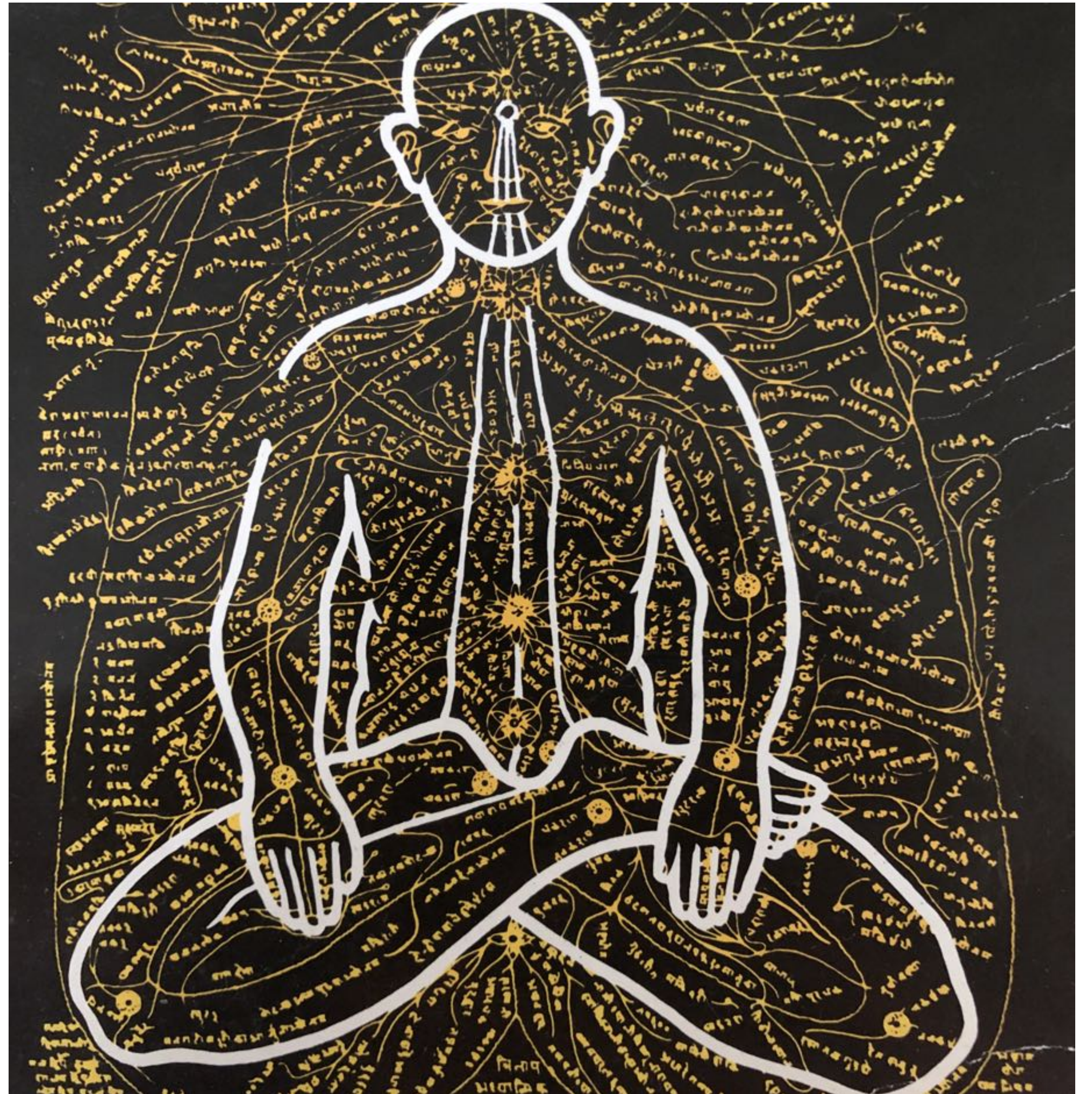


Beginners Pranayama

November 2024

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ॐ ॐ ॐ

श्री गुरुभ्यो नमः हरिः ॐ

Om Om Om

Sri Gurubhyo Namah Harih Om

Salutations to the Gurus!

ॐ सह नाववतु ।
सह नौ भुनक्तु ।
सह वीर्यं करवावहै ।
तेजस्वि नावधीतमस्तु मा विद्विषावहै ।
ॐ शान्तिः शान्तिः शान्तिः ॥

oṃ saha nāvavatu saha nau bhunaktu
saha vīryaṃ karavāvahai
tejasvi nāvadhītam astu mā vidviṣāvahai
oṃ śāntiḥ śāntiḥ śāntiḥ

May that Brahman protect us together. May it nourish us together.
May we both gain great vitality. May our learning be brilliant.
May we never argue. Om peace, peace, peace.

BREATH

Breathing is fundamental to life.

1. We enter the world with a breath.
2. Continues automatically until our last breath. Thus we do not think about it.
3. It constantly provides the cells with O₂, moderates stress response and maintains homeostasis.
4. When something goes wrong we become aware of our breathing habits.
5. Poor breathing habits are influenced by genes, lifestyle and environment.
6. These habits begin at birth and get worse as we age.
7. **Pranayama** is the conscious effort to start and maintain **Proper Breathing**.

