

Deep Breathing Techniques

There are many breathing different breathing techniques. There are also many different reasons we may seek out learning these techniques.

Reasons for Practicing Deep Breathing

- Enhancing relaxation and meditation practice.
- Improving exercise performance, especially athletic endeavors that require endurance.
- Reducing distress associated with asthma and other obstructive lung disorders.
- Improving public speaking and singing abilities.
- Reducing anxiety and panic attacks.
- Improving oxygenation of body tissues.
- Enhancing the mind and body connection.
- Pursuing traditional training methods of pranayama.

Many deep breathing practices originated from the traditions of yogic pranayama. Some modern techniques stem from clinical settings and the teachings of respiratory therapists. No matter what the reason for seeking a deep breathing practice, or what method is used, the underlying reason for success with any method is a simple one. Practice.

Practice Breathing Training Daily

For success we should be practicing daily. The duration of practice is not as important, especially at first, as the persistence of practice. Even two minutes per day, done daily will yield results and establish a pattern that can be modified to a longer practice in time.

Start with Simple Techniques

The ***Diaphragm (belly) Breath*** is the simplest technique and almost all other breathing techniques rely on this foundation.

- In a comfortable posture, exhale completely.
- Inhale into your belly, expanding it like a balloon as much as comfortably possible.
- Exhale slowly and completely.
- Repeat 2 – 10 minutes.

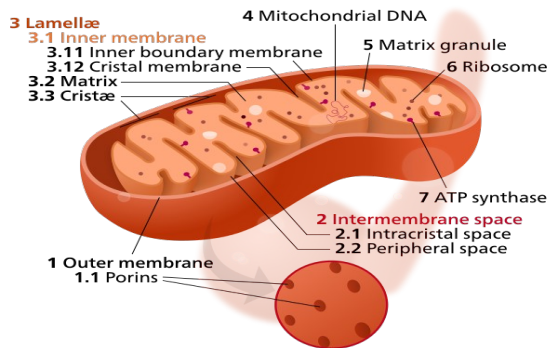
The ***Four Part (complete) Breath*** is also very simple:

- In a comfortable posture, exhale completely.
- Begin an inhale into your belly.
- As it seems the belly is full, continue to breath into the back of your chest from the lower ribs to the shoulder blades.
- Continue breathing into the sides of your chest up into your under arms.
- Add more breath into your collar bone area until you can breath no further.
- Exhale slowly and completely.
- Repeat 2 – 10 minutes.

Anatomy of Breathing The Chemistry of Respiration

Respiration is different than the act of breathing. All body tissues need energy for growth, repair, movement and excretion. Our energy needs are satisfied by obtaining glucose digested from the foods we eat and oxygen brought to us through our lungs. Respiration is a chemical process by which we create cellular energy through the combination of glucose with oxygen.

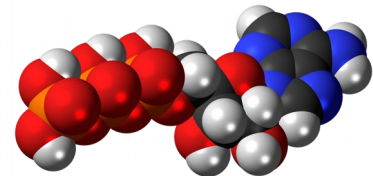
Mitochondria



Cellular respiration occurs largely in the mitochondria of our cells. The cell breaks down the molecules of glucose and oxygen to generate the energy it needs to function. The process is similar to a controlled burn, much like wood being consumed in a fire released thermal energy. In cellular respiration the process is controlled so that the energy is captured and used to drive the other processes that go on inside our cells.

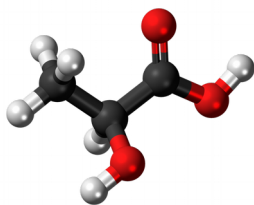
ATP – Cellular Energy

Oxygen is used to break down glucose and produce energy in the form of a molecule called Adenosine Triphosphate (ATP) which is used directly to supply energy to the cell. Aside from ATP, the other byproducts of cellular respiration are carbon dioxide and water. Not all cellular respiration uses oxygen. Anaerobic respiration produces ATP without oxygen and its byproduct is lactic acid.



Adenosine Triphosphate (ATP) molecule

Lactic Acid



Lactic Acid molecule

The burning sensation we sometimes feel in our muscles when we are doing prolonged exercise is the feeling of lactic acid accumulating in the tissue. What is happening is that we have exceeded our body's ability to provide enough oxygen to the cellular tissue in order for it to create enough energy for the action. Therefore the body naturally switches to the anaerobic pathway of energy creation in order that we can continue to function.

Lactic acid is a temporary molecule. When we slow down our exercising and can bring in enough oxygen again, the lactic acid will come in contact with oxygen and be broken down into carbon dioxide, which we will exhale, and water. This typically takes place within 45 minutes of ceasing excessive exercise.

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 (today's practice)**
 - **The Pausing Breath (Viloma Pranayama)**
 - **Ujjayi Breathing (sound breath)**
- Part 3
 - Alternate Nostril Breathing (Nadi Shodhan Pranayama)
 - Sitali Pranayama - Curled tongue
- Part 4
 - Anuloma Pranayama – Prolonged Exhale
 - Pratiloma Pranayama - Prolonged Inhale
 - Bhasrika Pranayama (Bellows 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.



