

BREATHING MODULE

UNLOCK STRESS RELIEF, IMMUNITY, & BRAIN POWER





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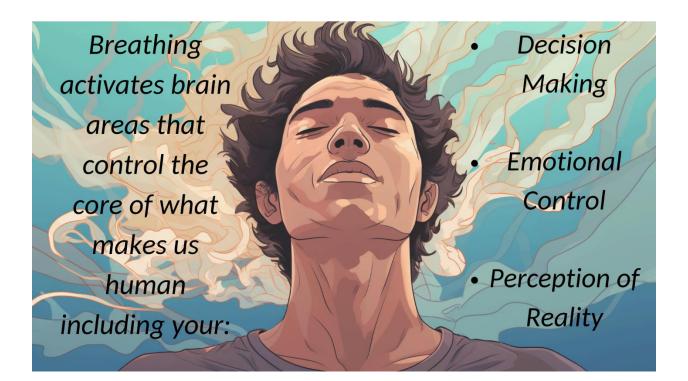


CHAPTER 1: INTRODUCTION TO THE POWER OF BREATHING

WHY IS BREATHING IMPORTANT?

Respiration or breathing as it is commonly known is one of the most fundamental processes of life and has a profound impact on your mental state, physical performance, and quality of life.

Even though breathing is profoundly important, easy to change, and pleasurable, we often take the action of breathing for granted since we do it automatically and rarely think much about it. Unfortunately, ignoring the action of breathing can have dire consequences for our lives, relationships, mental capacity, physical capacity, and emotional regulation. The good news is fixing bad respiration habits is relatively easy and the benefits are far reaching. First, let's take a look at how breathing affects every part of your body and mind through the nervous system.



BREATHING AND THE NERVOUS SYSTEM

Breathing has been closely linked to spiritual practices in the east, west, and everywhere in between. Yogic and Buddhist breathing practices are the most wellknown, but breathing is also integral in Christian monastic traditions such as Gregorian chants and Russian Orthodox breath moving [1] as well as across the world in Islamic, Greek, Chinese, and shamanic traditions [2].

Modern medical research has discovered that breathing is intimately tied to nervous system functioning (both the autonomic nervous system (ANS) and central nervous system (CNS)) which includes your brain, spinal cord, "fight or flight" response, "rest and digest" response, and a large part of how you perceive and interpret the world.[3] Our ancestors in disparate parts of the world noticed the power breathing had over the very essence of a person and now science is beginning to catch up.

In fact, "Neuroanatomic and brain imaging studies reveal breath-activated pathways to all major networks involved in emotion regulation, cognitive function, attention, perception, subjective awareness, and decision making." [4]



Breathing plays a key role in reducing stress & inflammation which are linked to **80% of all health problems**.

That means that breathing can directly influence your intelligence, decision making, mood, perception of reality, and your ability to deal with stress, anger, anxiety, as well as other difficult emotions.



You can reap massive benefits with little physical effort through proper breathing or you can face very real and devastating dangers when breathing improperly. First let's start with what happens when you improperly breathe.

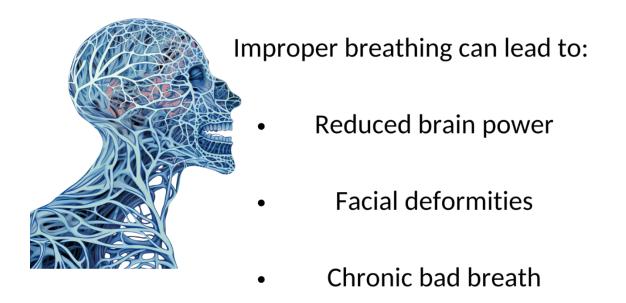
DANGERS OF IMPROPER BREATHING

Improper breathing is shallow, erratic, and oftentimes completely through the mouth. Breathing in and out through the mouth is the default mode for most of the western world. In 2015, a survey of over 1,000 adults from the Breathe Right brand, found that 61% of respondents identify themselves as mouth breathers. Mouth breathing promotes shallow breathing and can lead to numerous physical problems including:

- Structural deformities in the face of children [5], [6], [7], [8]
- Chronic bad breath, dry lips, sleep apnea, and snoring [9], [10]
- Increased risk of gum disease, tooth decay and crowded teeth [11], [12]
- Reduced brain function and brain speed [13], [14], [15]
- Narrowing of airways [16]
- Increased stress and risk of disease. [17]
 - &
- Chronic stress, increased anxiety and depression. [18], [19], [20]
 - When you breathe in through the mouth you may be artificially creating an environment in your body mimicking a constant fight or flight situation. Living in a constant state of stress and suboptimal energy can create a downward spiral that often leads to anxiety and/or depression.







BENEFITS OF PROPER BREATHING

Improper breathing may plague over half the populace and lead to devastating consequences like chronic stress, disease, and death. The saddest part is that these people may have been able to alter their futures by spending a few minutes a day breathing differently. The good news is that changing something as simple as your breathing pattern can have a hugely positive impact on deep and meaningful parts of your life including improving your mental functioning and emotional control. Improper patterns of breathing can be unlearned and they can be unlearned from the comfort of a chair, couch or bed which makes it almost seem too easy.

Once you have the correct knowledge and begin to practice proper breathing regularly you can expect to see major benefits such as:

- Decreased stress and increased stress tolerance. [21], [22], [23], [24]
 - Breathing can directly stimulate the "rest and digest" and "fight or flight" responses made by the autonomic nervous system (ANS) to influence how much stress you feel. Decreasing and managing stress is more important than ever considering the American Medical Association (AMA) reports 80 percent of all health problems are stress



related and the World Health Organization (WHO) has classified stress as the health epidemic of the 21st century. [25]

 Improved cognitive ability, focus and decision making. [26], [27], [28], [29], [30]

> By providing more circulation to the brain and stimulating neural pathways directly linked to focus and decision making you can be the best version of yourself simply through breathing properly.

 Increased well being and emotional regulation (including more control over anxiety, anger, and depression). [31], [32], [33], [34], [35], [36], [37], [38]

> Breathing properly promotes calm thoughts and actions that help reduce negative emotions giving you more control than ever over the direction of your emotions, especially in difficult situations.

Breathing in the right way can lead to improved brain function and enhanced intelligence



Additional Benefits of Proper Breathing

- Increased pain tolerance [39]
- Reduces symptoms of insomnia [40], [41]
- Reduces symptoms of ADD, ADHD, PTSD, OCD, & Schizophrenia [42], [43],



[44], [45]

- Elimination of Waste
 - Every time we breathe in we inhale oxygen into our lungs that gets transported into our blood and throughout our bodies to our organs, tissues, and eventually every cell in our body. When we breathe out, waste is gathered in the form of carbon dioxide and exhaled. Breathing is the primary means of eliminating waste from our bodies accounting for 70% of the waste elimination. The other 30% is primarily through defecation and urination. Imagine a gross thought for a moment combine all your poop, pee, and sweat throughout the day into a giant ball. The amount of waste you eliminate through breathing is over double the size of that ball. [46]

LEARN TO BREATHE, REAP THE REWARDS



How can you gain all the benefits of proper breathing? How can you learn to freshen your mind at will to markedly improve your focus, eliminate stress, maximize your cognitive abilities, improve your wellbeing, increase your lifespan, and improve heart, brain, and lung health? And how can you do it all without becoming a monk?

How do we do it?

We simplify and condense scientifically validated breathing exercises from monastic traditions across the world, professional sports that specialize in breathing such as freedivers, and clinical breathing practices for health and wellness, into simple practices for the modern professional with little free time.



Time Commitment

That's where we come in. At Thriving.org we offer an evidence-based, no-nonsense course, that focuses on brevity for the busy individual. By dedicating as little as one minute a day to breathing you can begin to conquer stress and increase your emotional control, gaining profound benefits to your mental health in the process.

Progressions: Start at any level and progress as fast as you want.

We have created a simple step-by-step format that you can follow at your own pace, no matter how fast or relaxed it may be. You can start this course right now regardless of your current knowledge and/or current level of breathing skill.

Doing & Learning: Learn through taking action!

You will learn through audio, video, and readings, but primarily through doing. Each level has practice(s) that will be key in your progress. In this Learning Module the practices will be breathing exercises with accompanying guided audio. For most exercises there are multiple guided audios with varying durations to choose from which allow you to customize how long your practice will be.

All you have to do is sit down comfortably and listen to the audios to gain benefits that humans have spent hundreds of lifetimes worth of time striving for and perfecting. You will learn breathing skills, strategies, and tactics that are clearly defined and are custom made to seamlessly integrate into your daily schedule in a practical and time efficient manner. This is a course that will benefit you for the rest of your life with an extremely low time investment. Once you learn the skills and integrate them into your life they start to become second nature and the benefits continue to flow to you for life like free daily deposits into your wellness bank account.

Behavioral Science: Habits that stick, for life

We focus on providing you true value by changing your life for the long term. That is why we integrate evidence based behavioral science tools designed to make proper ways of breathing lifelong habits. Basically, behavioral science has shown that you can increase your motivation by making everything as easy as possible and by tying learning objectives to your deepest wants, needs, and purpose. We do things like providing two versions of every reading, one extremely short reading (30-second summary) that you can scan through in less than a minute and one longer, more indepth reading for comprehensive study. This allows you to use your time effectively and get right to real world applications if desired.

Make no mistake, regular practice is required to see drastic change. We give you the tools to make regular practice as easy as possible by leveraging technology and the study of behavioral science, but you still must put in the effort (minimum of 10 seconds per practice).

Leverage habit science to create life-long benefits



WHAT YOU SHOULD EXPECT FROM THIS COURSE:

- Gain the ability to active your anti-stress pathway to destress when stress hits.
- Increase emotional regulation and decrease anxiety,



depression, and anger.

- Increase your stress threshold (feel less stress than you used to in similar situations).
- Increase your resistance to illness.
- Enhance physical markers of health such as resting heart rate, blood pressure, VO2 max, and increase the efficiency of your lungs.
- Avoid structural deformities (especially in the face) caused by poor breathing habits (if your body is still growing).
- Build a base of knowledge that will allow you to engage in advanced practices designed to further steel you to stress, deal with emotional trauma, and improve skills in sport, music, or anything else you desire.
- Build a solid foundation for a meditation practice.

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OVERVIEW

Breathing is a foundational practice that can increase your cognitive abilities, improve your mental health, and increase the control you have over your emotional state at any time. Breathing properly can increase your resilience against viruses and diseases. Breathing properly can reduce or eliminate certain deformities from forming in a growing body. When you learn to breathe properly you also learn how to take control of your autonomic nervous system which you can use to decrease your stress and increase your resilience to stress.

sages of ages past, recently scientifically verified, and commonly used by top performers including Olympic gold medalists, military special forces, and CEOs to "hack" your body into producing a feeling of natural calm whenever you want. Build your practice into a force that transforms your life and empowers you to control your emotional and mental states with greater ease while increasing your resilience to stress so practically nothing can phase you. We make it easy to start, easy to progress, and easy to reap all the benefits of proper breathing by creating a longterm habit.

Learn simple techniques, built upon ancient knowledge discovered by

30 second summary

- Stress kills and is responsible for 80% of health problems and we are facing a stress epidemic.
- Improper breathing can deform your face, give you bad breath, constantly stress you out, and lead to energy loss, disease and death.
- Use the scientifically validated techniques of monks, top performers, and elite Olympic athletes to reduce stress, improve emotional control, and improve your mental and physical health.
- Practice for as little as 10 seconds a day to learn to control and hack your body to destress, refocus, and control your emotional state.



WEEK 1 PRACTICE: DEEP NASAL BREATHING

Your homework today and for the rest of the week is to practice <u>deep nasal</u> <u>breathing</u> for at least one inhale and exhale each day this week and record it in your <u>Week 1 Breathing Journal</u>. You can find breathing journals to record your practice, cheat sheets for quick reference, and guided audios that last only 30 seconds to 1 minute to help you dive into breathing quickly and easily. Use the fillable PDF's or the paper versions of the journal, whichever is easier for you. This week is all about baby steps and starting a consistent practice.