PROPER BREATHING

Correct poor habits and maintain homeostasis on all levels

Holistic: Mental + physical

1. PHYSICAL LEVEL

Pathways & mechanisms of O₂ into the lungs and to the cells and CO₂ out.
Breathe using the diaphragm to allow O₂ in through the nostrils comfortably.

2. CHEMICAL LEVEL

Exchange and metabolism of O₂ and CO₂. Nitric Oxide NO.
Bring levels in the blood into a healthy state

3. CONTROL LEVEL

Nervous and Hormonal control of 1 & 2
Positive effects of balance - Negative effects of imbalance.
Influence the autonomic functions by resonance.

PRANAYAMA

PRANA = Life, energy, causes things to move + AYAMA = Enhance, lengthen, measure and balance.
Holistic: Spirit + Mind + Body

1. **Ancient Indian Science**

As far back as Vedas and then systematized and written in 12-15 CE
Hathayogapradeepika of Swatmara. (Light on Yoga)

2. Helps to take-in, assimilate, circulate, eliminate and balance energies.

3. Helps remove Granthis (impediments) and overcome afflictions.

I. **Adhyatmika**

Bodily and mental afflictions caused by wrong living habits.

II. **Adhidaivika**

Sufferings caused by planetary influences or natural calamities.

III. **Adhibhautika**

Caused by creatures like tigers and serpents or motor car accidents.

Pranayama - Levels of Organization

1. Causal - Karana Sharira

Source - point of origin and return.

