance to fully process what is happening. That's why people are able to jump out of the path of an oncoming car even before they think about what they are doing.

They go on to state, after the initial surge has slowed — if you stay in the stress response you keep the "gas pedal" pressed down. If the brain continues to keep to perceive something as dangerous it prompts the adrenals to release cortisol thus keeping our bodies revved up and on high alert. This is when marinating in stress hormones can become problematic.

The body can over-react to stressor that are not life-threatening, such as traffic jams, work pressures, family problems, etc.

Over the years we have gained insight to the long term effects stress tolls on our bodies, research suggests that prolonged stress contributes to high blood pressure, promotes the formation of artery-clogging deposits, and causes brain changes that may contribute to anxiety, depression, and addiction.

More preliminary research suggests that chronic stress may also contribute to obesity, both through direct mechanisms (causing people to eat more) or indirectly (decreasing sleep and exercise).

Harvard health.edu goes on to state: *Fortunately, people can learn techniques to counter the stress response.*

Relaxation response. *Dr. Herbert Benson, director emeritus of the Benson-Henry Institute for Mind Body Medicine at Massachusetts General Hospital, has devoted much of his career to learning how people can counter the stress response by using a combination of approaches that elicit the relaxation response. These include deep abdominal breathing, focus on a soothing word (such as peace or calm), visualization of tranquil scenes, repetitive prayer, yoga, and tai chi.*

Deep breathing is one of the best tools you have to activate your PARAsympatheic nervous system — The most healthiest individuals spend most of their day operating in the rest and digest side of their nervous system.

By consciously controlling our breath and keeping it deep we set off a chain reaction which calms our heart and slows our pulses, relaxes our minds, helps the organs of the body operate efficiently digesting food and using nutrients, getting rid of toxins, and rebuilding tissues.

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Optional Breathing: Activating the Diaphragm
The everyday experiences of breathing for most untrained individuals is much more inconsistent than one would assume. Practices in yoga often first teach individuals to observe their own breathing to ultimately familiarize the student with the sensations of respiration. A meaningful aspect in learning breathing techniques is the awareness in the difference in smooth, even breathing to erratic breathing.

Modifications in breathing patterns come naturally to some individuals after one lesson, however, it may take up to six months to replace bad habits, and ultimately change the way one breathes (Sovik, 2000). The general rule, often noted in studies, and particularly observed by Gallego et al. (2001) was that if a voluntary act is repeated, "learning" occurs, and the neurophysiological and cognitive processes underpinning its control may change." **Hence making a daily mediation/breathing time — even if only 10 minutes long can serve to improve your breathing habit all day long.**

Although the diaphragm is one of the primary organs responsible for respiration, it is believed by some yogis to be under functioning in many people (Sovik, 2000). Thus, the breathing exercises in this chapter will help you engage your diaphragm to breathe deeply and efficiently.

Final Thoughts
The research is very clear that breathing exercises can enhance parasympathetic tone (calming you), decrease sympathetic (excitatory) nervous activity (reduce stress), improve respiratory and cardiovascular function, decrease the effects of stress, and improve physical and mental health (Pal, Velkumary, and Madanmohan, 2004).

Health professionals under-utilize this knowledge! To regularly incorporate proper slow breathing exercises with their clients would be a huge factor in helping one overcome disease or stay healthy.

I want to finish all this research with a quote by Pattabhi Jois (the founder of Ashtanga Yoga):
Pattabhi Jois says there are three types of disease; body disease, mind disease, and nervous system disease. Of these three, mind disease is the worst! When the mind is diseased the entire body is diseased! So first you give medicine to your mind — mind medicine is breathing.

spend about a week working just with your breath and on these breathing exercises before moving on.