

# THE ART AND SCIENCE OF BREATHING



*The Breathing Room*  
*Painting by Sharon Ebert*

**Blessed are the poor in spirit: for theirs is the Kingdom of God.**

*(The First Beatitude -- Matthew 5:3)*

**Now is the blessedly ripe time to find our home in the breath,  
Remembering that the breath is our first and our last possession.  
When we do this, we begin to touch a very deep source of power within us.  
We touch that power which says, “I Can” to all situations within us.  
We connect with that part of our being which no one can take away,  
That part which no one can destroy.**

*(Translation of the First Beatitude from Aramaic by Neil Douglas-Klotz, 2004)*

Breath is the animating force that gives life to all matter. It is synonymous with the word spirit. Like spirit, it is in some ways mysterious. We cannot usually see it. We can sometimes hear it when we are experiencing pain or ecstasy. If we allow ourselves to be quiet and listen closely we become aware of its calming effect. We learn to look, listen and feel for the breath when assessing signs of life. Throughout life, the breath may be the only constant that we can depend on. The breath is a close and reliable friend. It constantly flows in and out of our body, in dynamic rhythm from the moment we are born, until we take our last dying breath.

Throughout time and across cultures there have been mystical beliefs and practices associated with breath. Indigenous people offer up prayer to the Great Spirit. In Christianity there are references to the Lord as the breath of life. In Genesis 2:7, “the Lord God formed man out of the clay of the ground and blew into his nostrils the breath of life, and so man became a living being.” In Eastern cultures the breath is synonymous with life force and is called prana, chi or hara. Eastern practices such as tai chi, chi gung, martial arts and yoga utilize breath control techniques to harness the power of the breath.

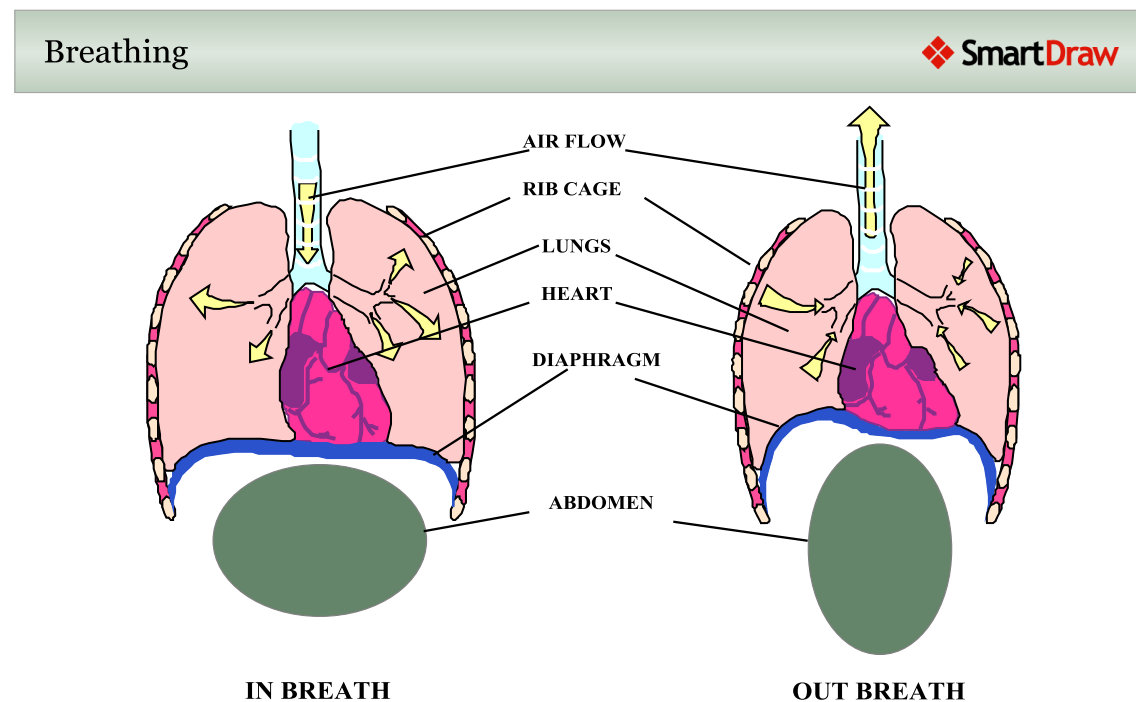
According to yoga philosophy, prana is found in all forms of matter, yet it is not matter. The major sources of prana are air, sunlight, and earth. We absorb prana from these sources and from the food we eat. Food from fresh plant sources has a great deal of prana; food from animal sources has very little prana, if any. In humans, the highest

manifestation of prana is thought and the lowest manifestation is the motion of the lungs. Literally, pranayama is the practice of controlling the life force by controlling the motion of the lungs.