2. Subtle - Sukshma Sharira

Pranas, Nadis, Indriyas, Antahkarana

3. Physical - Sthula Sharira

1. Biomechanical

Respiratory, Cardiovascular, Myofascial & Lymphatic Systems

2. Biochemistry

Oxygen, Carbon dioxide, Nitric oxide, Blood pH

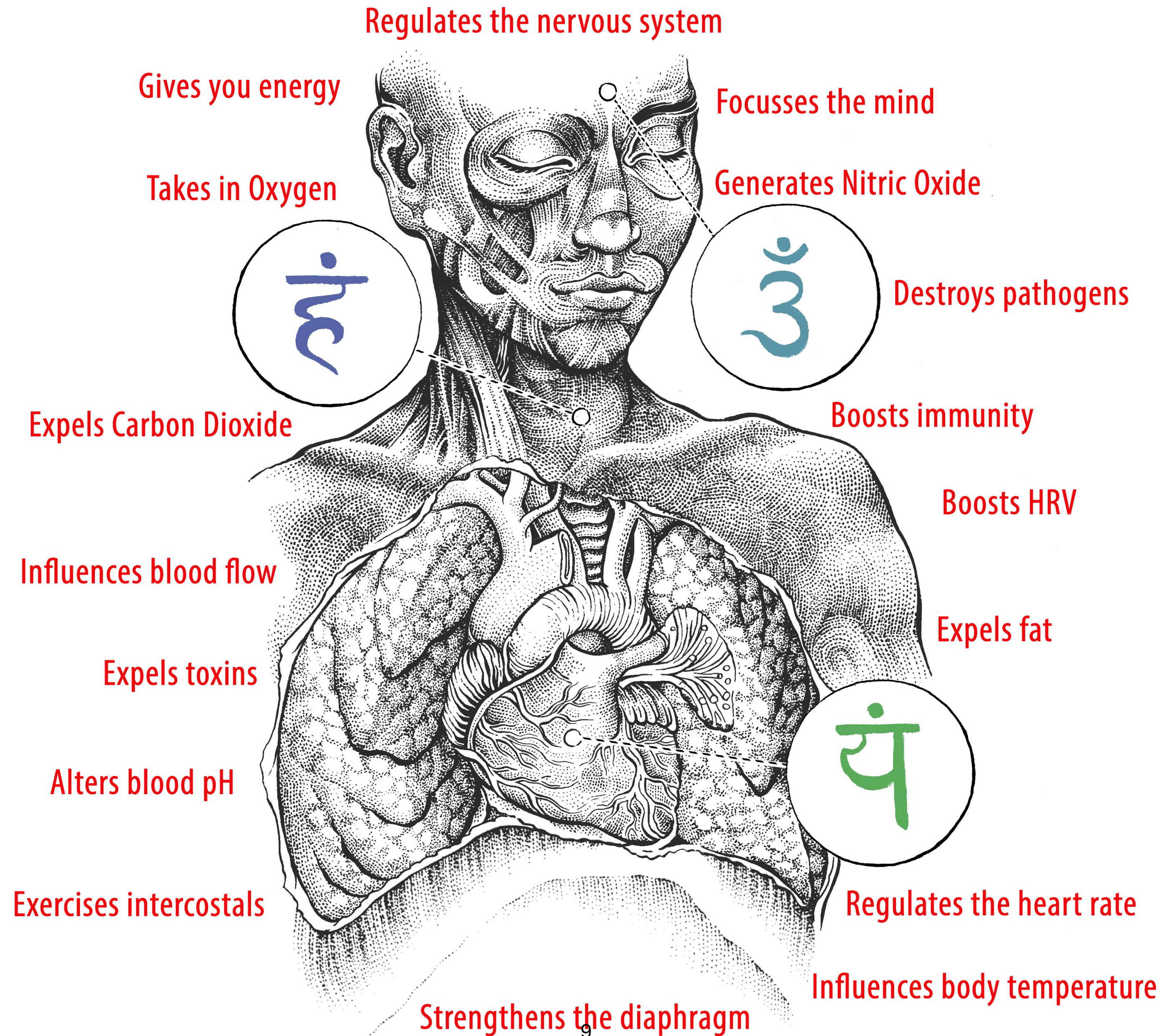
3. Psychophysiology

Nervous and Endocrine Systems

Popular Misconceptions about Breathing

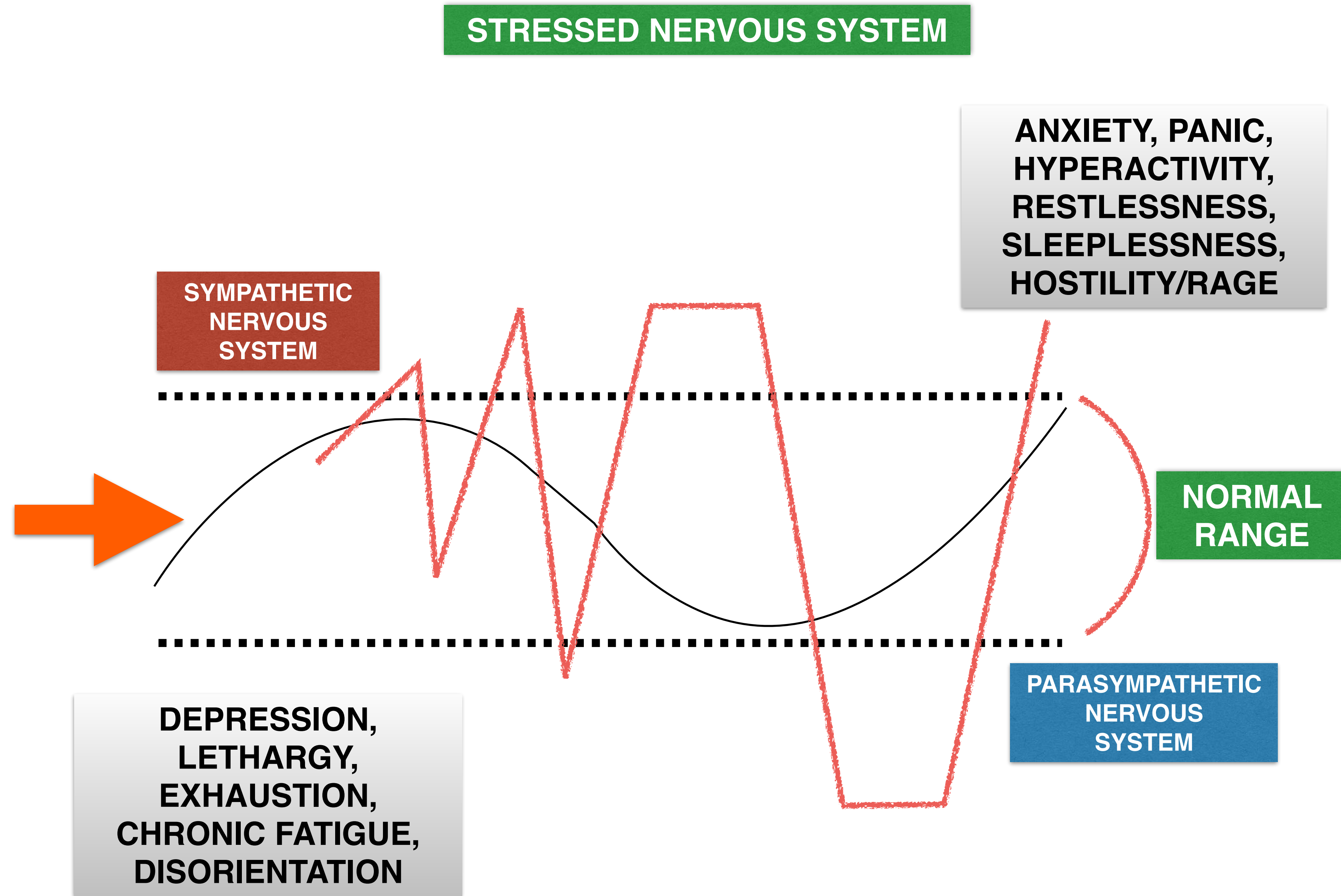
- 1. The more we can breathe the healthier we are**
More is not better. 10-12 bpm and 4-6 liters. More than that can be dysfunctional
- 2. Big loud deep breaths give us more oxygen**
Bigger louder breaths de-oxygenate us
- 3. Deep breath means a big breath**
A deep breath does not mean a bigger breath
- 4. The need for oxygen is why we breathe and regulates our breathing**
Our tissues and cells need O₂ but CO₂ in the blood regulates the process
- 5. Carbon dioxide is bad and we must get rid of it**
It is carbon dioxide that initiates breath, breath regulation and homeostasis
- 6. We should empty our lungs of air when we exhale**
You cannot empty your lungs - there is always some residual air in the lungs