Resources

- Check out the How to Perform Deep Nasal Breathing Cheat Sheet for on the next page or here (digital link). —>How to Perform Deep Nasal Breathing (Practice).
- Record your daily breathing practice using the Week 1 Breathing Journal found below or here (digital link) —> <u>Breathing Journal Week 1 (Practice)</u>
- If you need more space for notes and comments, record your daily breathing practice in the **Daily Breathing Journal** found below or here (digital link) > <u>Daily Breathing Journal (Practice)</u>
- Follow this roughly 30-second guided breathing audio and start gaining the benefits of breathing immediately! —> One Breath 30-second Guided Audio (Practice) <u>https://thriving.org/wp-content/uploads/2024/05/One-Breath-0_32-1.mp3</u>
- Follow along with this roughly 1-minute guided breathing audio and start gaining benefits quickly and easily! —> One Breath 1-minute Guided Audio (Practice)

https://thriving.org/wp-content/uploads/2024/05/One-Breath-1_13-1.mp3

Breathing Module: Full Workbook

HOW TO PERFORM DEEP NASAL BREATHING

STEP 1: Sit Up Straight

Sit or lie down with your back straight. You can sit in a chair with your feet on the ground and your hands on your lap or at your sides. You can also sit cross legged on the floor or a mat if you prefer.

STEP 2: Inhale Through Your Nose

Inhale through your nose as slowly and deeply as you can without straining. Feel the air entering your nostrils and concentrate on breathing deep into the bottom of your lungs.

STEP 3: Exhale Slowly

Exhale slowly, steadily, and deeply through your nose or through pursed lips, like you're blowing the candles out on a cake. Exhaling like this naturally lengthens your exhalation which naturally relaxes your body. Follow the sensations of your breath and feel the part of your body the air is touching in the present moment. Pause for a moment and notice the moment between breaths, then repeat.

How long should I practice Deep Nasal Breathing?

To Make an Impact-One breath cycle Fast Improvement->20 Minutes Uncanny Improvement->60 Minutes



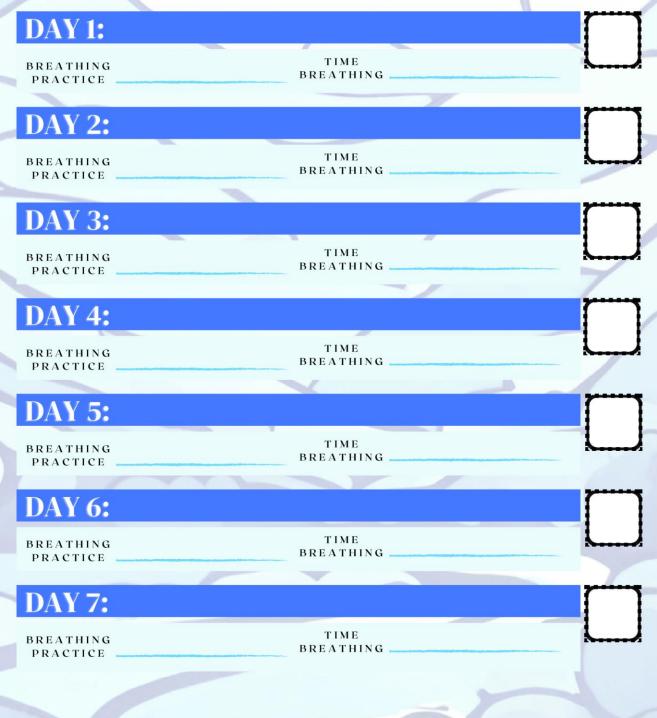
BREATHING JOURNAL WEEK 1

Goal Duration: How long will each daily breathing practice last?

Start Time:

At what time will you start your breathing practice each day?

Directions: Check the box if you did a breathing practice. Write the date, breathing practice, and how long you did it.





Breathing Module: Full Workbook

BREATHING JOURNAL

DATE



DURATION

NOTES



CHAPTER 2: JUST BREATHE

HACKING STRESS & THE NERVOUS SYSTEM

BREATHING AND STRESS

Stress is extremely common and closely linked to disease, depression, and death. The physical processes that lead to stress are directly tied to breathing, through the autonomic nervous system. One of the only known ways to directly influence the autonomic nervous system (and the easiest) is by controlling your breathing patterns.

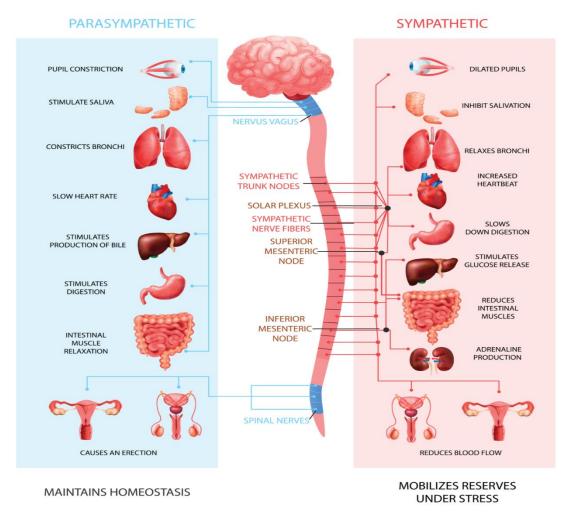
The autonomic nervous system is named so because it runs on autopilot without any conscious control. It is hugely important in regulating many essential bodily functions. The autonomic nervous system controls:

- heart rate
- blood pressure
- body temperature
- adrenaline production
- some healing processes
- and much much more..



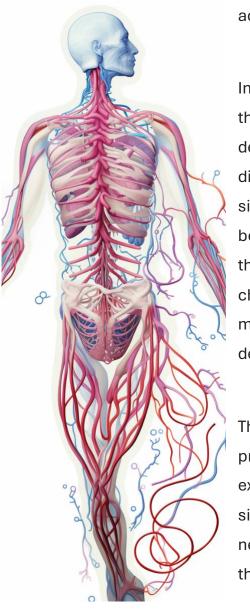
The autonomic nervous system is broken into two main divisions. These two main parts are:

- The parasympathetic nervous system (PNS), known as the regulator of the "rest and digest" response, which promotes a slower heart rate and calmness.
- 2. The sympathetic nervous system (SNS), known as the regulator of the "fightor-flight" response, which causes an increase in adrenaline production, a faster heart rate, and taxes the body to put it in a state of high alert.



PERIPHERAL AUTONOMIC NERVOUS SYSTEM

Breathing can manipulate the autonomic nervous system, which regulates the stress response.



The PNS and SNS and their stress responses are akin to the roles of a wise president and strict dictator. The president (rest and digest) is calm, cool, & collected. It has time to think long term, gather inputs from all the different systems in your body and develop a measured response with proper stratagems. Your body goes into this mode when the rest and digest response is activated.

In times of special turmoil or life and death you need the dictator. Someone who will act quickly and decisively, possibly with incomplete information. The dictator will think short term, because in a life-or-death situation no action in the short term means there may be no long term. The body is stretched to the limit in these trying times to hopefully overcome the extreme challenge, but afterwards the body will be spent both mentally and physically. This is what occurs to varying degrees when the "fight or flight" response is activated.

The "fight or flight" response releases adrenaline and primes the body to act in stressful situations. This was extremely useful to our ancestors in life-or-death situations, but in the modern age - especially when neither flight nor fight are practical it can cause stress that leads to health problems. This can be severely



taxing to our bodies, sometimes leading to chronic illness such as heart disease or digestive problems. In fact, **The American Medical Association (AMA) states 80 percent of all health problems are stress related.** Let that sink in for a moment

and consider how calming your body through proper breathing can change your health outcomes drastically.

IMPROPER BREATHING'S EFFECTS ON STRESS

The "fight or flight" response is heavily influenced by how you are breathing.

Specifically, how slow or fast you are breathing in and out as well as where you are breathing from. The default mode of breathing in the Western world is commonly too shallow which can stimulate the nerves connected to the sympathetic nervous system ("fight or flight response").

Are you feeling symptoms of stress? Symptoms like:

- Increased anxiety, depression, or anger
- Loss of energy
- Headaches, body aches, & decreased quality of life





By breathing poorly, you can keep yourself in a chronic condition of stress that wears down on you slowly, sucking your energy, motivation, and the very life from you. The fact of the matter is death from stress or stemming from stress is a very real possibility and even if you do not die from a stress related disease you can experience a whole slew of negative consequences from stress, especially from chronic stress, including:

Mental Symptoms

- Anger
- Anxiety
- Depression
- Lack of motivation

Physical Symptoms

- Loss of sexual drive
- Lack of energy
- Headaches
- Upset stomach
- Feeling tight and/ or muscle tension

Source: The American Psychological Association (APA), 2020 Stress in America report. [47]

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PREVALENCE OF STRESS

Stress is clearly linked to poor physical health, mental health, and even to decreased longevity and quality of life. This link to disease and depression is especially alarming when you realize how common stress is in the modern world.

According to the American Psychological Association:

- 49% of adults in 2020 from the United States said that stress has negatively affected their behavior in the past year.
- More than 75% of adults report symptoms of stress.
- 1 in 4 health workers has been diagnosed with a mental health disorder since the 2019.

According to The American Institute of Stress:

- Nearly 75% of people experience stress which negatively impacts their mental health.
- Over 75% of people experience stress which negatively impacts their physical health.
- One third of the world populace reports feeling extreme stress.
- 8 out of 10 workers in the United States report stress on the job.
- Nearly half of the populace may suffer effects on their sleep from stress.



According to The Global Organization for Stress:

- Over 90% of Australians feel stressed about at least one important area of their life.
- Close to half a million (~450k) employees in Britain think their stress is causing them to get sick.
- Over 85% percent of Chinese laborers report being stressed.

75% of Americans report symptoms of stress...



HOW TO BREATHE NATURALLY FOR HEALTH & WELLNESS

The solution to chronic stress is regulating the very processes that create the stress response. Many processes that lead to the sensation of stress are regulated by the autonomic nervous system, which is directly tied to nerves that can be stimulated by breathing. By regulating your breathing, you can not only manage your stress more effectively, but also increase focus, improve your quality of life, physical health and mental health. In the following section we will discuss the foundations of Breathing through your nose can protect you from viruses, bacteria, and even disease.



proper breathing for maximum health benefits.

Nasal Breathing

The solution to mouth breathing and the host of negative consequences it brings including chronic stress is nasal breathing. Nasal breathing is the way the human body was designed to breathe. Inhaling through the nose is superior to mouth breathing for many reasons that are outlined below.

Cilia

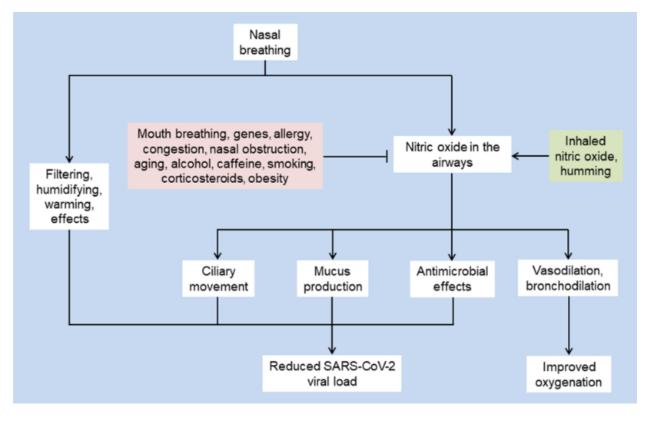
• When you breathe in through the nose tiny hairs called cilia filter the air you breathe and can protect you from harmful bacteria entering your lungs.

Nitric Oxide

- When inhaling through your nose, air mixes with nitric oxide, which both warms and moistens incoming air, priming it for your lungs. Nitric oxide is not effectively produced when inhaling through the mouth. [48], [49]
- Nitric oxide can kill harmful bacteria, viruses. and fungi adding another layer of defense against infections beyond the protection by the cilia. [50], [51]
- Nitric oxide widens the airways and blood vessels, which makes oxygen



absorption much more efficient. This suggests vast benefits for physical and even sexual health. [52], [53]



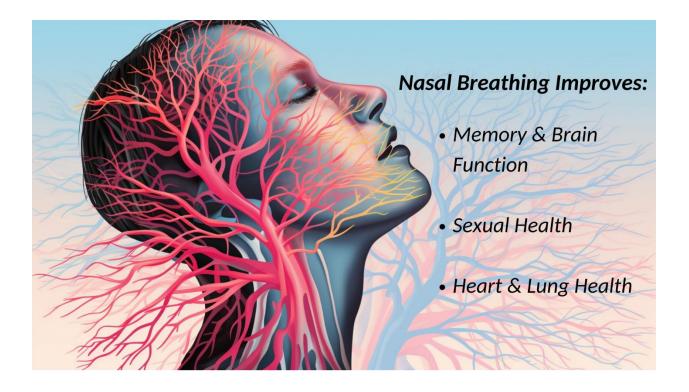
<u>[59]</u>

Nose-Brain Connection

Your nose is an extension of the brain region called the hypothalamus which regulates the autonomic nervous system. When you breathe through your nose, you're giving your hypothalamus the proper inputs it needs to do its jobs which include regulating heart rate, blood pressure, sleeping/waking, and hunger/thirst. By providing the proper inputs to the hypothalamus it can create the proper outputs which can lead to a calmer mental state and a better functioning body along with a whole host of other benefits, including:



- Improved blood oxygenation and circulation [54]
- Better lung function [55]
- Improved memory and brain function [56], [57], [58]
- Improved defense against infections [59]
- Improved stamina and cardiovascular health [60], [61]
- Improved sexual health [62]



Deep breathing can enhance immunity



Deep Diaphragmatic Breathing

Deep breathing is the antithesis of shallow breathing. Instead of just using the throat muscles to draw in air, the domed shaped muscle beneath your ribcage, called the diaphragm, is used. This muscle creates a vacuum effect drawing air deep within the lower reaches of your lungs.

