

Pranayama – Sitali Breath

Breathing Techniques

There are many different breathing techniques. Some are very simple and others are quite complicated. The more we start with the simple actions and begin to practice them routinely, the better prepared we are to use the more complicated breathing techniques. It will take a long time of practice to master any of the techniques so we need not be in a hurry. Taking things slow and easy is the best strategy.

- Part 1
 - *The Belly Breath – breathing with the diaphragm muscle*
 - *The 4 Part Breath – breathing with all the respiratory muscles (a complete breath)*
- Part 2
 - The Pausing Breath (Viloma Pranayama)
 - Ujjayi Breathing (sound breath)
- Part 3
 - Alternate Nostril Breathing (Nadi Shodhan Pranayama)
- Part 4
 - Anuloma Pranayama – Prolonged Exhale
 - Pratiloma Pranayama - Prolonged Inhale
- Part 5
 - Lion’s Breath
- Part 6
 - Bhasrika Pranayama (Bellows breath)
- **Part 7 (today’s practice)**
 - **Sitali Breath**

Creating the Right Posture

The correct posture is necessary for getting the most out of pranayama. As a beginning measure, it is often best to use a posture lying on the back with the neck, rib cage, lower back, pelvis, arms and legs in an optimal and neutral position. This is especially true if you are prone to neck or shoulder tension. When reclined, the head and shoulders may be elevated on cushions if this is more comfortable.

A seated position can be also be used, but care must be taken to create an aligned posture and maintain an uplifted rib cage and elongated spine. The position of the head may be tipped forward to reduce neck strain. A bolster, chair, or bench may be helpful to reduce discomfort. Be sure that your legs are not uncomfortable or subject to reduced circulation. It is important that the body feel no strain or discomfort while practicing pranayama. Those who wish to sit on the floor may use a wall to help support the body.



Basic Breathing Practice

Equal Breathing

This technique is a simple one that helps to focus our awareness on our rate of breathing and can help us become mindful of our breath.

- Start in a comfortable seated or reclined position.
- Exhale completely.
- On your next breath, count the number of seconds it takes for you to inhale.
- As you exhale, breathe out for the same number of seconds.
- Repeat, inhaling and exhaling for the same duration.
- Repeat a comfortable number of times.

Zipper Breath

This technique is both a stretch as well as a breathing practice. It can be useful when we have been sitting for long periods as well as if we feel stiff first thing in the morning.

- Stand with your knees slightly bent.
- Bend forward from the waist and hips so that your back is slightly rounded and your arms can hang downward.
- Exhale completely.
- Slowly return upright and at the same time, inhale deeply.
- Now slowly return to the forward position as you exhale slowly.
- Repeat a comfortable number of times.

Anatomy of Breathing Nervous System Control

We don't have to think about breathing because the autonomic nervous system of our body controls this function, as well as many other functions of the body. We can however override the autonomic function and control our breathing consciously. Yet, if we hold our breath for too long, the body will override our conscious control and force us to exhale and breath again.

The part of the brain that controls our breathing is the most ancient part, the brain stem. The nerve cells in this part of the brain automatically send signals to respiratory muscles to contract and relax at regular intervals.

There are several factors that influence the brain respiratory centers:

Oxygen Levels

We have specialized nerve cells within our aorta and carotid arteries that monitor the amount of oxygen in our blood. These peripheral chemoreceptors feed back into the respiratory center of our brain. If oxygen levels of the blood decrease these nerve cells tell our brain that we need to increase the frequency of our breath and the depth of our breath.

Carbon Dioxide Levels

A peripheral chemoreceptor found in the spinal area monitors the amount of carbon dioxide in our cerebrospinal fluid (CFS) that is surrounding our spinal cord as well as our brain. If the carbon dioxide level gets too high then these nerves tell our brain we need to breath more. Once the level of carbon dioxide returns to normal then our breathing rate will slow down.

