Ujjayi or Diaphragmatic Breathing

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Contraindications

Always take your health into your own hands and consult your physician before beginning any breathwork practice. Do not perform Ujjayi breathing if you are pregnant. Through incorrectly practiced breathing you could put stress on the baby. Do not perform these meditations if you have a heart problem, including hypertension. Altering the breath in any way can put unnecessary stress on the heart. Do not practice this technique if you have any issues with your organ health.

With the current state of the world stress and anxiety are emotions we are all facing. Learning healthy ways to deal with uncertainty and manage our daily stress is no longer a luxury but has become a necessity. With prolonged stress your overall health decreases drastically, not to mention the toll it takes on your emotions. Prolonged stress has been linked to heart disease, anxiety, depression, weight gain, increased blood pressure, fibromyalgia, headaches, memory loss, complex regional pain syndrome, and tremors.[3] These are things we all need to take seriously as we discover ways to easily and efficiently manage stress levels. Daily meditation is a wonderful tool to implement to decrease your overall stress levels. However, we are not always able to meditate the moment we feel stress and we need a fast way to bring ourselves back to a state of rest and relaxation. That is exactly what Ujjayi breathing does, quickly and efficiently brings you out of fight or flight mode and back into the rest and relaxation mode of your nervous system where you can find a place of peace and calmness.[7]

The best thing about Ujjayi breathing is that you can do it anywhere, anytime. You don't need a quiet room or anything special to adjust the way you are breathing. You can use this technique during a stressful business meeting or as you are trying to help your child with homework. Ujjayi or diaphragmatic breathing is the act of restoring the body's natural breathing patterns by bringing the breath down into the diaphragm where it belongs. By breathing into the belly you stimulate the rest/relax/digest mode of your nervous system, this in turn calms your body and mind. Your diaphragm is a dome-shaped muscle that sits underneath your rib cage. When you breathe into your belly, you push the diaphragm down into your abdomen and your belly will expand or push out. As you breathe out, the diaphragm returns to its original dome shape pushing the breath out of the lungs and your belly flattens. In his book, The Yoga of Breath, Richard Rosen shares, "Deep breathing acts as a crowbar slowly prying open even the tightest places within us."[1] As you practice Ujjayi breathing you will feel your breath opening places inside you that have been blocked and restricted, physical or emotional. Your breath is able to move into even the tightest spaces within you, each breath expanding and growing.

Ujjayi breathing is a natural belly breathing technique that has many health benefits, both emotional and physical. **Belly breathing is one of the quickest ways to calm your nervous system and bring both your body and mind into a state of calmness**. Efficient belly breathing is one of the only ways you can directly access your nervous system.[1] Your nervous system is responsible for regulating every organ in your body, including your hormone secretion. The health of your nervous system affects the overall health of your body and mind. Learning how to breathe efficiently helps to reset your nervous system to a state of calmness.

Efficient breathing can also connect you to the universal energy force and remove the blocks that stop your energy from flowing freely through you. To better understand the important role the breath plays, let's explore the nervous system a bit.

Our bodies are made up of two nervous systems, your central nervous system (CNS) and your autonomic nervous system (ANS). Your central nervous system is everything you have conscious or voluntary control over, things like moving your muscles. Your autonomic nervous system (ANS) is in charge of everything that is automatic or involuntary in your body. These are all the body functions you don't have to think about, the things that are always functioning whether you are awake or asleep like breathing, heart rate, organ function, blood vessel dilation, digestion, hormonal regulation, and temperature regulation.

Your autonomic nervous system is made up of two parts: the sympathetic nervous system (SNS) commonly known as "the fight/ flight/freeze mode" and your parasympathetic nervous system (PNS) commonly known as the "rest/ relax/digest mode." Your body is constantly bouncing between these two modes. It is in either a state of action or a state of rest. This is how your autonomic nervous system regulates the functions of your organs, hormones, sleep cycles, blood pressure, digestion,etc. It is important to recognize that the two systems rarely work together. You are moving between functioning in fight/ flight/freeze or rest/relax/digest.

Let's first look at the sympathetic nervous system. It is most commonly known for its work in emergencies. It is part of your autonomic nervous system that will get you out of danger. If an emergency arises your SNS will give you a boost of cortisol and adrenaline and depending on the person, he/she will fight/flight/freeze. But that is not all that the system does. It also acts in moments of excitement, kicks on during exercises, extreme temperatures, and with emotions such as anger, fear, and elation.[2] It is also highly active when we are under stress.

When the SNS is active, its primary concern is to get you out of danger or give you a boost of energy. It is not concerned with digesting food or keeping your blood pressure regulated. It actually does the opposite. It increases your heart rate and blood pressure. It constricts the blood going to your organs and muscles, stops digestion, and halts many vital organ functions.