When you breathe with your diaphragm you can begin "belly breathing" where you appear to be filling your belly with air. In reality you will actually just be filling the bottom of your lungs completely with air. This will help you maximize the capacity of your lungs- providing more oxygen to your whole body.

When you breathe in deeply it helps promote deep exhalation, naturally. Exhaling deeply and slowly can promote feelings of calm by stimulating your parasympathetic nervous system. To make your exhale slower try pursing your lips and letting the air out of your lungs as slowly as possible.

By breathing deeply, you are naturally giving your body the oxygen it needs and loudly proclaiming to your body that everything is OK and you it's time to relax.



Deep breathing is proven to relieve stress and improve decision-making When your body gets that signal clear, long term, effective thinking abounds, healing processes begin, and a cascade of benefits are commonly experienced, including:

- Improved cognition [63]
- Improved business decision making [63]
- Slower heart rate and increased heart rate variability (HRV) [64]
- Reduced stress [65]
- Improved lung function [66],
 [67]
- Reduced blood pressure [68]
- Improved digestion [69], [70]
- Improved pain management ability [71]
- Improved immunity [72]

The simple act of breathing deeply can change your long-term health outcomes and even improve your decision-making ability and mental health, creating a life changing practice.

OVERVIEW

Stress is a prevalent problem around the world and disrupts the proper functioning of the body and mind. By breathing properly, you can defend yourself from many of the harmful effects of stress, and reduce your feelings of stress leading to better decision making and increased cognition. Breathing properly starts with breathing into your "belly" slowly and deeply using your diaphragm. Breathing in through your nose is how the human body was designed to breathe. By doing so you are providing important information your brain uses to adjust sophisticated processes within your body, you are providing better oxygenation, you are filtering out potentially dangerous pathogens, protecting your body from some bacteria and even viruses.

30 Second Summary

- Breathing in through your nose filters harmful bacteria, warms air going to your lungs, and increases oxygen uptake.
- Breathing slowly and deeply activates your body's natural anti-stress pathways reducing stress, improving cognition, improving decision making, slowing your heart rate, lowering blood pressure, improving lung function, and increasing your ability to manage pain.



WEEK 2 PRACTICE: BELLY BREATHING

Your homework today and for the rest of the week is to practice <u>belly breathing</u> for at least one inhale and exhale each day this week and record it in your <u>Week 2</u> <u>Breathing Journal</u>. You can find breathing journals, cheat sheets, and guided audios that last about 2 minutes and 30 seconds to dive a bit deeper into your breathing technique while keeping the practice light. Use the fillable PDF's or the paper versions of the journal, whichever is easier for you. This week is all about keeping your practice consistent and evolving your technique. Build upon your skills from last week while focusing on really activating your diaphragm through "belly" breathing to expand your lung capacity, increase stress relief, and improve cognitive function this week.

Resources

- Check out the How to Perform Belly Breathing Cheat Sheet on the next page or here (digital link). —>How-to-Belly-Breathe (Practice)
- Record your daily breathing practice using the Week 2 Breathing Journal found below or here (digital link) —> <u>Breathing Journal Week 2</u> <u>Fillable</u> (Practice)
- If you need more space for notes and comments record your daily breathing practice in the **Daily Breathing Journal** found below or here (digital link) > <u>Daily Breathing Journal (Practice)</u>
- Follow this roughly 2:30-second guided breathing audio for an immersive deep breathing experience designed to relax and improve your deep breathing technique. —> Deep Breathing Guided Audio- Relax (Practice) https://thriving.org/wp-content/uploads/2024/05/Deep-Breathing-Relax-2_42-1.mp3
- Follow this roughly 2:30-second guided breathing audio for an immersive deep breathing experience designed to greatly improve your deep breathing technique. —> Deep Breathing Guided Audio- Technique (Practice) https://thriving.org/wp-content/uploads/2024/05/Deep-Breathing-Technique-2_42-1.mp3

Breathing Module: Full Workbook

HOW TO PERFORM BELLY BREATHING

STEP 1: Sit. Place Hand On Belly

Sit or lie down with your back straight. Place one hand on your belly. You will use the hand on your belly to monitor your breathing and help you breathe more deeply.

STEP 2: Inhale & Fill Your Belly

Inhale through your nose and direct your breathe into your lower stomach. The hand placed on your belly should be rising while you inhale. Try to fill your lower stomach or "belly" completely with air before your upper chest is filled.

STEP 3: Exhale Slowly

Exhale slowly, steadily, and deeply through pursed lips or through your nose. Both of these methods naturally lengthen your exhalation which naturally relaxes your body and either one is acceptable. Follow the sensations of your breath and feel the part of your body the air is touching in the present moment. Try to exhale the air in the top of your stomach first and work your way down until your belly sucks in completely.

Pause for a moment and notice the stillness between breaths before you repeat the process from Step 1 again.

How long should I practice Belly Breathing?

To Make an Impact-One breath cycle Fast Improvement->20 Minutes Uncanny Improvement >60 Minutes



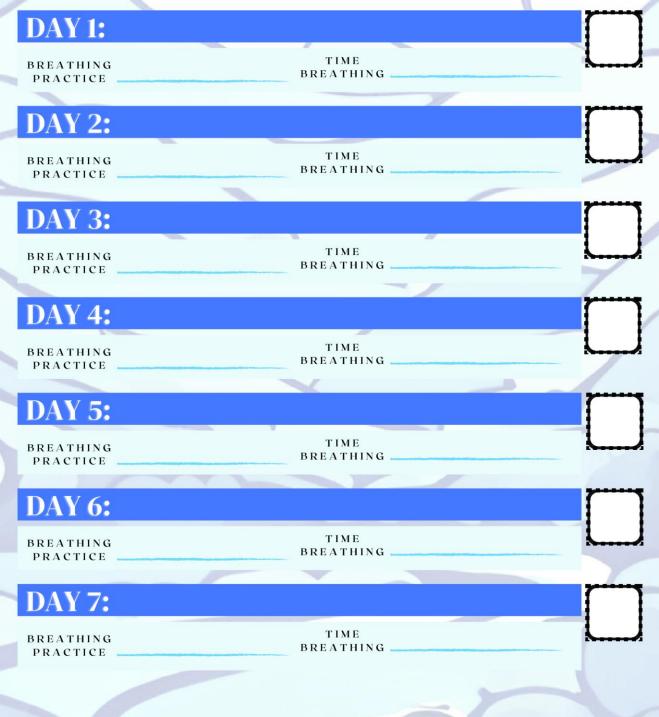
BREATHING JOURNAL WEEK 2

Goal Duration: How long will each daily breathing practice last?

Start Time:

At what time will you start your breathing practice each day?

Directions: Check the box if you did a breathing practice. Write the date, breathing practice, and how long you did it.





Breathing Module: Full Workbook

BREATHING JOURNAL

DATE



DURATION

NOTES



CHAPTER 3: THREE-STAGE DEEP BREATHING

MAXIMIZE THE BENEFITS OF PROPER BREATHING

BENEFITS OF 3 STAGE BREATHING

You have learned how to alter your breathing patterns to strengthen your lungs, heart, and vascular systems. You have activated your diaphragm and breathed deeply into your abdomen by belly breathing.

Now, you can graduate to 3 stage breathing, which will utilize the maximum capacity of your lungs. You will learn to breathe even deeper and magnify all the benefits outlined in previous lessons including:

- Increased cognition
- Better decision making
- Increased physical & sexual health
- Increased happiness
- Increased resilience to stress & decreased stress
- Increased control of your emotions

In this lesson, we are moving away from theory and diving into practice. Make sure you have practiced belly breathing and learned to breathe using your diaphragm before jumping into 3 stage deep breathing. Building a strong foundation is essential to reaping the full benefits of breathing. When you breathe, make the process of breathing your focus, and in short order, you will begin controlling your body's anti-stress pathways.



3-stage breathing maximizes the benefits of deep nasal breathing including further enhancing cognition and stress relief.



BASICS OF 3 STAGE BREATHING



Stage 1: Fill your lower lungs with air.

Stage 2: Fill your middle lungs.

Stage 3: Fill your upper lungs completely with oxygen. 3 stage breathing is performed almost identically to belly breathing except now you will not just focus on filling & emptying your lower lungs with air, but also your middle and upper lungs as well. Your goal when performing 3 stage breathing is to keep your focus on your breath while filling and emptying your lungs completely with air. As the name implies breathing can be broken down into 3 stages. Each stage corresponds with the area of the lungs filled with oxygen at each point in time. Stage 1 corresponds to your lower lungs which you focus on while belly breathing. Stage 2 corresponds to the middle stomach and lower chest. Stage 3 corresponds to your upper chest and your throat.

3 Stage Breathing Instructions

1. Position Instructions:

a. Sit comfortably with your back straight or lie down on your back.

b. Place one hand on your abdomen and one on your chest to monitor your breathing.

Note: Always breathe in through your nose. You can exhale through your mouth or nose, whichever is more comfortable.



2. Breathing In:

- a. Draw air into the bottom of the lungs and feel the hand on your stomach rise as your abdomen expand with your diaphragm.
- b. Feel the hand on your chest rise as the middle third of the lungs fill with air as you expand your upper abdomen and chest cavity.
- c. Draw air into the top third of your lungs, shoulders, upper chest, throat, and even into your brain feeling your shoulders rise.

3. Breathing Out:

- a. Purse your lips or breathe out through your nose as you let the air go from the top third of your lungs, and your shoulders relax.
- b. Push air out of the middle third of your lungs while contracting your chest cavity.
- c. Pull in your abdomen and force all the remaining air out of your lungs.



OVERVIEW

How to Use This Exercise

Congratulations! You have learned to breathe properly. You can now move on to higher pursuits but always remember what you have learned here and continue practicing. This breathing technique will serve as the foundation for most meditative practices and will be a fundamental habit for continued health and wellness throughout your life. Beyond your formal breathing practice, attempt to breathe like this as much as you can in your everyday life, so relaxation and focus permeate everything you do.

30 Second Summary

- You can utilize the full capacity of your lungs by breathing into the lungs from the bottom up and then breathing out from the top down. In practice you inhale and feel your belly rise, then your upper abdomen, and then your chest. When you exhale you feel your shoulders fall first, then your chest, then your upper abdomen, and finally your belly sucks in when there is no more air to let out. This is called 3 stage breathing.
- Three-stage breathing is a foundational practice that helps you maximize all the benefits outlined so far including a faster brain, improved memory, better decision-making, increased physical & sexual health, more happiness, less stress, and more control over your emotions.

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WEEK 3 PRACTICE: 3-STAGE BREATHING

Your homework today and for the rest of the week is to practice <u>3-Stage Breathing</u> for at least one inhale and exhale each day this week and record it in your <u>Week 3</u> <u>Breathing Journal</u>. Use the fillable PDF's or the paper versions of the journal, whichever is easier for you. In the resources section below you can find breathing journals, cheat sheets, and guided audios that last from one to ten minutes letting you adapt to your changing schedule with the option of a deeper practice or a quick relaxation session (remember you can always practice without a guided audio as well for as long or short as you please). Focus on following your breath up and down your lungs during both your inhalation and exhalation then watch your stress melt away like never before.