NASAL BREATHING DOES SO MANY THINGS



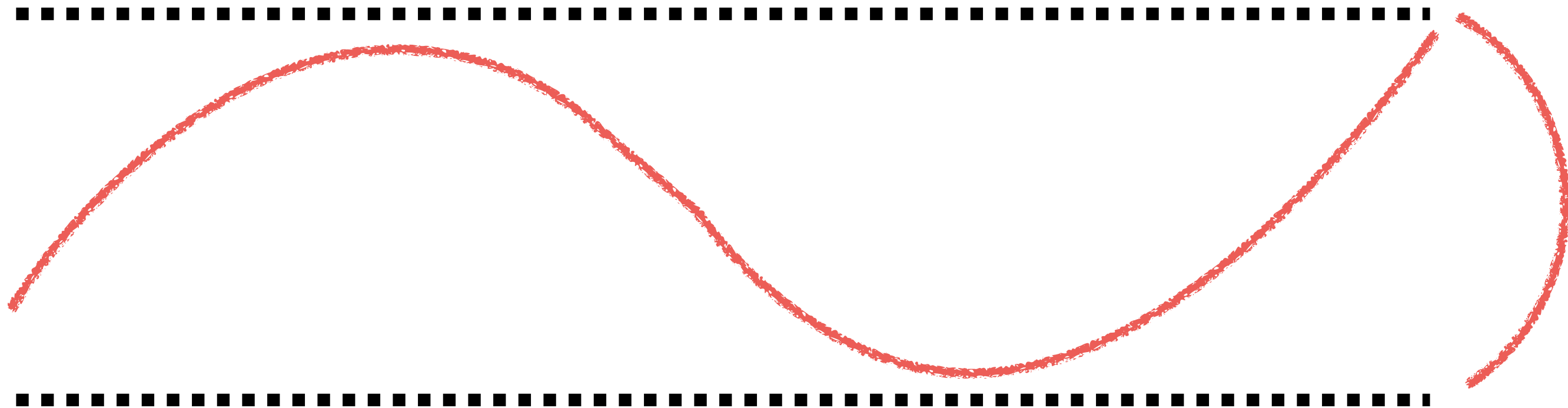
Some Functions of the Nose

1. Helps to induce relaxation by providing resistance to slow the breathing rate.
2. Sense of smell aids behavioral response - early detection aiding survival instincts.
3. Increases recruitment of the diaphragm.
4. Produces Nitric Oxide. Opens air passageways. Aids in releasing O₂ from hemoglobin to cells.
5. NO increases blood flow in the upper lungs.
6. Dilates blood vessels in the lungs improving arterial oxygenation.
7. Defends against inhaled pathogens.
8. Imposes a resistance to inhalation and exhalation helping maintain elasticity of the lungs.
9. Warms the air helping thermoregulation thus maintaining core temperature.
10. Humidifies the air before it reaches the lungs. Protects lungs from drying out and being inflamed.
11. Reduces water loss when we exhale as nasal mucosa captures and recycles water.
12. Improves oxygenation during sleep. Helps reduce sleep apnea.
13. Improves deep sleep quality.
14. Helps develop facial structures



HEALTHY NERVOUS SYSTEM

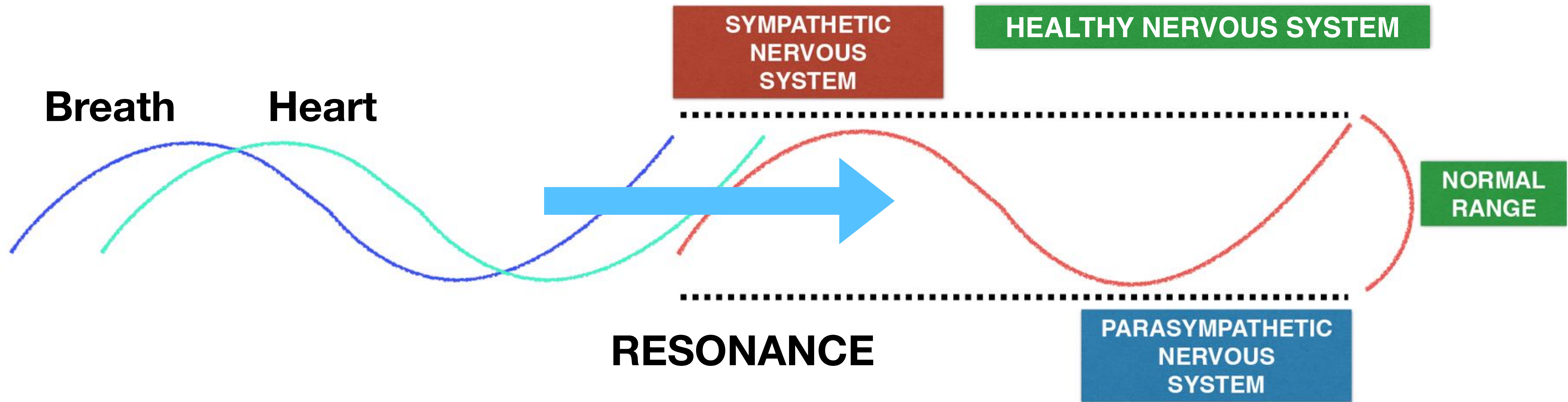
**SYMPATHETIC
NERVOUS
SYSTEM**



**NORMAL
RANGE**

**PARASYMPATHETIC
NERVOUS
SYSTEM**

RESONANCE BREATHING



PRACTICAL STEPS TO START

3 important actions to do now. Many details why later.