Viloma – The Pausing Breath

Before beginning your breathing practice pause and make note of the way you feel. If your body is tense in some way, adjust your position to a more comfortable one. Make sure you can maintain your comfortable posture for the duration of the breathing practice.

As you begin any new breathing technique it is best if you limit your practice to just a couple of minutes at first so that you do not get overwhelmed. A couple of two minute practices in a row might serve you best before attempting a longer duration of breath control.

Viloma Stage 1

1. Exhale deeply.
2. Inhale for two or three seconds then pause for two or three seconds.
3. Continue inhaling in this way until the lungs are full (4 to 5 pauses).
4. Be sure to feel no strain from this practice.
5. Immediately exhale slowly and deeply.
6. Repeat for two to ten minutes.

Viloma Stage 2

1. Inhale without pausing deeply and completely but without any strain.
2. Exhale for two or three seconds then pause for two or three seconds.
3. Continue exhaling in this way until the lungs are empty (4 to 5 pauses).
4. Immediately inhale slowly and deeply.
5. Repeat for two to ten minutes.

Viloma Stage 3

1. Exhale deeply.
2. Inhale with pauses as in stage 1 until lungs are full.
3. Pause for two to three seconds.
4. Exhale with pauses as in stage 2 until lungs are empty.
5. Repeat for two to ten minutes.

Following your breathing practice return to your normal breathing and stay in your seated or reclined position for a few minutes longer. Notice the way you feel and any areas that might be tense. Gently stretch out any tense areas before returning to your normal activities.

***From Dr. Sarfaraz Munshi, urgent care lead at Queen's Hospital in London:
(He recommends this to those dealing with active Covid infections to help the lungs)***

Here's his simple, three-step technique.

1. Take five deep breaths in, each time holding the breath for five seconds.
2. On the sixth deep breath, take it in and do a big cough (cover your mouth, of course).
3. Do two cycles of the above and the lay flat on your front (on a bed, ideally) taking slightly deeper "normal" breaths for the next 10 minutes.

"You've got to understand the majority of your lung is on your back not on your front," he adds. "So by laying on your back you're closing off more of the smaller airways and this is not good during the period of infection."

This exercise can leave you feeling a little dizzy, so use caution.

Ujjayi Breathing – Sound Breath

In the sanskrit word, ujjayi, the prefix 'ud' means upwards or expanding and conveys a sense of power. 'Jaya' means conquest or success and restraint. In ujjayi the lungs are fully expanded with the chest thrust out like that of a mighty conqueror.



Contrary to popular belief, Darth Vader was not practicing Ujjayi breathing...

Many who have practiced yoga have been exposed to ujjayi breathing through either trying it themselves or hearing it being performed in yoga classes. Typically the student will focus on making a loud breath sound without understanding the purpose of this breath. Although a breath sound is created in the advanced stages of ujjayi pranayama, it is overall very modest in volume and does not create strain to the throat. All inhale sounds are made with a 'ssss' and all exhale sounds with a 'hhhh'. The major focus of ujjayi pranayama is to make deep and slow inhalations and exhalations.

Step 1. Recline on your back with your head and chest elevated so that your chest is expanded and your arms arranged by your side and legs stretched out. Close your eyes softly.

Step 2. Breathe in slowly and deeply filling the lungs completely and then slowly exhale completely. Focus on feeling the filling and emptying of the lungs. (duration 2 - 10 minutes)

Step 3. The emphasis now is on creating a slow deep and steady exhalation until the lungs are empty followed by a normal inhale. (duration 2 - 10 minutes)

Step 4. The emphasis now is on creating a slow and deep inhale with a 'ssss' sound to the breath, filling the lungs completely. Focus on the sound of the inhale. Breathe out slowly but not deeply. (duration 2 - 10 minutes)

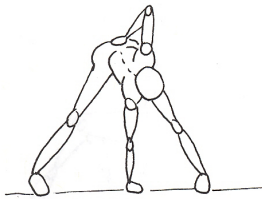
Step 5. The emphasis now is on creating slow and deep inhales and exhales, fully filling and fully emptying the lungs. (duration 2 - 10 minutes)

Step 6. A seated posture is now created with the shoulders over the hips, chest uplifted, spine elongated and chin slightly tucked. Focus on creating the 'ssss' sound on inhale and the 'hhhh' sound on exhale. Control, adjust and synchronize the flow, tone and rhythm of the breath.

Yoga to Benefit Breathing Practice

A relaxed body will help your breathing practice. Frequent practice of exercise and yoga can assist you in feeling comfortable practicing breathing techniques. There are several yoga techniques that can directly assist us in practicing pranayama.

Spiraling forward fold



Start in a standing position with your legs widely separated.

- Fold forward from your hips, keeping your back long.
- Bend your knees.
- Place your hands on your bent knees and straighten your arms.

Keeping your spine long, gently stretch one shoulder toward the opposite knee.

As you twist, keep your sensations pleasant.

Breathe as deeply as you can and stretch your ribcage.

Return to the center position and repeat the opposite way.

For greater stretch:

Keeping your spine long, reach one arm toward the floor in the center between your legs.

- Place your other hand on the knee or if comfortable, reach that arm toward the ceiling and rotate your shoulder inward.
- Maintain your long spine, breathing deeply to expand out your ribs and chest.

Return to center and repeat with opposite side.