Patanjali states, “Yoga is the control of thought waves in the mind” (as cited in Prabhavananda,1946, p.11). We do this by controlling the breath. When the breath is short, fast and erratic, the mind is racing and unsettled; there is a feeling of anxiety. When the breath is long, slow and smooth, the mind is settled and clear; there is a feeling of peace and tranquility. In controlling the life force through pranayama we control the thought waves of the mind. In this way, pranayama provides entry into the practices which lead to contemplation and the experience of Unity described by mystics throughout time and across cultures.

According to scientific research, the breath and the nervous system are inextricably linked. Stress researchers report that during the stress response the sympathetic nervous system is stimulated and breathing becomes rapid and shallow. During the relaxation response the parasympathetic nervous system is stimulated and breathing becomes slow. It also happens that if we want to be more alert and energetic we can induce that state of being by consciously breathing fast and shallow. If we want to be calm, all we need to do is to breathe slowly. The breath is the link that connects mind and body. It infuses matter with spirit.

#### THE PHYSICAL DYNAMICS OF BREATHING



The illustration shows the major structures of the chest. The green circle represents all of the organs and structures in the abdomen and pelvis. Notice that the size and volume of the green circle does not change, only the shape.

The diaphragm, a large flat muscle that separates the chest and abdomen, is the primary muscle of breathing. The shape of the diaphragm affects the shape of the chest and abdomen. During the out breath, the diaphragm is dome shaped. The top of the dome presses up towards the lungs, the ribs move closer together, the chest cavity gets smaller, and air is forced out. When the diaphragm contracts, it drops down as it flattens out, and looks like a Frisbee. The ribs separate, the chest expands creating negative pressure, and air flows in. The chest cavity changes both shape and volume with each breath. Contraction of the diaphragm causes the breath to flow in. Relaxation of the diaphragm causes the breath to flow out.

The abdomen is also affected by the movement of the diaphragm. During the in breath, the abdomen changes shape to accommodate the increased volume in the chest. When the diaphragm contracts and flattens out, it presses on the abdominal organs. The ability to soften the belly with the in breath, allows complete expansion of the lungs. The ability to contract the abdominal muscles on the out breath helps to press all of the air out. If you pay attention, you can see and feel the abdomen and chest changing shapes with each in breath and each out breath.

## SIMPLE YOGIC BREATHING TECHNIQUES

### DIRGHA PRANAYAMA

#### *Full Yogic Breath*

This basic breathing technique involves using the whole torso -- chest, abdomen and pelvis -- to maximize one's capacity to receive prana from the environment. It also maximizes our capacity to eliminate by products of metabolism. Movement of the chest wall strengthens the upper body, heart and lungs. Relaxation of the abdomen during the in breath helps us to connect with our feeling state. Contraction of the abdominal muscles with the out breath, strengthens the muscles that protect and support the lower back. The process of conscious slow deep breathing provides massage for all of the organs in the chest, abdomen and pelvis, and promotes overall health.

#### TECHNIQUE:

- Take long a slow, deep breath focusing on abdomen, chest and collar bones to stimulate complete expansion of the lungs.
- Allow the belly to soften and change shapes as the chest expands in all directions -- front to back, side to side and up and down. Allow the breath to fill the space all of the way from the pelvic floor muscles up to the muscles in the throat. Do not force or strain, simply allow the breath to enter as completely as possible.
- As you breathe out, gently activate the muscles in your belly by bringing the navel back towards the spine.
- Begin by practicing this technique for one minute, and extend the duration with daily practice.
- It may be used as the point of focus during formal or informal meditation.
- It may also be used during asana practice.

## BENEFITS:

- Relaxes the body, calms the mind.
- Revitalizes.
- Breaks old pattern of shallow breathing and establishes new pattern of deep breathing and relaxation.
- Gives abdominal organs a gentle massage.
- Improves digestion and elimination.
- Helps relieve constipation.
- Strengthens abdominal muscles, diaphragm, heart and lungs.
- Very soothing during menstruation, especially when there is discomfort.
- Can be practiced during postures, for relaxation, with meditation and throughout the day.

## NADI SODHANA *Alternate Nostril Breathing*



This is a beginner breathing practice that can be practiced by anyone. It brings the body and mind into balance. It can be used to energize when feeling lazy or bored. It can create calm when feeling anxious.



### TECHNIQUE:

- Form the fingers of your right hand into Vishnu Mudra and bring your hand to your face.
- Touch the side of the left nostril with your ring finger and your right nostril with your thumb.
- Close the right nostril with your thumb and gently exhale and then inhale through the left nostril.
- Close the left nostril, exhale and then inhale through the right nostril.
- Continue in this pattern -- exhale, inhale, and switch.
- You may continue with this breathing technique as long as you like. Simply bring all of your focus to the breath. Notice how relaxed and alert you become.

## BENEFITS:

- Balances right and left hemispheres of the brain and promotes whole brain functioning.
- Creates a deep sense of well being -- mentally, physically, emotionally and spiritually.
- Helps to alleviate headaches, boredom and restlessness.