1. TONGUE UP

**Keep your tongue up against the hard palate.
Tip of tongue just behind the upper teeth.**

2. LIPS CLOSED

**Keep your mouth and lips closed while breathing.
All the muscles around mouth and the tongue relaxed.**

3. NOSTRIL BREATHING

Breath through both your nostrils (not your mouth).

MECHANICS OF DIAPHRAGMATIC BREATHING

Show 3D4 Medical Complete Anatomy visual.

- 1. NOSE & AIR PASSAGES**
- 2. DIAPHRAGM, RIBS & INTERCOSTALS**
- 3. LUNGS**
- 4. HEART & CARDIO VASCULAR**
- 5. BRAIN & NERVES**
- 6. ENDOCRINE & HORMONES**

FUNDAMENTAL PRACTICES

Daily Practice

- 1. SITTING COMFORTABLY - SPINE VERTICALLY RELAXED - BASE FIRM**
- 2. DIAPHRAGM & INTERCOSTAL BREATHING**
- 3. NOSTRIL BREATHING**
- 4. TONGUE POSITION**
- 5. RESONANCE BREATHING**

Introducing Heart Rate Variability

Foundations of Heart Rate Variability

Heart Rate Variability (HRV)

The inter-beat variability between successive heart contractions

QRS complex is combination of 3 deflections on a typical ECG/EKG representing ventricular depolarization during a heart contraction



RR Intervals or **Inter-beat Intervals (IBI)** are time interval between the RR peaks used to calculate HRV

Not just Heart Rate!

Heart Rate (HR) measures the average beats per minute



HRV measures the change in time (or variability) between successive heart beats

Why is there variability?

Variability in heart rate is a result of the allostatic (adaptive) processes of the body's response to stimuli or other regulatory processes within the body

Variability is good in biological systems

Many regulatory mechanisms affect the heart

Short-term Mechanisms

- Respiratory System
- Cardiovascular System
- Autonomic Nervous System

Long-term Mechanisms

- Circadian rhythm
- Body Temperature
- Hormonal patterns
- Cumulative stressors

Heart Rate Variability is an accurate, non-invasive measure of the Autonomic Nervous System and therefore health

NITRIC OXIDE Chemical Level

Benefits of slow nostril breathing:

- Produced in the paranasal sinuses (nasal cavity)
- Reaches the lungs only through nasal breathing - not mouth breathing.
- Vasodilator - opens up blood vessels for improved oxygenation.
- Increases blood flow and lowers blood pressure.
- Helps to maintain homeostasis.
- Anti-viral (helps destroy pathogens).
- Enables better immune response .



Granthis

Subtle knots or blockages

- **Rudragranthi**

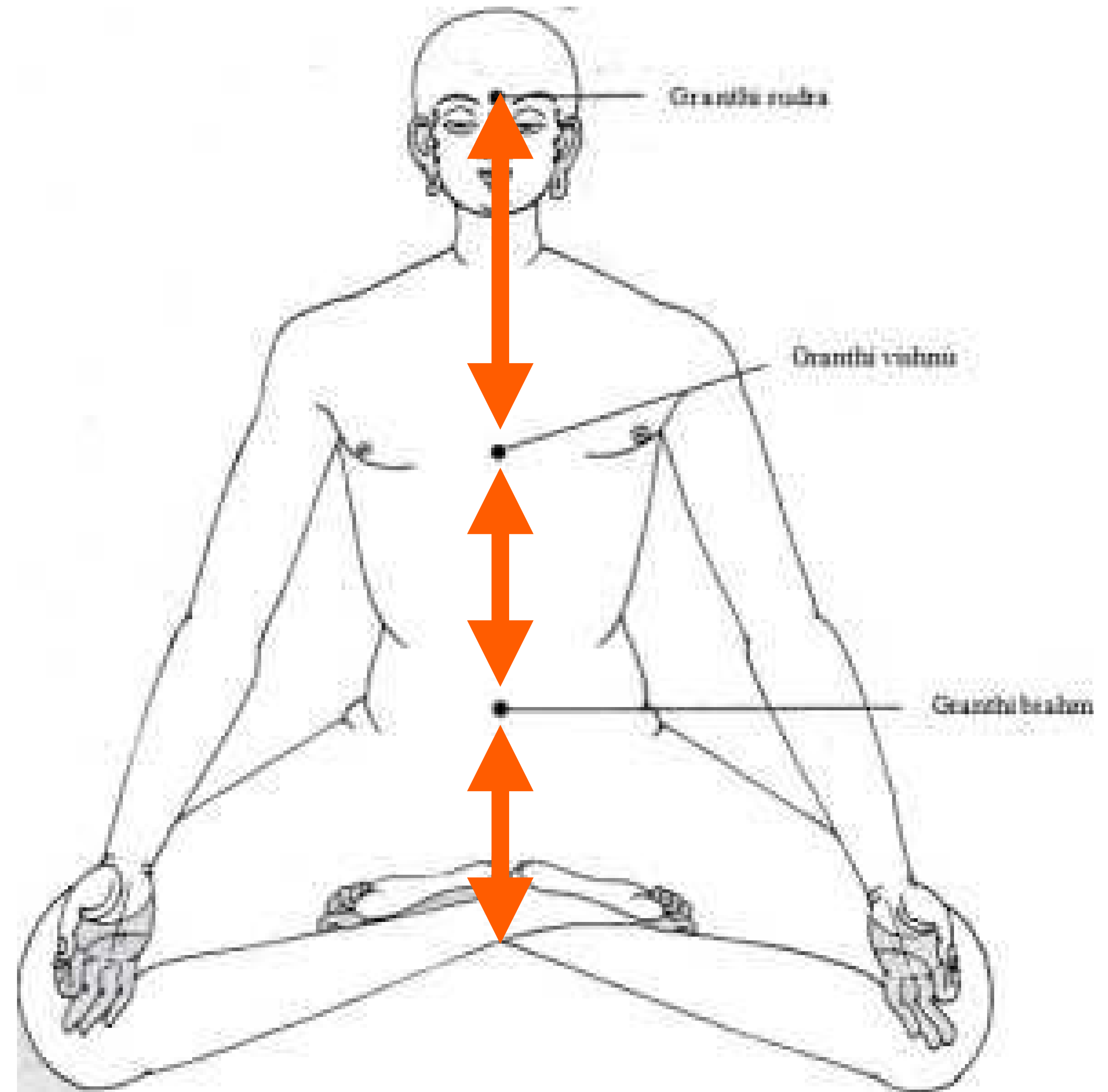
Sense of 'I-ness'
Duality is present but weak.