This week is about getting a grip on THE foundational breathing practice for full use of your diaphragm to maximize your stress relief, focus, lung capacity, and the other benefits of deep diaphragmatic nasal breathing. By mastering 3 stage breathing you not only maximize the benefits of deep nasal breathing but also lay a foundation for stress relief, superior physical performance, and the ability to jump into most types of meditation, mindfulness, and visualization practices with a distinct edge because you can hack your body to enter a state of calm relaxation quickly and efficiently (if you don't know what any of those practices are that is fine, just know that they are techniques used by top performers such as Olympians and CEOS and you can learn about them and their evidence backed benefits in the Mindfulness and <u>Visualization</u> modules).

Resources

- Check out the How to Perform 3-Stage Breathing Cheat Sheet for using your 3rd and some would argue most important breathing practice on the next page or here (digital link). —> <u>How-to-Perform-3-Stage-Breathing (Practice)</u>
- Record your daily breathing practice using the Week 3 Breathing Journal found below or here (digital link) —> <u>Breathing Journal Week 3 Fillable</u> (<u>Practice</u>)



- If you need more space for notes and comments record your daily breathing practice in the **Daily Breathing Journal** found below or here (digital link) > <u>Daily Breathing Journal (Practice)</u>
- Follow this 1 Minute Guided Audio to teach you 3 stage breathing quickly. —
 > 3 Stage Breathing Guided Audio for 1 minute (Practice)
 https://thriving.org/wp-content/uploads/2024/05/3-Stage-Breathing-1_00 1.mp3
- Follow 2:30 Guided Audio to teach and immerse you in 3 stage breathing quickly. —> <u>3 Stage Breathing for 2 and half minutes (Practice)</u> <u>https://thriving.org/wp-content/uploads/2024/05/3-Stage-Breathing-2_37-</u> <u>1.mp3</u>
- Follow this 10-minute Guided Audio to teach and immerse you deeply in 3 stage breathing. —> <u>3 Stage Breathing for 10 minutes (Practice)</u> <u>https://thriving.org/wp-content/uploads/2024/05/3-Stage-Breathing-10_26-</u> <u>1.mp3</u>

Breathing Module: Full Workbook

HOW TO PERFORM 3-STAGE BREATHING

STEP 1

Sit comfortably with your back straight or lie down on your back. Place one hand on your abdomen and one on your chest to monitor your breathing.

Note: Always breathe in through your nose. You can exhale through your mouth or nose, whichever is more comfortable.

STEP 2

Inhale exactly as in belly breathing by inhaling through your nose and bringing air into the bottom of your lungs. Feel the hand on your abdomen rising first as your belly completely fills with air. Now go beyond belly breathing and feel the middle third of your lungs fill with air as the hand on your chest rises and you expand your upper abdomen and chest cavity. Continue inhaling air into the top third of your lungs and throat as you feel your shoulders rise.

STEP 3

Purse your lips as you exhale slowly starting from the top third of your lungs. As the air leaves your jaw, neck, and shoulders feel them relax completely. Feel the hand on your chest fall, feel the air leaving your middle lungs, and feel your chest relaxing. Continue exhaling slowly and steadily, feel the hand on your stomach falling, and pull in your abdomen to let all the remaining air out of your lungs.

How long should I practice 3-Stage Breathing?

To Make an Impact-One breath cycle

Fast Improvement->20 Minutes Uncanny Improvement->60 Minutes



BREATHING JOURNAL WEEK 3

Goal Duration: How long will each daily breathing practice last?

Start Time:

At what time will you start your breathing practice each day?





Breathing Module: Full Workbook

BREATHING JOURNAL

DATE



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NOTES

DURATION





CHAPTER 4: SECRET SAUCE

ANCIENT KNOWLEDGE VALIDATED BY MODERN SCIENCE

AN UNLIKELY TRICK TO BOOST THE BENEFITS OF DEEP BREATHING

Many of the breathing traditions around the world incorporate a secret ingredient that has been scientifically proven to massively boost the benefits received from normal deep breathing. This secret weapon is used by Christian monks in Gregorian chant, by Buddhist monks chanting "om", and by the happy guy humming his way down the street.

As you may have guessed by now the "secret ingredient" we are referring to is humming or singing. Humming and/ or singing are universal across human cultures and are likely more ancient than language itself. There is even some evidence that singing predates modern man and may have even been a key driver in the evolution of our recent ancestors into modern man. [73]

The benefits of humming and singing have now been studied thoroughly and include:

- More happiness & less stress
 - Reduces brain activity in areas associated with depression [74]
 - Less stress and more relaxation [75], [76]. Boosts happiness naturally through increased levels of endorphins and oxytocin [77], [78], [79], [80]

Humming "turns off depression" by reducing brain activity in areas associated with depression





• Better sleep quality and increased levels of melatonin [81]

Better heart health

- Reduced heart rate and blood pressure [82],
 [83], [84]
- O Increased heart rate variability [85]
- O Decreased type 2 diabetes risk
- Clearer and healthier sinuses.
 - Improved sinus health and clearing of the nasal pathways [86], [87], [88]
- Increases nitric oxide (natural Viagra) levels by 1500%! [89]
 - The 1998 Nobel Prize in physiology or medicine was awarded for discovering nitric oxides' (NO) hugely important role in the

Humming can enhance physical and even sexual performance



cardiovascular system in regulating blood flow to the organs, and as a natural defense against infections. This Nobel prize winning research also explained why Viagra works. [90]

- Nitric oxide is a vasodilator, which means it relaxes your blood vessels' inner muscles, making the vessels widen, which causes increased blood flow and lower blood pressure. [91] This increased blood flow can provide practical benefits that you can use each and every day, including:
 - Improves sport & workout performance [92], [93], [94], [95]
 - Improves sexual health for males and helps treat erectile dysfunction [96], [97], [98], [99]

Humming releases oxytocin (the "love hormone")



ONE NERVE TO RULE THEM ALL: VAGUS

The vagus nerve is in control of the coordination of internal organ functions, including:

- Breathing rate
- Heart rate
- Digestion
- Weight
- Inflammatory responses
- Constriction & dilation of blood vessels. [100]

The vagus nerve is also called the 10th cranial nerve and it is the most complex as well as the longest of all the cranial nerves. [101] Vagus means "wanderer" in Greek because the vagus nerve meanders through the human body touching disparate corners, stretching its tendrils into your throat, stomach, heart, lungs, and brain. [102]



VAGUS NERVE & STRESS

The vagus nerve is the main nerve in the parasympathetic nervous system (PNS), which regulates the bodies' "rest and digest" response, discussed in Chapter 2. Many of the benefits received from proper breathing and meditation stem from the activation of the "rest and digest" response, which slows your heart rate, while increasing relaxation and focus simultaneously.

A strong vagus nerve is associated with a reduction in stress and more control over emotional states. In fact, stimulating the vagus nerve electrically is an FDA approved treatment for clinical depression resistant to medication. Through stimulating the vagus nerve, you can regulate hardwired stress and depression reduction mechanisms common to all humans. [103]

How to Stimulate the Vagus Nerve (without fancy medical machinery)

The larynx or "voice box" and vocal cords within it are directly connected to the vagus nerve. When you hum or sing you are mechanically stimulating your vagus nerve, the PNS, and your "rest and digest" response. [104]

Humming turns on the "anti-stress" response by stimulating the vagus nerve which is usually only possible with cutting-edge medical processes.



ADDING HUMMING OR SINGING TO YOUR BREATHING PRACTICE

How can you incorporate humming into your breathing practice?

- Hum or sing a tune
- Hum a single syllable like o, u, e, el or om while you breathe out
- Sing a hymn while you breathe out
- Sing a tune or syllable in the first part of your exhale then close your mouth and hum

To add humming to your breathing routine simply hum or sing while you breathe out. The easiest way for many people to get started is to keep the mouth closed, breathing in through the nose and breathing out through the nose while humming. Continue to use three stage breathing and take deep diaphragmatic breaths while humming and/ or singing.

Another option is to combine both singing and humming. This is the format that the traditional "om" chant uses. The first portion of the exhale is open mouth singing and the last portion is closed mouth humming.

Try to create a vibration in your upper lip, lower ears, and/ or chest to stimulate the vagus nerve and increase nitric oxide production. Following and amplifying these vibrations can be a great way to hone and expand your abilities. It can also be a very useful exercise for those that find it hard to meditate or focus just on breathing. The vibrations created from humming/ singing are more pronounced and easier felt than soft breathing. They can distract one from over-thinking and are generally easier to concentrate on than an automatic function like breathing.

OVERVIEW

Adding humming/singing to your breathing practice is easy. Simply hum, sing, or do a combination of the two as you breathe out. Humming or singing when exhaling can feel downright weird at first, but there are huge benefits to be had with only a small amount of effort and time required. Humming and singing naturally lengthen and deepen your breathing.

Humming leads to a massive boost in nitric oxide (Up to 15 times normal levels) that can:

- Help stave off illness
- Improve sexual & physical performance
- Improve heart health
- Improve sinus health

When you hum or sing you also mechanically stimulate your vagus nerve because it is connected to your voice box. Since your vagus nerve is a major component in emotional control, stress reduction, and internal organ function this stimulation can lead to:

- Reduced stress
- Increased happiness

Humming releases endorphins responsible for a natural "high" and pain relief



- Improved digestion
- Decreased inflammation (which is a major contributor to disease)

Try incorporating this secret ingredient into your breathing practice to create "Harmonic Breathing". You may notice that you are naturally calmer, and your breathing practice has become your favorite part of the day. You can further increase the already massive benefits you are receiving from deep nasal breathing without spending any additional time breathing by adding humming.

P.S. You may feel a bit self-conscience when humming but just think of all the benefits or try it alone first. If you're with someone else and can't stop giggling, that's okay too and completely normal at first (laughter is good for you).

30 Second Summary

Humming while breathing out releases endorphins, reduces brain activity in areas associated with depression, increases sleep quality and melatonin production, reduces heart rate and blood pressure, and reduces stress while increasing levels of relaxation. You may want to do it alone because it sounds weird to the uninitiated, but it's simple, easy, and has far reaching benefits.

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WEEK 4 PRACTICE: HARMONIC BREATHING

Your homework today and for the rest of the week is to practice Harmonic Breathing AKA adding humming or singing to your 3 Stage Breathing practice for at least one inhale and exhale each day this week and record it in your Week 4 Breathing Journal. Use the fillable PDF's or the paper versions of the journal, whichever is easier for you. In the Resources section below you can find breathing journals, cheat sheets, and guided audios that last from one to ten minutes letting you adapt to your changing schedule with the option of a deeper practice or a quick relaxation session (remember you can always practice without a guided audio as well for as long or short as you please). This week you're going to push far past what most people ever accomplish with breathwork and go to where only the monks have been. However, this practice transcends any one religion and literally touches upon the nerve that regulates your relaxation response. This practice can be profoundly relaxing and revitalizing. In fact, it can be so powerful that you may experience waves of bliss, or even transcendental experiences that are difficult to explain. For this practice you will certainly want to be sitting down somewhere and not doing anything else that needs your attention, especially operating machinery like a car or power tool. Give this practice a try even if it seems odd at first. If you feel self-conscious and can't find privacy, try going into nature or try it in your car while parked. Either way, try this practice for at least one week and then decide how you will incorporate breathing in your routine going forward.

Resources

- Check out the How to Perform Harmonic Breathing Cheat Sheet for using your 4th and most powerful breathing practice on the next page or here (digital link). —> <u>How to Perform Harmonic Breathing (Practice)</u>
- Record your daily breathing practice using the Week 4 Breathing Journal found below or here (digital link) —> <u>Breathing Journal Week 4 (Practice)</u>
- If you need more space for notes and comments record your daily breathing practice in the **Daily Breathing Journal** found below or here (digital link) > <u>Daily Breathing Journal (Practice)</u>



- Follow this 1-minute Guided Audio to teach you harmonic (vibration) breathing quickly. —> Harmonic Breathing for 1 minute (Practice) https://thriving.org/wp-content/uploads/2024/05/Harmonic-Breathing-1_03-1.mp3
- Follow this 3-minute Guided Audio to teach and immerse you in harmonic breathing quickly. —> Harmonic Breathing for 3 minutes (Practice) <u>https://thriving.org/wp-content/uploads/2024/05/Harmonic-Breathing-2_56-1.mp3</u>
- Follow this 10-minute Guided Audio to teach and immerse you deeply in harmonic breathing. —> Harmonic Breathing for 10 minutes (Practice) https://thriving.org/wp-content/uploads/2024/05/Harmonic-Breathing-9_38-1.mp3

Breathing Module: Full Workbook

HOW TO PERFORM HARMONIC BREATHING

STEP 1

Sit up or lay on your back with your back straight, shoulders back, and chin slightly up. Place one hand on your belly & one on your chest.