With long-term stress your body over-produces cortisol, which is a stress hormone that can lead to a lot of health problems like diabetes, hypertension, and cardiovascular disease.[3] Left unchecked the fight/flight/freeze mode can cause many long-term health problems. I want to be very careful not to villainize the SNS, since it plays a vital role in our survival and daily function. Besides taking control during emergencies, it is also active right before we wake up to help get us moving for the day. It fires up during exercise to give us the push to keep going, and it kicks on when we are excited. The point is not to shut off the SNS. Rather, the goal is to learn how to regulate your autonomic nervous system so you can easily and regularly move between both fight/flight/freeze and rest/relax/digest. The problems arise when we get stuck in one way of being and lose our versatility.

We live in a fast-paced society with constant stimulation coming at us all the time. Every time we feel stressed, anxious, angry, frustrated, even excited, the SNS activates. When we are overstimulated, the fight/flight/freeze mode doesn't get a chance to shut off and this is when problems arise- both emotional and physical. The constant flood of information coming

at us all the time activates the SNS. Chronic stress and overstimulation can lead us to being stuck in a state of fight/flight/freeze and this can be a serious problem for our overall health. An overactive SNS has been connected to a long list of health conditions including but not limited to: heart disease, anxiety, depression, weight gain, increased blood pressure, fibromyalgia, headaches, memory loss, complex regional pain syndrome, and tremors.[3]

In contrast, the parasympathetic or rest/relax/digest mode's job is to keep your daily processes of life going and conserve physical resources. That means it keeps your organs doing their jobs. It brings us into a state of homeostasis and balance within our body's systems. It does almost the opposite of what the SNS does. It slows our heart rate, decreases blood pressure, brings blood to our organs and muscles, digests food, regulates metabolism, keeps our organs running smoothly, increases sexual arousal, controls our bladder, improves sleep, and brings us into a calm state.[4] Just like the SNS we can't function in this mode all the time. There are times we need to get moving. There are moments that we should be able to fight/flight/freeze. But once that moment is over, we need to be able to easily and efficiently bring ourselves back into a state of rest/relax/digest. Again, a healthy nervous system can move back and forth as your body and mind needs.

Your emotions play a huge role in whether you are acting out of fight/flight/freeze or rest/relax/digest mode.[5] Your sympathetic nervous system is activated when you feel stress, anger, frustration, anxiety, sorrow, and excitement or elation. Feeling emotions is normal and is an essential part of life. The problems arise when you get stuck in an emotion. There were a few studies done on how fast the physiological effects of emotions take to run their course through our bodies. In other words when we feel anger our SNS is activated and all those reactions happen: heart rate increases, digestion stops, organ function slows down, etc. In Jill Bolte Taylor's book, *A Brain Scientist's Personal Journey*, she explains that it takes 90 seconds for those physiological responses to dissipate from the body.[6] She then goes on to explain, "If I remain angry after those 90 seconds have passed, then it is because I have chosen to let that circuit continue to run." Carrying the emotion after this point is a choice.

The problem is most of us avoid feeling our emotions. We fight the feeling and this causes it to last longer. When an emotion comes in, take the time to feel it, let it run its course, and then come back to rest/relax/digest mode. When I think of it that way, it is so much easier to let myself feel whatever I'm feeling. I say to myself, "I can give myself 90 seconds to feel angry." After that 90 seconds I choose to let it go.

It's when we get caught in chronic states of anger, frustration, and anxiety that there are detrimental effects to our health. In moments of anger and rage your adrenal glands dump adrenaline into your bloodstream and this chemical change puts stress on your heart. We could list a dozen other scenarios relating to how emotions trigger your fight/flight/freeze mode to activate and how that in turn affects the function of your organs and your overall health. The point of it all is that we have to learn ways to regulate our nervous system so that you can efficiently come back into rest/relax/digest mode. Learning to control your breath is the easiest way to do this. Your breath is the only function of the autonomic nervous system you easily have control over. Most of us cannot consciously decide to make our liver function better or our blood vessels dilate, but all of us can slow our breathing.

When you look at babies breathing, they breathe deep and into their belly and back. Right before someone falls asleep you can see and hear a change in their breath as they breathe deeper. Essentially with Ujjayi breathing we are restoring our body's natural breath patterns. **In the absence of stress, we would breath into our bellies all the time.** Stress arrests our natural breathing to an unhealthy point. In other words when the fight/flight/freeze mode is not active you naturally breathe into your belly. Pay attention the next time you are just about to fall asleep or just wake up to what your breath feels like: you will most likely be breathing into your belly. Most of us are inefficient breathers. When asked to take in a deep breath, the vast majority of adults will puff up their chests and breath into their upper chests. Watching most people breathe they breathe shallow and short breaths into their upper chests. When we are angry or stressed, we will find we breath quickly and fast which does not help. Learning to become an efficient belly breather can have a drastic positive effect on your overall health as it brings you back into rest/relax/digest mode.

Another benefit of deep breathing is that it increases the amount of oxygen you take in. This allows more oxygen to circulate throughout your body. When you exhale compressing the lungs, you give your body a chance for better metabolic exchange. This exchange allows more oxygen to come in on your inhale, and more carbon dioxide and metabolic waste to go out on your exhale. This purifies your blood stream and releases toxins from your body.