- **Vishnugranthi**

Emotions and ideas.

- **Brahmagranthi**

Survival, separateness, insecurity,
fear and strong duality.



Pranayama unties the granthis

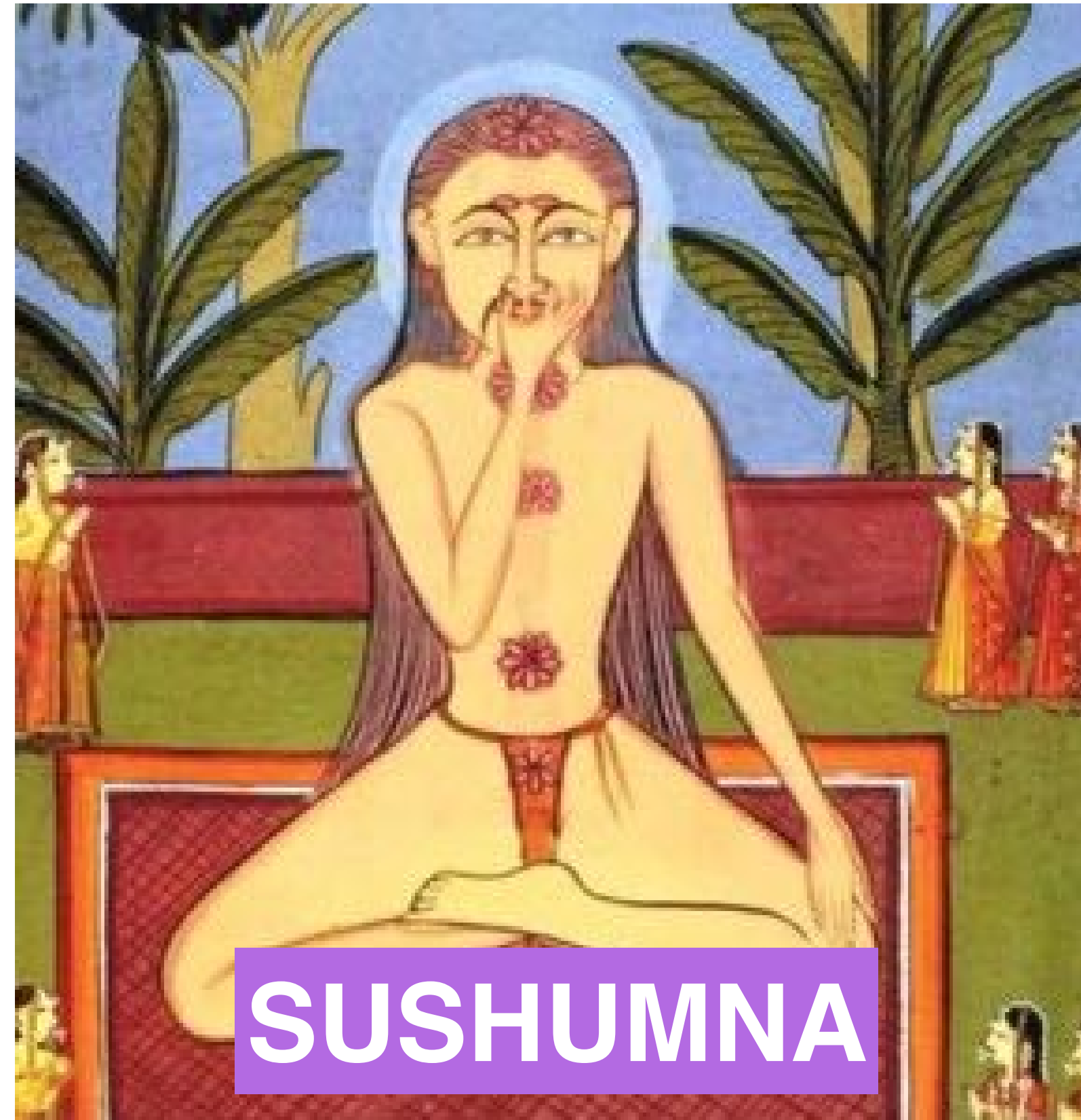
3 Important Nadis

**PINGALA
(HA) SUN**

Right nostril
sympathetic

**IDA
(THA) MOON**

Left nostril
Parasympathetic



SUSHUMNA

Inhale

Sympathetic

Exhale

Parasympathetic

Heart Rate Variability HRV

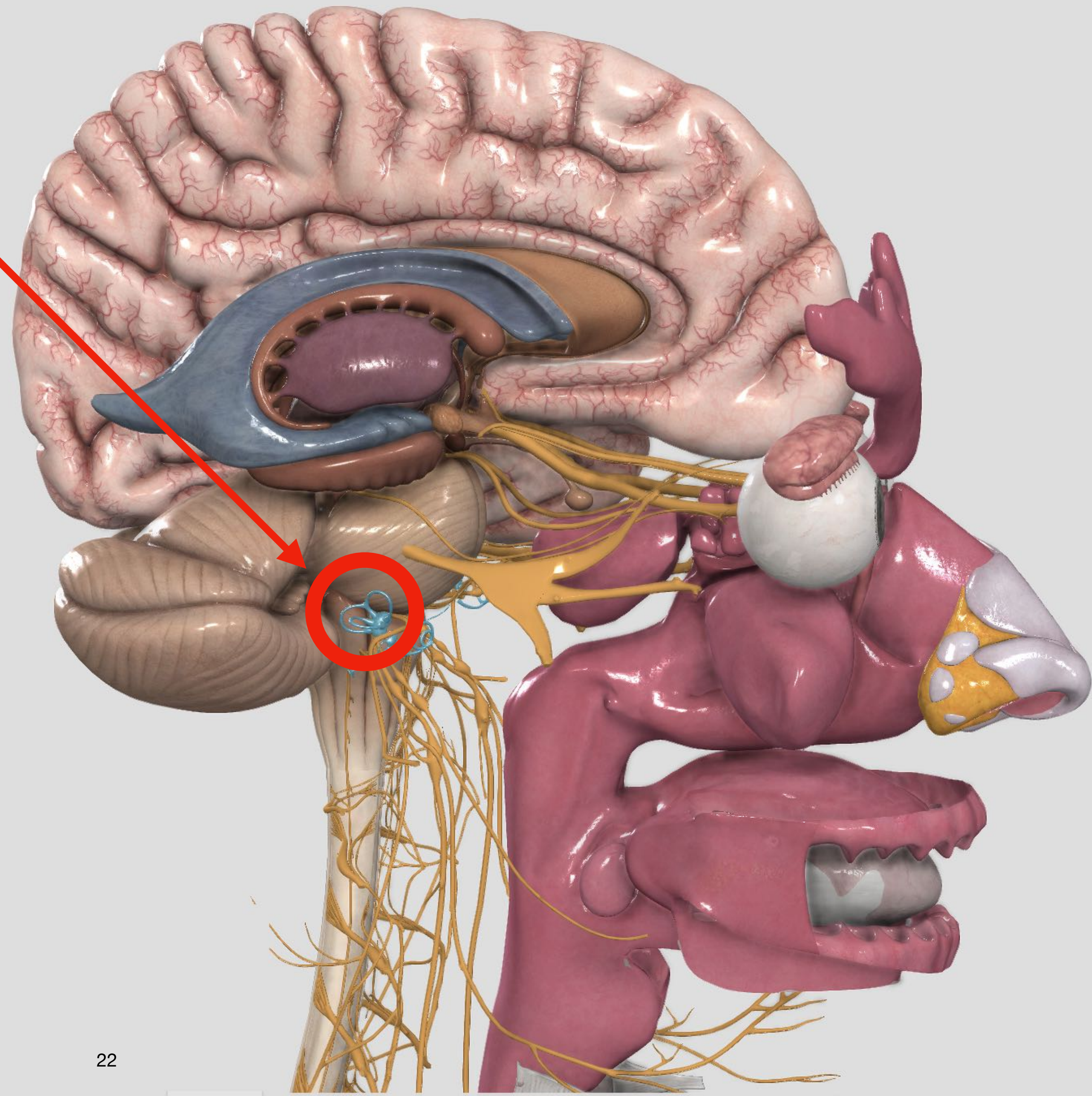
MIND  DRIP

Respiration centers of the ANS located approximately here in the brain stem.

We do not need to think about our breathing. It is largely affected by CO₂, which acts as the metabolic stress messenger, and what is going on in the environment.

Higher sensitivity to CO₂ generally equals faster and mouth breathing, SNS dominant = ACTION

Lower sensitivity to CO₂ generally is slower nasal breathing, PNS dominant = CALM

