

THE ART OF BREATHING: YOGIC PHILOSOPHY AND PRACTICES

A SMITHSONIAN ASSOCIATES WEBINAR AUGUST 22, 2024
MORE YOGA AS LIFESTYLE MEDICINE
WITH LINDA LANG

I welcome you to the **Art of Breathing**, an informational and experiential webinar dedicated to the breath and learning how to regulate it, known in Sanskrit as pranayama. It is much like the breath itself, both a physical and metaphysical experience: breathing to live, and living more fully through a deeper awareness of the breath.

This is an invitation to elevate your experience of the most common of all human activities, breathing. An invitation to sit and stand tall, with your heart wide open and head held high, and to breathe fully and deeply with an appreciation of the infinite nature of every single breath. The breath flows as an energy source that sustains our bodies and minds from an infinite source ~ and when we slow down to sense the transcendent nature of this breath, we can transform our sense of who we are, and carry ourselves through life with mastery over our emotions, with a greater sense of health and wholeness, and a deeper connection to the mysteries of Life.

And so it begins, as you sit a little bit taller as you read these words. Perhaps, take this moment to place your hands on your upper chest and touch, sparsha, in Sanskrit, feel your body rise and fall as you breathe slowly and deeply, sensing the miraculous nature of this most natural action. Hold this posture with the sense of awe and wonderment that it deserves, and feel the lightness rise within you, and the possibility of a deeper connection to the world around you as you breathe it in, again and again.

This handout is:

- a course of specific breathing practices to enhance physical, emotional and mental well-being
- an overview of fundamental ideas associated with the physiology of the breath
- a brief guide to the earliest references to breath and breathing in yogic texts, with an extremely modest bibliography, intended to inform and inspire
- a taste of current research

WHAT COMES NEXT IS THE NEXT BREATH
NOT THE NEXT REACTION, NOT THE NEXT DECISION
SIMPLY THE NEXT BREATH

THE ART OF BREATHING: FUNDAMENTAL IDEAS

1. Pranayama, breathing with awareness and control

The breath is our greatest teacher and guide in the pursuit of yoga as lifestyle medicine. Prana, is our life force, the elixir of life. It flows from an infinite source and becomes us. And it does so automatically.

When we learn to master the flow of this energy, we can alter our physiology, eliminate and/or reduce many symptoms of chronic diseases and chronic pain: regulate heart beat (coherence), enhance the production of hormones that promote well-being (homeostasis), invigorate our bodies, clear and calm our minds, reduce fear, anger and symptoms of depression and anxiety. All of this happens as lung capacity increases and respiratory function improves.

Pranayama can also be practiced to heighten awareness to an extreme state, through mood and mind-altering practices that we are not going to explore in this course.

The practices help us to see ourselves more clearly, so that we might find simplicity where there seems to be complexity, and calmness where there might be chaos. Many people report improvements in their relationships with past experiences (traumatic and dramatic), as well as improvements in relationships with other people, and their innermost selves. Why? Because the practices of noticing the breath and bringing it into balance, allow us to notice everything else in our awareness, and by so doing, understanding arises, giving us the freedom and time to make wise choices.

There are three major components of the air we breathe: oxygen, carbon dioxide and nitric oxide. Oxygen provides the energy of life, carbon dioxide purifies, protects and promotes immunity, regulates (the rate and volume of breath), and nitric oxide dilates, enhances immunity and fights inflammation. Regulating the breath allows us to take control over autonomic functions to improve the quality of breathing processes and therefore improve the blend of these blood gases intentionally; for example by breathing with lips closed and extending the exhalation as we are learning here.

2. Softening

To create a safe and sacred space within ourselves, we must soften our awareness to notice what is happening externally and internally, allowing us to choose best behaviors and practices. Softening happens by taking breaths that are gentle and a bit deeper, which promotes dilation of blood vessels and airways, relaxing muscles and alleviating tension and tightness, both physical and emotional. This opening also refers to the openness of our minds.

3. Pratyahara

We can now turn our awareness inward and learn to observe ourselves and others, with compassionate detachment. We free our minds from external distractions, so that we become the object of our attention, we turn our awareness to what we feel, to what arises from within, that is the definition of pratyahara.

4. Proprioception and Interoception

Proprioception tells us where our bodies are in space so that we can refine physical balance and increase control, as in riding a bicycle, dancing or driving a car.

Interoception is noticing what we are feeling inside of our bodies and minds and allows us to create balance and control in our internal world through breathing and subtle movement practices. It is a key to emotional self-regulation. Interoception trains us to slow down and soften. The yogic practice of pratyahara, does just this, because it is followed by concentration, that single-pointed focus (concentration, dharana) that invites us into deeper levels of conscious awareness and ultimately into a sense of infinitely spacious awareness (meditation, dhayana).