I was taught to think of oxygenating your blood cells like this: Your red blood cells are like little school buses driving through your bloodstream. When you inhale, you want to fill every seat on the bus with oxygen. Your heart then pumps blood cells throughout your entire body, dropping the passengers off to all the tissue in your body. You are literally breathing into your entire body, delivering oxygenated blood cells to every cell. As you drop off the oxygenated passengers, you in turn pick up carbon dioxide and other metabolic waste. You want to exhale completely to let off all of those passengers before you pick up new oxygenated ones. Diaphragmatic breathing allows you to both fill and empty your bus efficiently. Taking the time to slow down and take a few deep breaths into your belly can have a dramatic effect on your overall health and state of mind.

How to Practice Ujjayi or Diaphragmatic Breathing

> Ujjiayi *breathing is most commonly done breathing through your nose. As the nostrils offer more resistance to the breath than the mouth, the nose helps the lungs bring in and out as much air as possible. This type of breathing opens your lung capacity, balancing out the ratio of oxygen and carbon dioxide in the blood. It aids in detoxification as you are able to release and filter more as you breathe out slowly through your nose.*[7] *The benefits of ujjayi breathing are not lost if, for whatever reason, you are unable or uncomfortable breathing through your nose.* ***You can breathe through your mouth at any time.*** *It is very important that you feel comfortable and never short of breath. If you feel light-headed, short of breath, or feel in danger, like you cannot get enough breath, just go back to your normal breathing. Start out slowly and build as you can comfortably.*

It is very important to remember the purpose of this exercise is to reset your rest/relax/digest mode. If you force your breath to be deep, you will not relax. This is not a forceful breath. It is a surrender to your natural flow of breath. Be very mindful not to

force or push your breath to be deep, rather let it naturally deepen as you go. Simply bring your breath to your belly without force and let it move from there. If you feel light-headed, dizzy, faint, or get a headache, those are all signs you are forcing the breath. If this happens, return to natural breathing until it passes. In the beginning do not practice for more than five minutes at a time. Always consult your physician before starting any breathwork practice.

Find a comfortable place to sit or lie down. You want your body to be comfortable and free from pain so that you are not distracted. I like to bring my hands onto my body, one on my lower belly and one on my chest. Take in a deep breath and notice which hand moves first. Slowly and easily begin to breathe down into your belly. It can be helpful to imagine you have a balloon in your belly and as you breathe in, the balloon inflates. With your inhale your stomach should expand and push into your hand. As you breathe out, the balloon deflates and your belly falls.

Once you are comfortable with this, take both hands onto your lower belly, wrapping your thumbs around the back of your body, at the bottom of your rib cage. Slowly begin to let your lungs expand three-dimensionally. Let your belly raise forward and feel your lungs expand to the side. Lastly, try to breathe into your thumbs or back as well. When you breathe out, let everything naturally come back to the center. This three-dimensional breath is subtle but you will feel it. Never do you force your breath. Never do you feel short of breath or uncomfortable breathing. Always let it be natural, easy, and comfortable.

Never underestimate the power of a few deep breaths to calm the body and mind. May your heart find peace and your mind a place of stillness.

Namaste

References

1.Rosen, Richard, and Kim Fraley. *The Yoga of Breath: a Step-by-Step Guide to Pranayama*. Shambhala, 2002.

2."Role Of the Autonomic Nervous System in Emotion." *PreserveArticles.com: Preserving Your Articles for Eternity*, 18 Apr. 2011, www.preservearticles.com/psychology/role-of-the-autonomic-nervous-system-in-emotion/3947.

3.The Editors of Encyclopaedia Britannica. "Sympathetic Nervous System." *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 13 Sept. 2019, www.britannica.com/science/sympathetic-nervous-system.

4.Editors, BD. "Parasympathetic Nervous System." *Biology Dictionary*, 29 Apr. 2017, biologydictionary.net/parasympathetic-nervous-system/.

5. Kreibig, Sylvia D. "Autonomic Nervous System Activity in Emotion: A Review." *Biological Psychology*, Elsevier, 4 Apr. 2010, www.sciencedirect.com/science/article/pii/S0301051110000827?via=ihub#!

6. Taylor, Jill Bolte. *A Brain Scientist's Personal Journey*. Hodder & Stoughton Ltd, 2008.

7.Rama, Swami, et al. *Science of Breath: a Practical Guide*. Himalayan Institute Press, 1999.

8. Syuki, Brian. "12 Belly Breathing Benefits And The Best Way To Do It." *Focus Fitness*, 16 May 2018, www.focusfitness.net/belly-breathing-benefits/.

9.Ford, Brett Q, et al. "The Psychological Health Benefits of Accepting Negative Emotions and Thoughts: Laboratory, Diary, and Longitudinal Evidence." *Journal of Personality and Social Psychology*, U.S. National Library of Medicine, Dec. 2018, www.ncbi.nlm.nih.gov/pubmed/28703602.