STEP 2

Inhale through your nose to first fill your lower lungs AKA your "belly", then your upper abdomen, then your chest, and neck until your lungs are completely filled exactly as in 3-stage breathing.

STEP 3

Hum, sing, or do a combination of both as you exhale. If you hum keep your mouth closed and hum a single syllable like "u". Hum deeply & slowly without straining. Vibrate your upper lip and lower ears.

If you sing try singing a single syllable or word with you mouth open. If you combine humming and singing try starting your exhale with singing then transitioning to closed mouth humming for the last half of your exhale.

Exhale the air from your lungs exactly as in 3-stage breathing starting with letting the hand on your upper chest fall then letting out the air in your middle lungs and finally feeling the hand on your stomach go down as your stomach sucks in completely.

How long should I practice Harmonic Breathing?

To Make an Impact-One breath cycle

Fast Improvement-5+ Minutes Uncanny Improventent-30+ Minutes

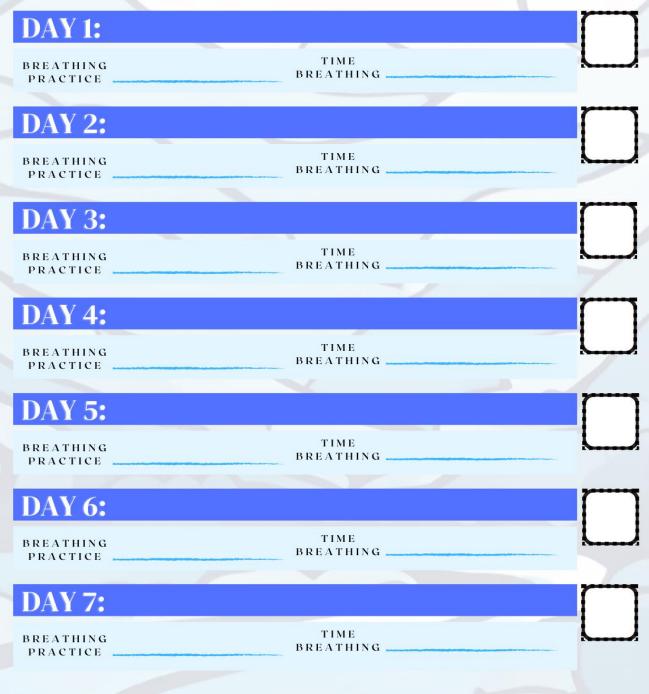


BREATHING JOURNAL WEEK 4

Goal Duration: How long will each daily breathing practice last?

Start Time:

At what time will you start your breathing practice each day?





Breathing Module: Full Workbook

BREATHING JOURNAL

DATE



DURATION

NOTES





CHAPTER 5: GOING FORWARD

HOW WILL BREATHING FIT INTO YOUR LIFE?

Congratulations, you have completed the month-long Breathing Module. You learned how to control your autonomic nervous system, which was previously thought impossible. You can stimulate your vagus nerve and thus your relaxation response freely and naturally which is currently being targeted by big pharma mechanically and at great cost. You can now activate powerful stress relieving pathways by using the simplest technique necessary for staying alive- breathing. You are improving your lung, heart, circulatory, and brain health simply by breathing in and out. You can use these techniques to calm the storm of anxiety, anger, stress, and whatever else life throws at you. You can also use them to prepare yourself for difficult situations so you will be in a better mental state to make intelligent decisions instead of making rash decisions in the moment. You've discovered the immense power of simple evidence-based techniques and now have them as part of your wellness toolkit. The only questions moving forward are:

- "How will you use these tools in your daily life? To prepare for something specific? As a daily measure to stay grounded or to improve total wellness and happiness?"
- "What are your breathing goals? How do you want to grow in your breathing skill level or is what you have enough?"
- "How will you incorporate breathing into your routine? With which technique(s)?"
- "How much time will you dedicate to breathing (or will you use tricks to utilize effectively no extra time from your schedule)?"
- Why is breathing important to you? What benefits (stress relief, longevity, improved happiness, etc.) are important to you? How will these benefits affect you and those closest to you?

CHAPTER 5 PRACTICE: BUILD A BREATHING HABIT FOR LIFE

First of all, thank yourself for the hard work you've put in and the new understanding you've gained of the inner workings of your body, ways to relieve stress, and

-



methods to influence your state of mind freely and naturally whenever you feel the desire to.

Now, take a moment to contemplate the above questions and fill out the **Breathing Journal: Going Forward** on the next page to figure out exactly how you will incorporate breathing into your life going forward so you can continue receiving the benefits of breathing in your life and even enhance them to far greater levels with practice.

As an added bonus, use the included **Habit Builder** exercise to make the Breathing habit or any other habit stick for life. This exercise incorporates proven habit science techniques to keep you on the right track for life.

To keep you thriving you will also find one month's worth of extra **Weekly Breathing** Journals to easily record your future progress.

If you already have a total wellness routine you can modify it to include your new Breathing practice under the Mental Health heading and track it going forward by using the included **Total Wellness Routine Customizer and Tracker**, which allows you to easily create a new wellness routine or customize an existing routine even if the habits are not part of the Thriving program. If you don't yet have a wellness routine think about creating a routine in as little as 10 seconds with the <u>Automatic</u> <u>Routine Creator</u>, by trying <u>7 Days to Thriving</u> for a quick crash course into total wellness routines or by enrolling in the <u>Year of Thriving</u> to make a complete life transformation by greatly improving your happiness as well as your mental, emotional, and physical health using a proven, evidence backed path, and doing so manageably, in small chunks.

Resources

- Figure out how and why you will add the Breathing habit to your to your life below or here (digital link with fillable PDF) ---> <u>Breathing Journal: Going</u> <u>Forward (Practice)</u>
- Add the Breathing habit to your existing routine or create a new wellness routine then track it using the Total Wellness Routine Creator & Tracker



worksheet below or here (digital link with fillable PDF) ---> <u>Total Wellness</u> <u>Routine Creator & Tracker (Practice)</u>

- Try the **Habit Builder** below to make your Breathing habit (or any habit) stick for life. ---> <u>Habit Builder Fillable (Practice)</u>
- Record your daily breathing practice going forward using the Weekly Breathing Journal found below. ---> Weekly Breathing Journal Fillable (Practice)

BREATHING JOURNAL GOING FORWARD

How will you continue your breathing habit? This is your space to reflect and decide how you will incorporate breathing into your life and routine going forward.

Favorite Breathing Practice(s): _

What is your favorite breathing practice? Why? Feel free to add more than one.

Breathing Goal(s):

Why do you have breathing practice? To what end? What purpose does it serve in your life?

Breathing Progression Speed:

Do you want to advance your skill in this habit? How quickly?

To Make an Impact-One breath cycle

Fast Improvement->20 Minutes Uncanny Improvement->60 Minutes

Note for advancement:

If you would like to grow your Breathing skill even further then coupling it with Mindfulness is recommended. You can find more information in the Mindfulness learning module.

Goal Duration: How long will each daily breathing practice last?

Start Time: At what time will you start your breathing practice each day?

After Completion of this Journal

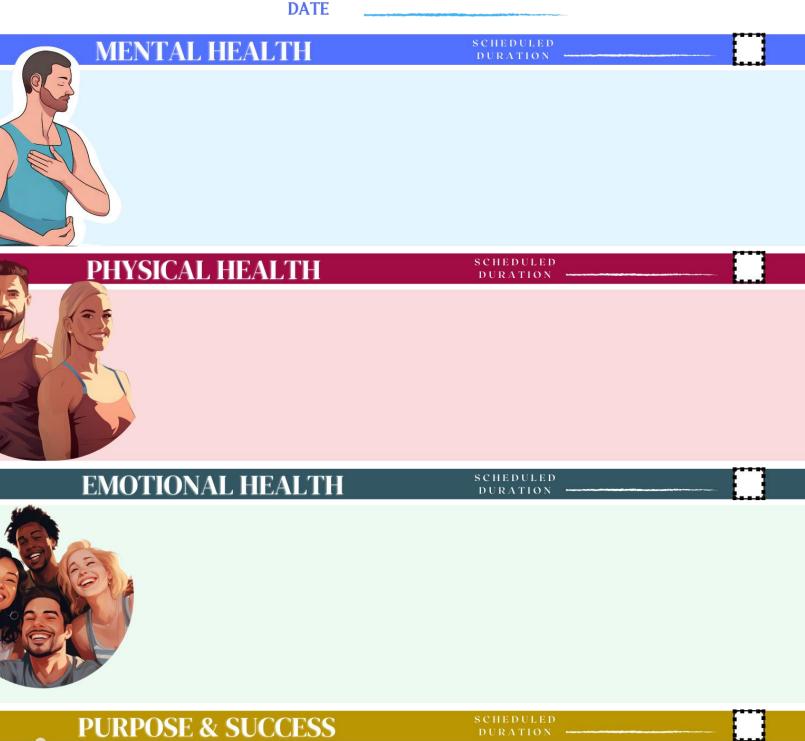
Modify your routine if necessary to add your new breathing habit. Be sure to include:

- The Breathing Practice(s): Which practice(s) you will perform
- Start Time: When you will start this habit in your routine.
- Goal Duration: How long you plan to practice the habit.



TOTAL WELLINESS ROUTINE

DATE





What you do every day determines who you are

MAKE IT REALISTIC

What habit do you want to start or stop?

What time will you start this habit?

What habit will this habit follow (chain)?

How long will you do this habit (duration)?

Days of the week will you do this habit?

SMTWTFS

MAKE IT OBVIOUS

Where will you perform this habit?

What visual cue will remind you of the habit? (e.g., post- it)

What audio cue will remind you of the habit? (e.g., alarm)

Will you use any other cues or reminders? (e.g., a scent)

MAKE IT EASIER

How can you make this habit simpler/ easier?

How can you make this habit inevitable?

What is an easy mini version of your habit?

What are likely challenges you will face?

What is your plan to deal with these challenges?

MAKE IT ENJOYABLE

What reward will you get after doing the habit?

How will you celebrate after doing the habit?

Who will keep you accountable for this habit?

How often & when will you contact your accountability buddy?

GET MOTIVATED

Which value does this habit reflect/ build?

Which goal does this habit build?

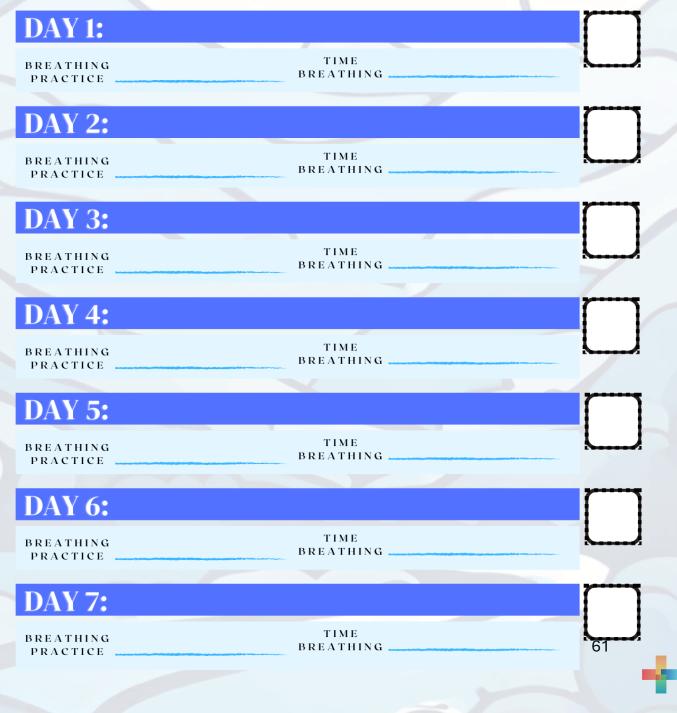
Your deepest motivation for this habit is?



Goal Duration: How long will each daily breathing practice last?