So for example, we move from proprioception to interoception and back again: Where am I in space, and what does it feel like on the inside? What is happening in my external reality, and what am I feeling on the inside, my body, my heart, my mind? By using the breath as a bridge between both realms (which it is), we regulate our nervous systems so that we can soften and observe with keen awareness, flowing in the rhythm of a calm and easy breath.

5. Emotional Self-Regulation

In yogic philosophy, calming and quieting the mind is the epitome of personal accomplishment: the alleviation of one's own suffering through physiological action and intellectual understanding. Such actions are choices to create tranquility, both an emotional concept and a physiological state.

Through breath awareness and breath control/restraint, we can positively impact the vagus nerve. The vagus is the 10th cranial nerve; it serves as a major neurological conductor for MOOD and emotional well-being, as well as verbal articulation and facial expression, cardiac and pulmonary function, digestion and elimination, and immunological response. Vagal tone enables us to rest and calm down (parasympathetic tone), or resort to active problem-solving and self-protection, the instinctive fight or flight (sympathetic tone), or when this tone is reduced in the extreme, we feel threatened, numb, helpless or hopeless, we want to hide and disappear.

It is the parasympathetic tone that arises from specific yogic breathing practices, that creates and sustains tranquility. Through dedicated and repetitive practice, we might learn how to return to this healthy state of body and mind with ease.

This tranquility inspires a transformative sense of safety, according to Dr Stephen Porges, neuroscientist, who promotes polyvagal theory to gain control over our inner lives. Only through understanding repetitive experiences that create anxiety, depression and illness, can we take more control over our lives, one breath at a time. (see bibliography for Deb Dana's book)

THE ART OF BREATHING: THE PHILOSOPHICAL BASIS FOR OUR EXERCISES

Libraries are filled with treatises and texts on the philosophies of pranayama, the science of breath, techniques of mastering the breath, the ecstasy of becoming one with the Breath, relating to the breath as the primary connection with the Divine. Our exercises are based on the following examples from three ancient texts on the subject. Feel free to contact me for additional resources and references!

Upanishads (ancient texts likely written very early in the common era, post-Vedic literature)

Tejo-Bindu Upanishad, introduces Hamsa, the great swan, transcendent metaphor for Self, and the mantra repeated endlessly through every breath day and night, to move us beyond the human realms of waking, dreaming and sleeping.

Dhyana-Bindu Upanishad, reminds us of the enduring cycle of so'ham, so'ham, and the effortlessness of practice, ajapa japa, repeated as long as we are alive.

Patanjali's Yoga Sutras (200 BCE) are the premiere scriptures for the mastery of self in pursuit of the Divine, one of the most profound and instructive texts for Hatha yoga. Breathing practice (control and restraint), pranayama, is one of the eight essential practices required for the achievement of the transcendental state, merging with the Infinite.

Hatha Yoga Pradīpika (1350) Text written in the Middle Ages to carefully delineate specific practices for physical movement (asana) and breath work

BIBLIOGRAPHY

The Upanishads A series of writings pertaining to the metaphysics of existence, dive in!

Light on Prānāyāma: The Yogic Art of Breathing, BKS Iyengar in 1992 The "Bible" on Breath
Yoga Tradition: Its History, Literature, Philosophy and Practice, Georg Feuerstein, PhD, 1998

An encyclopedic reference book that is indispensable

Refining the Breath: The Art of the Awakened Breath, by Doug Keller

<https://www.doyoga.com/breath-details.htm>

A Morning Cup of Yoga, by Jane Trachsel (the most charming, lucid and lovely book)

Anchored, by Deb Dana (polyvagal theory and therapy in understandable and useful language)

Emotional Yoga, Bija Bennet (multidimensional guide of therapeutic yoga practices)

Breath, James Nestor (contemporary scientific journalism, personal and compelling)

The Last Best Cure, Donna Jackson Nakazawa (integrative medicine at its finest)

Multidisciplinary Approaches to Breathing Pattern Disorders, Leon Chitow et al

(science, protocols and practices)

THE ART OF BREATHING: THE EXERCISES

MORE YOGA AS LIFESTYLE MEDICINE
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Welcome, create a safe and sacred space to share the practices of yoga:

Find a comfortable seat, here and always.

Notice the INTENTION that brings you here today, and honor *this*...

CENTER your awareness on your breath, and honor *this*.

Center your body so that the spine feels long, and the body bright.

Breathe deeply and gently, always.

I invite you to continue with breathing exercises as frequently as possible, with curiosity (rather than intensity) and a very gentle approach:

Simple Breathing Exercise: (Shamata, a Buddhist meditation practice)

Breathe in, notice the coolness on the nostrils; breathe out, notice the warmth.

Breathe in, notice how the chest rises and expands; breathe out, notice a gentle release.

Breathe in that which you desire; breathe out that which no longer serves you well.

Use this practice while you are walking, riding or driving...in the middle of a difficult conversation, where you need some perspective...use the breathing exercises to remind yourself that what comes next is the next breath.