Blood Acidity

Our peripheral and central chemoreceptors monitor the pH level of the blood and CFS. For the health of all our cells our body can only allow a very small variation of blood pH, which is normally between 7.35 and 7.45. If the chemoreceptors detect an increase of acidity (more hydrogen ions) then they tell the brain to increase our breathing. Blood and CFS acidity level is heavily influenced by the concentration of carbon dioxide and bicarbonate in our system. Changes in breathing can rapidly alter the pH throughout the body. We alkalinize our body (remove acidity) when we breathe deeply.

Stretch

Our lungs and chest wall have stretch receptors that monitor the amount of expansion of these areas. If we over-inflated our lungs they will stretch enough for these receptors to tell our brain we need to exhale and reduce inhales. This mechanism reduces the chance of damage to the lungs from over-inflation. This is one of the reasons we need to practice our breathing techniques in a slow and persistent fashion. If we try practice advanced techniques too quickly we may signal these receptors and they will prevent us from taking deep breaths. As we condition our lungs and chest wall with frequent gentle practice they we will condition these areas, making them more pliable and able to tolerate deeper breaths.

Higher Brain Centers

In the hypothalamus and cortex areas of our brain we have nerve cells that also influence our breathing. If we experience pain, strong emotions or fear, the hypothalamus will tell our respiratory centers to speed up our breathing. The cortex allows us to voluntarily control our breath to speed up, slow down or hold our breath. This voluntary control can be over-ridden by the involuntary centers.

Chemical Irritants

The nerve centers located in our airways that connect our lungs to our nose can detect unwanted substances in the air we breath. This can be pollen, dust, noxious chemicals, water, or smoke. If these nerves sense these things, they contract the respiratory muscles and cause us to sneeze or cough. This action violently exhales the air from our lungs and air passages and removes the substance from our body.

The strongest factors influencing our breathing are the carbon dioxide concentrations in our blood and CFS. The next strongest factor is the oxygen level of our blood.

Hiccups

If our respiratory centers send extra impulses to the diaphragm we get unwanted contractions. Hiccups typically are self limiting. The self treatment method of holding our breath will stimulate changes in our oxygen and carbon dioxide levels which hopefully will create changes in our respiration and cancel the hiccups. Other methods such as scaring someone, or drinking from a glass while upside down may serve to distract us from the hiccups or stimulate other unconscious controls of breathing, but definitely entertain all the witnesses.

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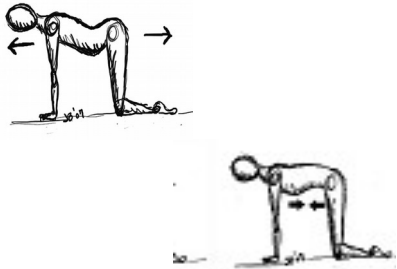
Sitali Pranayama - Curled tongue

This pranayama is reported to cool down our body. It is often used as a practice after exercise where the body is sweating or overheated. The inhales are taken through the curled tongue and we exhale through the nose.

1. Sit comfortably with proper posture.
2. Keep your head level. Open your mouth and form your lips into an O.
3. Push out your tongue and curl it length wise like a tube.
4. Stretch your tongue out further and inhale drawing the air through the tube you have made with your tongue.
5. After a full inhale, withdraw the tongue and close the mouth.
6. Tilt the chin down and exhale through your nose.
7. Repeat for two to ten minutes.
8. Relax in a reclined position.

*Note – take care when doing this around a dog since they may take liberties with your outstretched tongue.

Yoga to Enhance the Breath

Cat Cow	Instruction
	<ul style="list-style-type: none"> - Kneel with hands under shoulders and knees under hips - Pull chest forward with arms and hips back with legs <ul style="list-style-type: none"> - Try to pull forward and backward with equal pressure - As waist elongates, gradually sag back downward, tilting pelvis <ul style="list-style-type: none"> - Keep low back comfortable - Breathe deeply and slowly into belly - Tighten abdomen and begin to tilt pelvis back to starting position <ul style="list-style-type: none"> - Back will become flat - Pubic bone will move toward navel - Relax and repeat until mild fatigue