Start Time:

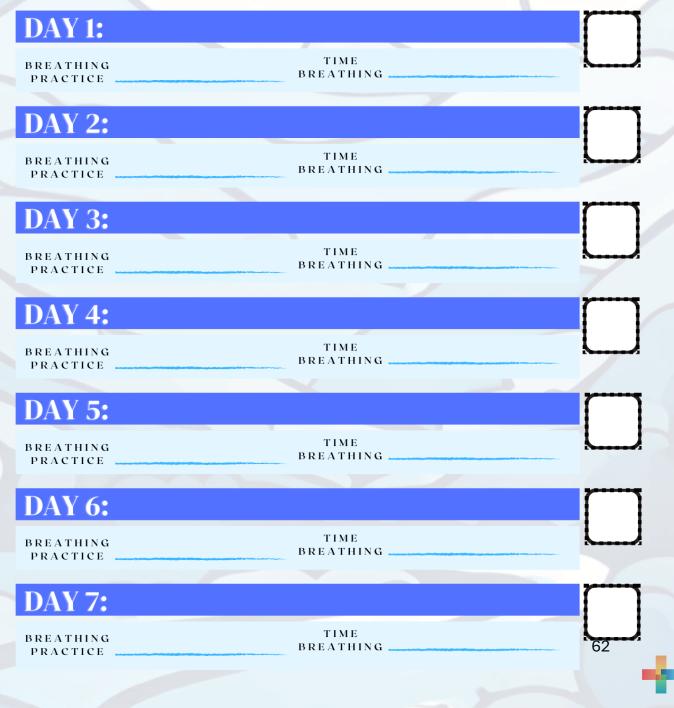
At what time will you start your breathing practice each day?



Goal Duration: How long will each daily breathing practice last?

Start Time:

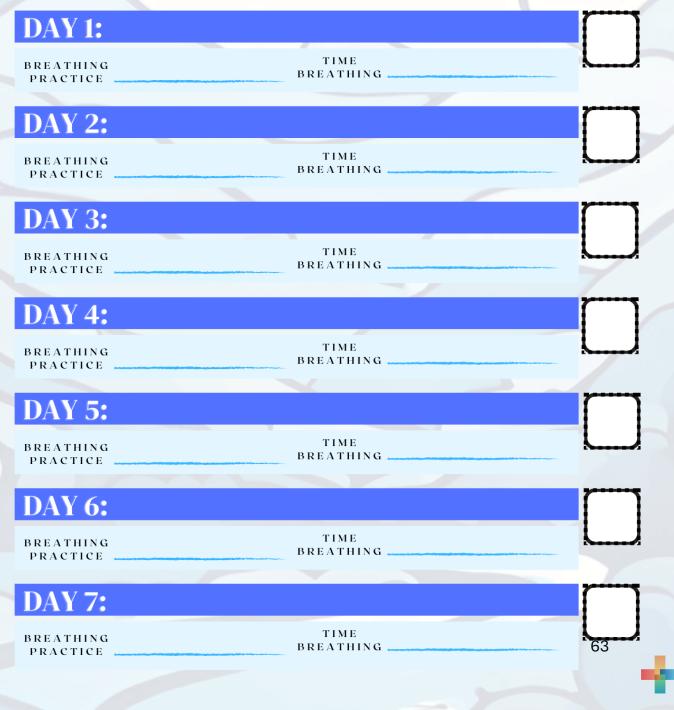
At what time will you start your breathing practice each day?



Goal Duration: How long will each daily breathing practice last?

Start Time:

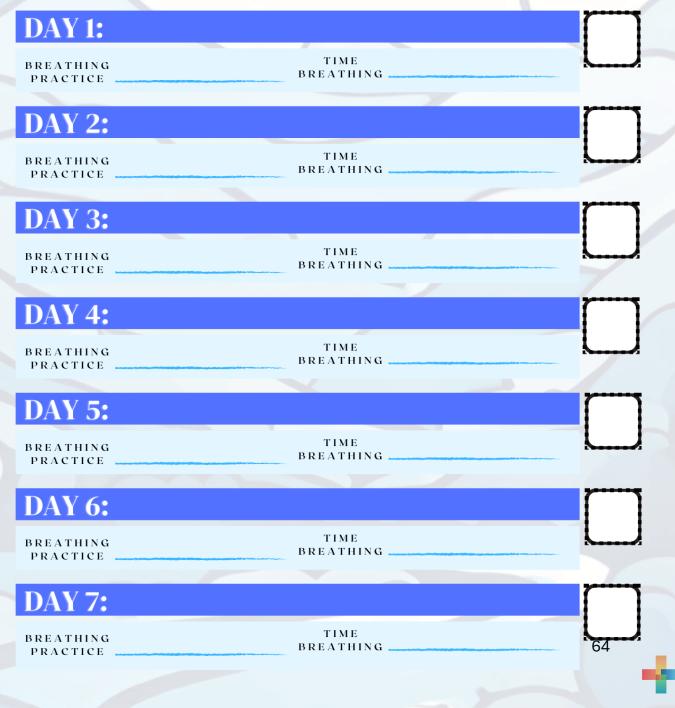
At what time will you start your breathing practice each day?



Goal Duration: How long will each daily breathing practice last?

Start Time:

At what time will you start your breathing practice each day?





SOURCES

- Vasiliev, V., Meredith, S.. (2006). Let every breath ...: Secrets of the russian breath masters. Vasiliev. ISBN: 978-0978104900. <u>https://www.amazon.com/Every-Breath-Secrets-Russian-Masters/dp/0978104900</u>
- 2. Breath and Breathing ." Encyclopedia of Religion. . Retrieved June 17, 2019 from Encyclopedia.com: https://www.encyclopedia.com/environment/encyclopedias-almanacs-transcripts-andmaps/breath-and-breathing
- Zaccaro, A., Piarulli, A., Laurino, M., Garbella, E., Menicucci, D., Neri, B., & Gemignani, A. (2018). How Breath-Control Can Change Your Life: A Systematic Review on Psycho-Physiological Correlates of Slow Breathing. Frontiers in human neuroscience, 12, 353. <u>https://doi.org/10.3389/fnhum.2018.00353</u>
- Brown, R. P., Gerbarg, P. L., & Muench, F. (2013). Breathing practices for treatment of psychiatric and stress-related medical conditions. The Psychiatric clinics of North America, 36(1), 121–140. <u>https://doi.org/10.1016/j.psc.2013.01.001</u>
- 5. Crelin E. S. (1976). Development of the upper respiratory system. Clinical symposia (Summit, N.J. : 1957), 28(3), 1–30. <u>https://pubmed.ncbi.nlm.nih.gov/1053096/</u>
- Guilleminault, C., Partinen, M., Hollman, K., Powell, N., & Stoohs, R. (1995). Familial aggregates in obstructive sleep apnea syndrome. Chest, 107(6), 1545–1551. <u>https://doi.org/10.1378/chest.107.6.1545</u>
- Okuro, R. T., Morcillo, A. M., Sakano, E., Schivinski, C. I., Ribeiro, M. ., & Ribeiro, J. D. (2011). Exercise capacity, respiratory mechanics and posture in mouth breathers. Brazilian journal of otorhinolaryngology, 77(5), 656–662. <u>https://doi.org/10.1590/s1808-86942011000500020</u>
- 8. Jefferson Y. (2010). Mouth breathing: adverse effects on facial growth, health, academics, and behavior. General dentistry, 58(1), 18–80. <u>https://pubmed.ncbi.nlm.nih.gov/20129889/</u>
- Pacheco, M. C., Casagrande, C. F., Teixeira, L. P., Finck, N. S., & de Araújo, M. T. (2015). Guidelines proposal for clinical recognition of mouth breathing children. Dental press journal of orthodontics, 20(4), 39–44. <u>https://doi.org/10.1590/2176-9451.20.4.039-044.oar</u>
- Katz, E. S., Mitchell, R. B., & D'Ambrosio, C. M. (2012). Obstructive sleep apnea in infants. American journal of respiratory and critical care medicine, 185(8), 805–816. <u>https://doi.org/10.1164/rccm.201108-1455Cl</u>
- Felcar, J. M., Bueno, I. R., Massan, A. C., Torezan, R. P., & Cardoso, J. R. (2010). Prevalência de respiradores bucais em crianças de idade escolar [Prevalence of mouth breathing in children from an elementary school]. Ciencia & saude coletiva, 15(2), 437–444. <u>https://doi.org/10.1590/S1413-81232010000200020</u>

65



- 12. Mummolo, S., Nota, A., Caruso, S., Quinzi, V., Marchetti, E., & Marzo, G. (2018). Salivary Markers and Microbial Flora in Mouth Breathing Late Adolescents. BioMed research international, 2018, 8687608. https://doi.org/10.1155/2018/8687608
- Genef Caroline Andrade Ribeiro, Isadora Diniz dos Santos, Ana Claudia Nascimento Santos, Luiz Renato Paranhos, Carla Patrícia Hernandez Alves Ribeiro César, Influence of the breathing pattern on the learning process: a systematic review of literature, Brazilian Journal of Otorhinolaryngology, Volume 82, Issue 4, 2016, Pages 466-478, ISSN 1808-8694, <u>https://doi.org/10.1016/j.bjorl.2015.08.026</u>
- Academy of General Dentistry. (2010, April 6). Mouth breathing can cause major health problems. ScienceDaily. Retrieved June 9, 2021 from www.sciencedaily.com/releases/2010/04/100406125714.htm
- Leng, Y., McEvoy, C. T., Allen, I. E., & Yaffe, K. (2017). Association of Sleep-Disordered Breathing With Cognitive Function and Risk of Cognitive Impairment: A Systematic Review and Meta-analysis. JAMA neurology, 74(10), 1237–1245. <u>https://doi.org/10.1001/jamaneurol.2017.2180</u>
- 16. Fayez Saleh and Wisam Al Hamadi (November 5th 2018). Orthosurgical Correction of Severe Vertical Maxillary Excess: Gummy Smile, Current Approaches in Orthodontics, Belma Işık Aslan and Fatma Deniz Uzuner, IntechOpen, DOI: 10.5772/intechopen.80384. Available from: <u>https://www.intechopen.com/books/current-approaches-in-orthodontics/orthosurgical-correction-of-severe-vertical-maxillary-excess-gummy-smile</u>
- 17. Fan, C., Guo, L., Gu, H., Huo, Y., & Lin, H. (2020). Alterations in Oral-Nasal-Pharyngeal Microbiota and Salivary Proteins in Mouth-Breathing Children. Frontiers in microbiology, 11, 575550. https://doi.org/10.3389/fmicb.2020.575550
- Won, E., & Kim, Y. K. (2016). Stress, the Autonomic Nervous System, and the Immune-kynurenine Pathway in the Etiology of Depression. Current neuropharmacology, 14(7), 665–673. <u>https://doi.org/10.2174/1570159x14666151208113006</u>
- 19. Yaribeygi, H., Panahi, Y., Sahraei, H., Johnston, T. P., & Sahebkar, A. (2017). The impact of stress on body function: A review. EXCLI journal, 16, 1057–1072. <u>https://doi.org/10.17179/excli2017-480</u>
- McKeown, P., O'Connor-Reina, C., & Plaza, G. (2021). Breathing Re-Education and Phenotypes of Sleep Apnea: A Review. Journal of clinical medicine, 10(3), 471. <u>https://doi.org/10.3390/jcm10030471</u>
- Brown, R. P., & Gerbarg, P. L. (2005). Sudarshan Kriya Yogic breathing in the treatment of stress, anxiety, and depression. Part II--clinical applications and guidelines. Journal of alternative and complementary medicine (New York, N.Y.), 11(4), 711–717. <u>https://doi.org/10.1089/acm.2005.11.711</u>