Deepening Exhalations: Simply exhale for a longer period of time than you inhale, be gentle.

Relax your entire body, from the eyes, jaws, shoulders, chest, belly, low belly, legs, feet, toes.

Try to breathe through the nose, with lips closed, as long as you can do this with ease, as it increases the release of nitric oxide into your body, a natural anti-inflammatory.

Three-part Breathing : Breathe in, gently counting 1-2-3 and pause at the top of the breath. Hover. **Notice, there is a stillness just waiting for you.**

Sense the movements throughout your body: lower belly, mid-chest and upper chest.

Breathe out gently in thirds, counting quietly 1-2-3, and pause at the bottom of the breath, where stillness will be waiting for you.

Practice for 2-3 minutes throughout the day. Perfect to help calm down at bedtime and if you awaken in the middle of the night...just turn your awareness to your breath, one breath at a time.

4-7-8 Breathing: Meditate on the breath as it flows in deeply for the count of 4; hold delicately for 7 counts; then exhale for 8 counts. Make your goal 4 - 6 breaths per minute to lower heart rate and blood pressure, and quiet your beautiful mind.

Ujjai breathing ~ make the sound of the ocean as you draw in a long, deep breath, pause at the top. As you exhale, continue to allow this sound to flow from your chest and throat, to inspire a strengthening of the muscles from the upper chest, up the throat and into the mouth. You will be able to sense a subtle tightening of the upper palate, back of throat and base of the neck. These sensations should be comfortable at all times and *never* strained.

Alternate Nostril Breathing: (Nadi Sodhana, yogic breathwork)

Use this practice for: calming down, releasing tightness and tension, dealing with anxiety, panic attacks, dizziness, nausea, pain, anger, frustration, impatience and fearfulness.

Breathe gently through your nose, as in exercise #1, just sensing “cool” or “warm”.

Breathe in fully, and close the right nostril with one finger, exhale out of the left side.

Inhale the left side, close the left nostril.

Exhale the right. Inhale the right nostril.

Close the right.

Exhale the left, inhale the left... close the left

Continue to alternate until you inhale on the left, remove the fingers and breathe out of both nostrils to end the practice.

Continue for as long as you are comfortable, up to 5-10 minutes depending on the situation. Try to keep your jaw relaxed and tongue soft on the floor of your mouth, like a little blanket...try not to judge too quickly, just continue to practice as long as you are comfortable.

Chandra Bhedana: inhale through left, exhale through right

Surya Bedhana: Inhale through the right, exhale through the left

Viloma Pranayama: interrupted breathing, where we pause several times to elongate the breath

Please note:

I'm offering a 4 week online class on the Art of Breathing, Thursday August 28th - September 18th from 12'noon – 1:30pm. Please contact me for details: lindalang@theopen-door.com

You can visit www.YogaAsLifestyleMedicine.com for updates on the Fall Schedule!

THE ART OF BREATHING: CURRENT RESEARCH

Pure Science

The Air We Breathe: three vital respiratory gases and the red blood cell: oxygen, nitric oxide, and carbon dioxide, Walter Dzik et al, <https://pubmed.ncbi.nlm.nih.gov/21496039/>

Nitric Oxide Therapy for Diabetic Wound Healing, Maggie J. Malone-Povolny, Sara E. Maloney, and Mark H. Schoenfisch, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6774257/>

Although this article alludes to pharmaceuticals employing nitric oxide, the information is relevant given that nitric oxide production in the nose can be increased through breathwork/pranayama.

Research with and from a Yogic Perspective

Yoga on our minds: a systematic review of yoga for neuropsychiatric disorders, Meera Balasubramaniam^{1*}, Shirley Telles² and P. Murali Doraiswamy^{1,3}, Frontiers in Psychiatry | Affective Disorders and Psychosomatic Research January 2013 | Volume 3 | Article 117

Breathing Rhythm and Pattern and Their Influence on Emotion, S. Ashhad et al, <https://www.annualreviews.org/search?value1=Breathing+Rhythm+and+Pattern&option1=fulltext>

Exploring Tranquility: Eastern and Western Perspectives, Christoffersen et al, <https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2022.931827/full>

An extremely informative and inspirational article

From my notes on RESEARCH:

Yoga May Bolster the Brain Regions Most Affected by Aging, Neha Gothe, Director of the Exercise Psychology Lab, University of Illinois at Urbana-Champaign

11 peer-reviewed papers were used, each explored brain scans to assess the impact of yoga practice on the brain. Here are her findings as a result of this review:



Increased gray matter volume in the hippocampus, a key structure for memory



Increased volume in certain regions of the prefrontal cortex, the seat of higher-order cognition



Greater connectivity across the default mode network. This network plays a role in processing memories and emotions and self-referential processing - processing information about yourself.

Read more about these fascinating studies: <https://www.scientificamerican.com/.../yoga-may-bolster.../>

You can reach me at lindalang@theopen-door.com
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