- 22. Critchley, H. D., Nicotra, A., Chiesa, P. A., Nagai, Y., Gray, M. A., Minati, L., & Bernardi, L. (2015). Slow breathing and hypoxic challenge: cardiorespiratory consequences and their central neural substrates. PloS one, 10(5), e0127082. <u>https://doi.org/10.1371/journal.pone.0127082</u>
- 23. Telles, S., Naveen, K. V., & Dash, M. (2007). Yoga reduces symptoms of distress in tsunami survivors in the andaman islands. Evidence-based complementary and alternative medicine : eCAM, 4(4), 503–509. <u>https://doi.org/10.1093/ecam/nem069</u>
- 24. Ma, X., Yue, Z. Q., Gong, Z. Q., Zhang, H., Duan, N. Y., Shi, Y. T., Wei, G. X., & Li, Y. F. (2017). The Effect of Diaphragmatic Breathing on Attention, Negative Affect and Stress in Healthy Adults. Frontiers in psychology, 8, 874. <u>https://doi.org/10.3389/fpsyg.2017.0087</u>
- 25. World Health Organization. Guidelines for the management of conditions specifically related to stress [Internet]. Geneva: 2013. Available from: http://apps.who.int/iris/bitstream/10665/85119/1/9789241505406_eng.pdf?ua=1
- 26. Yu, X., Fumoto, M., Nakatani, Y., Sekiyama, T., Kikuchi, H., Seki, Y., Sato-Suzuki, I., & Arita, H. (2011). Activation of the anterior prefrontal cortex and serotonergic system is associated with improvements in mood and EEG changes induced by Zen meditation practice in novices. International journal of psychophysiology : official journal of the International Organization of Psychophysiology, 80(2), 103– 111. <u>https://doi.org/10.1016/j.ijpsycho.2011.02.004</u>
- Lehrer, P., Kaur, K., Sharma, A., Shah, K., Huseby, R., Bhavsar, J., & Zhang, Y. (2020). Heart Rate Variability Biofeedback Improves Emotional and Physical Health and Performance: A Systematic Review and Meta Analysis. Applied psychophysiology and biofeedback, 45(3), 109–129. <u>https://doi.org/10.1007/s10484-020-09466-z</u>
- 28. The rhythm of memory: how breathing shapes memory function, Detlef H. Heck, Robert Kozma, and Leslie M. Kay, Journal of Neurophysiology 2019 122:2, 563-571. <u>https://doi.org/10.1152/jn.00200.2019</u>
- Zelano, C., Jiang, H., Zhou, G., Arora, N., Schuele, S., Rosenow, J., & Gottfried, J. A. (2016). Nasal Respiration Entrains Human Limbic Oscillations and Modulates Cognitive Function. The Journal of neuroscience : the official journal of the Society for Neuroscience, 36(49), 12448–12467. <u>https://doi.org/10.1523/JNEUROSCI.2586-16.2016</u>
- Gothe, N. P., & McAuley, E. (2015). Yoga and Cognition: A Meta-Analysis of Chronic and Acute Effects. Psychosomatic medicine, 77(7), 784–797. <u>https://doi.org/10.1097/PSY.00000000000218</u>
- Salyers, M. P., Hudson, C., Morse, G., Rollins, A. L., Monroe-DeVita, M., Wilson, C., & Freeland, L. (2011). BREATHE: a pilot study of a one-day retreat to reduce burnout among mental health professionals. Psychiatric services (Washington, D.C.), 62(2), 214–217. https://doi.org/10.1176/ps.62.2.pss6202_0214
- 32. Yu, W. J., & Song, J. E. (2010). Journal of Korean Academy of Nursing, 40(3), 442–452. https://doi.org/10.4040/jkan.2010.40.3.442



- Siepmann, M., Aykac, V., Unterdörfer, J., Petrowski, K., & Mueck-Weymann, M. (2008). A pilot study on the effects of heart rate variability biofeedback in patients with depression and in healthy subjects. Applied psychophysiology and biofeedback, 33(4), 195–201. https://doi.org/10.1007/s10484-008-9064-z
- Katzman, M. A., Vermani, M., Gerbarg, P. L., Brown, R. P., Iorio, C., Davis, M., Cameron, C., & Tsirgielis, D. (2012). A multicomponent yoga-based, breath intervention program as an adjunctive treatment in patients suffering from generalized anxiety disorder with or without comorbidities. International journal of yoga, 5(1), 57–65. <u>https://doi.org/10.4103/0973-6131.91716</u>
- Granath, J., Ingvarsson, S., von Thiele, U., & Lundberg, U. (2006). Stress management: a randomized study of cognitive behavioural therapy and yoga. Cognitive behaviour therapy, 35(1), 3–10. <u>https://doi.org/10.1080/16506070500401292</u>
- Dhawan, A., Chopra, A., Jain, R., Yadav, D., & Vedamurthachar (2015). Effectiveness of yogic breathing intervention on quality of life of opioid dependent users. International journal of yoga, 8(2), 144–147. <u>https://doi.org/10.4103/0973-6131.154075</u>
- Fumoto, M., Sato-Suzuki, I., Seki, Y., Mohri, Y., & Arita, H. (2004). Appearance of high-frequency alpha band with disappearance of low-frequency alpha band in EEG is produced during voluntary abdominal breathing in an eyes-closed condition. Neuroscience research, 50(3), 307–317. <u>https://doi.org/10.1016/j.neures.2004.08.005</u>
- Kozasa, E. H., Santos, R. F., Rueda, A. D., Benedito-Silva, A. A., De Ornellas, F. L., & Leite, J. R. (2008). Evaluation of Siddha Samadhi Yoga for anxiety and depression symptoms: a preliminary study. Psychological reports, 103(1), 271–274. <u>https://doi.org/10.2466/pr0.103.1.271-274</u>
- Busch, V., Magerl, W., Kern, U., Haas, J., Hajak, G., & Eichhammer, P. (2012). The effect of deep and slow breathing on pain perception, autonomic activity, and mood processing--an experimental study. Pain medicine (Malden, Mass.), 13(2), 215–228. <u>https://doi.org/10.1111/j.1526-4637.2011.01243.x</u>
- 40. Jerath, R., Beveridge, C., & Barnes, V. A. (2019). Self-Regulation of Breathing as an Adjunctive Treatment of Insomnia. Frontiers in psychiatry, 9, 780. <u>https://doi.org/10.3389/fpsyt.2018.00780</u>
- Laborde, S., Hosang, T., Mosley, E., & Dosseville, F. (2019). Influence of a 30-Day Slow-Paced Breathing Intervention Compared to Social Media Use on Subjective Sleep Quality and Cardiac Vagal Activity. Journal of clinical medicine, 8(2), 193. <u>https://doi.org/10.3390/jcm8020193</u>
- Zucker, T. L., Samuelson, K. W., Muench, F., Greenberg, M. A., & Gevirtz, R. N. (2009). The effects of respiratory sinus arrhythmia biofeedback on heart rate variability and posttraumatic stress disorder symptoms: a pilot study. Applied psychophysiology and biofeedback, 34(2), 135–143. <u>https://doi.org/10.1007/s10484-009-9085-2</u>



- Babatunde Aideyan, Gina C. Martin, Eric T. Beeson; A Practitioner's Guide to Breathwork in Clinical Mental Health Counseling. Journal of Mental Health Counseling 1 January 2020; 42 (1): 78–94. <u>https://doi.org/10.17744/mehc.42.1.06</u>
- 44. Gerbarg, Patricia L., and Richard P. Brown, 'Breathing Practices for Mental Health and Aging', in Helen Lavretsky, Martha Sajatovic, and Charles Reynolds III (eds), Complementary and Integrative Therapies for Mental Health and Aging (New York, 2015; online edn, Oxford Academic, 1 Mar. 2016), https://doi.org/10.1093/med/9780199380862.003.0016
- 45. Brown, R. P., Gerbarg, P. L., & Muench, F. (2013). Breathing practices for treatment of psychiatric and stress-related medical conditions. The Psychiatric clinics of North America, 36(1), 121–140. https://doi.org/10.1016/j.psc.2013.01.001
- 46. Biologydictionary.net, 24 Apr. 2019, https://biologydictionary.net/respiratory-system-fun-facts/
- 47. The American Psychological Association (APA), 2020 Stress in America report. https://www.apa.org/news/press/releases/stress/2020/sia-mental-health-crisis.pdf
- Lundberg, J. O., Settergren, G., Gelinder, S., Lundberg, J. M., Alving, K., & Weitzberg, E. (1996).
 Inhalation of nasally derived nitric oxide modulates pulmonary function in humans. Acta physiologica Scandinavica, 158(4), 343–347. <u>https://doi.org/10.1046/j.1365-201X.1996.557321000.x</u>
- 49. Törnberg, D. C., Marteus, H., Schedin, U., Alving, K., Lundberg, J. O., & Weitzberg, E. (2002). Nasal and oral contribution to inhaled and exhaled nitric oxide: a study in tracheotomized patients. The European respiratory journal, 19(5), 859–864. <u>https://doi.org/10.1183/09031936.02.00273502</u>
- 50. Reiss, C. S., & Komatsu, T. (1998). Does nitric oxide play a critical role in viral infections?. Journal of virology, 72(6), 4547–4551. https://doi.org/10.1128/JVI.72.6.4547-4551.1998
- 51. Sanders, S. P., Siekierski, E. S., Porter, J. D., Richards, S. M., & Proud, D. (1998). Nitric oxide inhibits rhinovirus-induced cytokine production and viral replication in a human respiratory epithelial cell line. Journal of virology, 72(2), 934–942. <u>https://doi.org/10.1128/JVI.72.2.934-942.1998</u>
- Högman, M., Frostell, C. G., Hedenström, H., & Hedenstierna, G. (1993). Inhalation of nitric oxide modulates adult human bronchial tone. The American review of respiratory disease, 148(6 Pt 1), 1474–1478. <u>https://doi.org/10.1164/ajrccm/148.6_Pt_1.1474</u>
- 53. Frostell CG, Fratacco M-D, Wain JC, Zapol WM. Inhaled nitric oxide: a selective pulmonary vasodilator reversing hypoxic pulmonary vasoconstriction. Circulation. 1991;83:2038-2047. https://doi.org/10.1161/01.CIR.83.6.2038



- 54. Jefferson Y. (2010). Mouth breathing: adverse effects on facial growth, health, academics, and behavior. General dentistry, 58(1), 18–80. <u>https://pubmed.ncbi.nlm.nih.gov/20129889/</u>
- 55. Dallam, G., & Kies, B. (2020). The Effect of Nasal Breathing Versus Oral and Oronasal Breathing During Exercise: A Review. Journal of Sports Research, 7(1), 1–10. <u>http://dx.doi.org/10.18488/journal.90.2020.71.1.10</u>
- 56. Ribeiro, G. C., Dos Santos, I. D., Santos, A. C., Paranhos, L. R., & César, C. P. (2016). Influence of the breathing pattern on the learning process: a systematic review of literature. Brazilian journal of otorhinolaryngology, 82(4), 466–478. <u>https://doi.org/10.1016/j.bjorl.2015.08.026</u>
- Arshamian, A., Iravani, B., Majid, A., & Lundström, J. N. (2018). Respiration Modulates Olfactory Memory Consolidation in Humans. The Journal of neuroscience : the official journal of the Society for Neuroscience, 38(48), 10286–10294. <u>https://doi.org/10.1523/JNEUROSCI.3360-17.2018</u>
- 58. Thakur, G. S., Kulkarni, D. D., & Pant, G. (2011). Immediate effect of nostril breathing on memory performance. Indian journal of physiology and pharmacology, 55(1), 89–93. <u>https://pubmed.ncbi.nlm.nih.gov/22315816/</u>
- Martel, J., Ko, Y. F., Young, J. D., & Ojcius, D. M. (2020). Could nasal nitric oxide help to mitigate the severity of COVID-19?. Microbes and infection, 22(4-5), 168–171. <u>https://doi.org/10.1016/j.micinf.2020.05.002</u>
- Travis, F., Blasdell, K., Liptak, R., Zisman, S., Daley, K., & Douillard, J. (1996). Invincible Athletics program: aerobic exercise and performance without strain. The International journal of neuroscience, 85(3-4), 301–308. <u>https://doi.org/10.3109/0020745960898669</u>
- Dallam, G., & Kies, B. (2020). The Effect of Nasal Breathing Versus Oral and Oronasal Breathing During Exercise: A Review. Journal of Sports Research, 7(1), 1–10. <u>http://dx.doi.org/10.18488/journal.90.2020.71.1.10</u>
- 62. Gunhan, K., Zeren, F., Uz, U., Gumus, B., & Unlu, H. (2011). Impact of nasal polyposis on erectile dysfunction. American journal of rhinology & allergy, 25(2), 112–115. https://doi.org/10.2500/ajra.2011.25.3585
- 63. De Couck, M., Caers, R., Musch, L., Fliegauf, J., Giangreco, A., & Gidron, Y. (2019). How breathing can help you make better decisions: Two studies on the effects of breathing patterns on heart rate variability and decision-making in business cases. International journal of psychophysiology : official



journal of the International Organization of Psychophysiology, 139, 1–9. https://doi.org/10.1016/j.ijpsycho.2019.02.011

- Bernardi, L., Gabutti, A., Porta, C., & Spicuzza, L. (2001). Slow breathing reduces chemoreflex response to hypoxia and hypercapnia, and increases baroreflex sensitivity. Journal of hypertension, 19(12), 2221–2229. <u>https://doi.org/10.1097/00004872-200112000-00016</u>
- Critchley, H. D., Nicotra, A., Chiesa, P. A., Nagai, Y., Gray, M. A., Minati, L., & Bernardi, L. (2015). Slow breathing and hypoxic challenge: cardiorespiratory consequences and their central neural substrates. PloS one, 10(5), e0127082. <u>https://doi.org/10.1371/journal.pone.0127082</u>
- 66. I. Shaw, B.S. Shaw, G.A. Brown, Role of diaphragmatic breathing and aerobic exercise in improving pulmonary function and maximal oxygen consumption in asthmatics, Science & Sports, Volume 25, Issue 3, 2010, Pages 139-145, ISSN 0765-1597, <u>https://doi.org/10.1016/j.scispo.2009.10.003</u>.
- Bhatia, M., Kumar, A., Kumar, N., Pandey, R. M., Kochupillai, V., EEG study, BAER study, & P300 study (2003). Electrophysiologic evaluation of Sudarshan Kriya: an EEG, BAER, P300 study. Indian journal of physiology and pharmacology, 47(2), 157–163. <u>https://pubmed.ncbi.nlm.nih.gov/15255618/</u>
- Critchley, H. D., Nicotra, A., Chiesa, P. A., Nagai, Y., Gray, M. A., Minati, L., & Bernardi, L. (2015). Slow breathing and hypoxic challenge: cardiorespiratory consequences and their central neural substrates. PloS one, 10(5), e0127082. <u>https://doi.org/10.1371/journal.pone.0127082</u>
- Sowder, E., Gevirtz, R., Shapiro, W., & Ebert, C. (2010). Restoration of vagal tone: a possible mechanism for functional abdominal pain. Applied psychophysiology and biofeedback, 35(3), 199– 206. <u>https://doi.org/10.1007/s10484-010-9128-8</u>
- 70. Vlieger, A. M., Blink, M., Tromp, E., & Benninga, M. A. (2008). Use of complementary and alternative medicine by pediatric patients with functional and organic gastrointestinal diseases: results from a multicenter survey. Pediatrics, 122(2), e446–e451. <u>https://doi.org/10.1542/peds.2008-0266</u>
- 71. Busch, V., Magerl, W., Kern, U., Haas, J., Hajak, G., & Eichhammer, P. (2012). The effect of deep and slow breathing on pain perception, autonomic activity, and mood processing--an experimental study. Pain medicine (Malden, Mass.), 13(2), 215–228. <u>https://doi.org/10.1111/j.1526-</u> <u>4637.2011.01243.x</u>



- 72. Ma, X., Yue, Z. Q., Gong, Z. Q., Zhang, H., Duan, N. Y., Shi, Y. T., Wei, G. X., & Li, Y. F. (2017). The Effect of Diaphragmatic Breathing on Attention, Negative Affect and Stress in Healthy Adults. Frontiers in psychology, 8, 874. <u>https://doi.org/10.3389/fpsyg.2017.00874</u>
- 73. Dunbar, R.I.M. Group size, vocal grooming and the origins of language. Psychon Bull Rev 24, 209–212 (2017). https://doi.org/10.3758/s13423-016-1122-6
- 74. Kalyani, B. G., Venkatasubramanian, G., Arasappa, R., Rao, N. P., Kalmady, S. V., Behere, R. V., Rao, H., Vasudev, M. K., & Gangadhar, B. N. (2011). Neurohemodynamic correlates of 'OM' chanting: A pilot functional magnetic resonance imaging study. International journal of yoga, 4(1), 3–6. https://doi.org/10.4103/0973-6131.78171
- 75. Telles, S., Nagarathna, R., & Nagendra, H. R. (1995). Autonomic changes during "OM" meditation. Indian journal of physiology and pharmacology, 39(4), 418– 420.<u>https://pubmed.ncbi.nlm.nih.gov/8582759/</u>
- 76. Harne, B. P., Tahseen, A. A., Hiwale, A. S., & Dhekekar, R. S. (2019). Survey on Om meditation: Its effects on the human body and Om meditation as a tool for stress management. Psychological Thought, 12(1), 1-11. <u>http://dx.doi.org/10.5964/psyct.v12i1.275</u>
- 77. Weinstein, D., Launay, J., Pearce, E., Dunbar, R. I., & Stewart, L. (2016). Group music performance causes elevated pain thresholds and social bonding in small and large groups of singers. Evolution and human behavior : official journal of the Human Behavior and Evolution Society, 37(2), 152–158. https://doi.org/10.1016/j.evolhumbehav.2015.10.002
- 78. Pearce, E., Launay, J., & Dunbar, R. I. (2015). The ice-breaker effect: singing mediates fast social bonding. Royal Society open science, 2(10), 150221. <u>https://doi.org/10.1098/rsos.150221</u>
- 79. Dunbar, R.I.M. Group size, vocal grooming and the origins of language. Psychon Bull Rev 24, 209–212 (2017). https://doi.org/10.3758/s13423-016-1122-6
- Grape, C., Sandgren, M., Hansson, L. O., Ericson, M., & Theorell, T. (2003). Does singing promote well-being?: An empirical study of professional and amateur singers during a singing lesson. Integrative physiological and behavioral science : the official journal of the Pavlovian Society, 38(1), 65–74. <u>https://doi.org/10.1007/BF02734261</u>
- Lund, H.N., Pedersen, I.N., Johnsen, S.P. et al. Music to improve sleep quality in adults with depression-related insomnia (MUSTAFI): study protocol for a randomized controlled trial. Trials 21, 305 (2020). <u>https://doi.org/10.1186/s13063-020-04247-9</u>
- 82. Kapil, V., Khambata, R. S., Robertson, A., Caulfield, M. J., & Ahluwalia, A. (2015). Dietary nitrate provides sustained blood pressure lowering in hypertensive patients: a randomized, phase 2,



double-blind, placebo-controlled study. Hypertension (Dallas, Tex. : 1979), 65(2), 320–327. https://doi.org/10.1161/HYPERTENSIONAHA.114.04675

- Romero, M. J., Platt, D. H., Caldwell, R. B., & Caldwell, R. W. (2006). Therapeutic use of citrulline in cardiovascular disease. Cardiovascular drug reviews, 24(3-4), 275–290. <u>https://doi.org/10.1111/j.1527-3466.2006.00275.x</u>
- Jovanovski, E., Bosco, L., Khan, K., Au-Yeung, F., Ho, H., Zurbau, A., Jenkins, A. L., & Vuksan, V. (2015). Effect of Spinach, a High Dietary Nitrate Source, on Arterial Stiffness and Related Hemodynamic Measures: A Randomized, Controlled Trial in Healthy Adults. Clinical nutrition research, 4(3), 160–167. <u>https://doi.org/10.7762/cnr.2015.4.3.160</u>
- 85. Vickhoff, B., Malmgren, H., Aström, R., Nyberg, G., Ekström, S. R., Engwall, M., Snygg, J., Nilsson, M., & Jörnsten, R. (2013). Music structure determines heart rate variability of singers. Frontiers in psychology, 4, 334. <u>https://doi.org/10.3389/fpsyg.2013.00334</u>
- 86. Eby G. A. (2006). Strong humming for one hour daily to terminate chronic rhinosinusitis in four days: a case report and hypothesis for action by stimulation of endogenous nasal nitric oxide production. Medical hypotheses, 66(4), 851–854. <u>https://doi.org/10.1016/j.mehy.2005.11.035</u>
- Maniscalco, M., Weitzberg, E., Sundberg, J., Sofia, M., & Lundberg, J. O. (2003). Assessment of nasal and sinus nitric oxide output using single-breath humming exhalations. The European respiratory journal, 22(2), 323–329. <u>https://doi.org/10.1183/09031936.03.00017903</u>
- Maniscalco, M., Pelaia, G., & Sofia, M. (2013). Exhaled nasal nitric oxide during humming: potential clinical tool in sinonasal disease?. Biomarkers in medicine, 7(2), 261–266. https://doi.org/10.2217/bmm.13.11
- Weitzberg, E., & Lundberg, J. O. (2002). Humming greatly increases nasal nitric oxide. American journal of respiratory and critical care medicine, 166(2), 144–145. <u>https://doi.org/10.1164/rccm.200202-138BC</u>
- The Nobel Prize in Physiology or Medicine 1998. NobelPrize.org. Nobel Prize Outreach AB 2021. Mon.
 26 Jul 2021. https://www.nobelprize.org/prizes/medicine/1998/summary/
- 91. Wang, T., El Kebir, D., & Blaise, G. (2003). Inhaled nitric oxide in 2003: a review of its mechanisms of action. Canadian journal of anaesthesia = Journal canadian d'anesthesie, 50(8), 839–846. https://doi.org/10.1007/BF03019384
- 92. Romero, M. J., Platt, D. H., Caldwell, R. B., & Caldwell, R. W. (2006). Therapeutic use of citrulline in cardiovascular disease. Cardiovascular drug reviews, 24(3-4), 275–290. <u>https://doi.org/10.1111/j.1527-3466.2006.00275.x</u>



- 93. Hoon, M. W., Johnson, N. A., Chapman, P. G., & Burke, L. M. (2013). The effect of nitrate supplementation on exercise performance in healthy individuals: a systematic review and metaanalysis. International journal of sport nutrition and exercise metabolism, 23(5), 522–532. https://doi.org/10.1123/ijsnem.23.5.522
- Lorenzo Calvo, J., Alorda-Capo, F., Pareja-Galeano, H., & Jiménez, S. L. (2020). Influence of Nitrate Supplementation on Endurance Cyclic Sports Performance: A Systematic Review. Nutrients, 12(6), 1796. <u>https://doi.org/10.3390/nu12061796</u>
- 95. Hlinský, T., Kumstát, M., & Vajda, P. (2020). Effects of Dietary Nitrates on Time Trial Performance in Athletes with Different Training Status: Systematic Review. Nutrients, 12(9), 2734. <u>https://doi.org/10.3390/nu12092734</u>
- 96. Toda, N., Ayajiki, K., & Okamura, T. (2005). Nitric oxide and penile erectile function. Pharmacology & therapeutics, 106(2), 233–266. <u>https://doi.org/10.1016/j.pharmthera.2004.11.011</u>
- 97. Burnett A. L. (2004). Novel nitric oxide signaling mechanisms regulate the erectile response. International journal of impotence research, 16 Suppl 1, S15–S19. <u>https://doi.org/10.1038/sj.ijir.3901209</u>
- 98. Barassi, A., Corsi Romanelli, M. M., Pezzilli, R., Damele, C. A., Vaccalluzzo, L., Goi, G., Papini, N., Colpi, G. M., Massaccesi, L., & Melzi d'Eril, G. V. (2017). Levels of l-arginine and l-citrulline in patients with erectile dysfunction of different etiology. Andrology, 5(2), 256–261. <u>https://doi.org/10.1111/andr.12293</u>
- Cormio, L., De Siati, M., Lorusso, F., Selvaggio, O., Mirabella, L., Sanguedolce, F., & Carrieri, G. (2011). Oral L-citrulline supplementation improves erection hardness in men with mild erectile dysfunction. Urology, 77(1), 119–122. <u>https://doi.org/10.1016/j.urology.2010.08.028</u>
- 100. Babic, T., & Browning, K. N. (2014). The role of vagal neurocircuits in the regulation of nausea and vomiting. European journal of pharmacology, 722, 38–47. <u>https://doi.org/10.1016/j.ejphar.2013.08.047</u>
- 101. Britannica, T. Editors of Encyclopaedia (2020, March 13). Vagus nerve. Encyclopedia Britannica. <u>https://www.britannica.com/science/vagus-nerve</u>
- Rosas-Ballina, M., Olofsson, P. S., Ochani, M., Valdés-Ferrer, S. I., Levine, Y. A., Reardon, C., Tusche, M. W., Pavlov, V. A., Andersson, U., Chavan, S., Mak, T. W., & Tracey, K. J. (2011). Acetylcholine-synthesizing T cells relay neural signals in a vagus nerve circuit. Science (New York, N.Y.), 334(6052), 98–101. <u>https://doi.org/10.1126/science.1209985</u>

103. Yuan, H., & Silberstein, S. D. (2016). Vagus Nerve and Vagus Nerve Stimulation, a Comprehensive Review: Part II. Headache, 56(2), 259–266.

https://doi.org/10.1111/head.12650

104. Breit, S., Kupferberg, A., Rogler, G., & Hasler, G. (2018). Vagus Nerve as Modulator of the Brain-Gut Axis in Psychiatric and Inflammatory Disorders. Frontiers in psychiatry, 9, 44. https://doi.org/10.3389/fpsyt.2018.00044