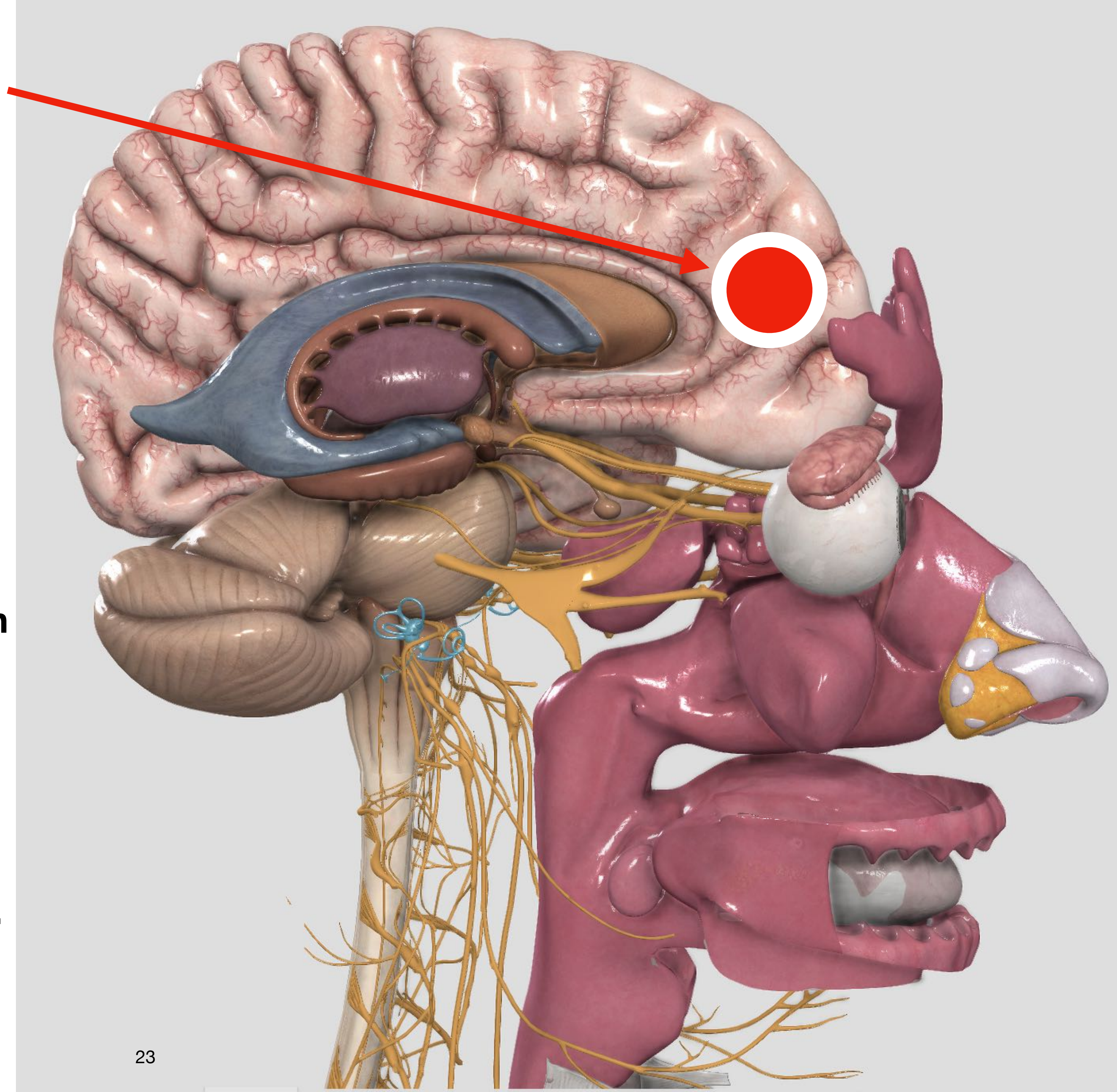


During resonance type breathing this area of the brain is more active - thinking about your breathing.

This gives a level of control over the NS based on sensitivity to CO₂ and the environment.

Inhale is more SNS, and the exhale is more an inhibition of the SNS and allows PNS to function more easily.

Inhale increase HR and exhale decreases HR. This is called respiratory sinus arrhythmia.



Pranayama practice trains your Nervous System.

- **It helps you respond to stress and helps you to manage energy.**
- **Slow breathing and breath holds build a lower sensitivity to CO₂ by increasing CO₂ in the body.**
- **Over time this allows for a slower and more efficient respiration rate. It enhances our PNS.**
- **Faster breathing increases attention and energy by removing more CO₂ from the body. It enhances our SNS.**
- **Regular daily practice of Pranayama will over time establish a healthier and more resilient state of body and mind and allow for a speedier recovery from stressful situations.**

About Resonance

The effects of resonance supports the innate ability of our body, nervous system, and emotions to restore themselves through the balancing of the complementary branches of our autonomic nervous system, which control our heart rate, blood pressure, digestion, respiration, and many other automatic functions of the body.

There have been hundreds of scientific studies performed on resonant breathing, which show a wide array of benefits, including:

- Increases pulmonary function
- Lowers blood pressure
- Has positive applications for anxiety and depression
- Improves baroreflex gain
- Improves heart rate variability
- Tones the vagus nerve
- Increases resiliency
- Increases the ability to handle stress
- Leads towards emotional balance
- Clinical improvements in asthma

How is it possible for one breathing technique to do so much? The answer lies within our nervous system. By breathing at resonance, we enter into an even balance between the two branches of our autonomic nervous system, the sympathetic (which moves us towards activity) and the parasympathetic, which moves us towards rest.

The sympathetic branch is our accelerator, and speeds us up. The parasympathetic is our braking system, which slows us down. We alternate between these two every second of the day, with each breath we take.

However, in our fast-paced, information heavy world, we often lean towards acceleration. Spending just a few minutes consciously breathing sends signals of balance to our brain, telling us that we are ok, and brings us out from the part of our brain that makes us feel overwhelmed, into a state of calm. With resonant breathing, you learn how to apply your brake at will, rather than being sidelined by anxiety, distractedness, or excess stress.

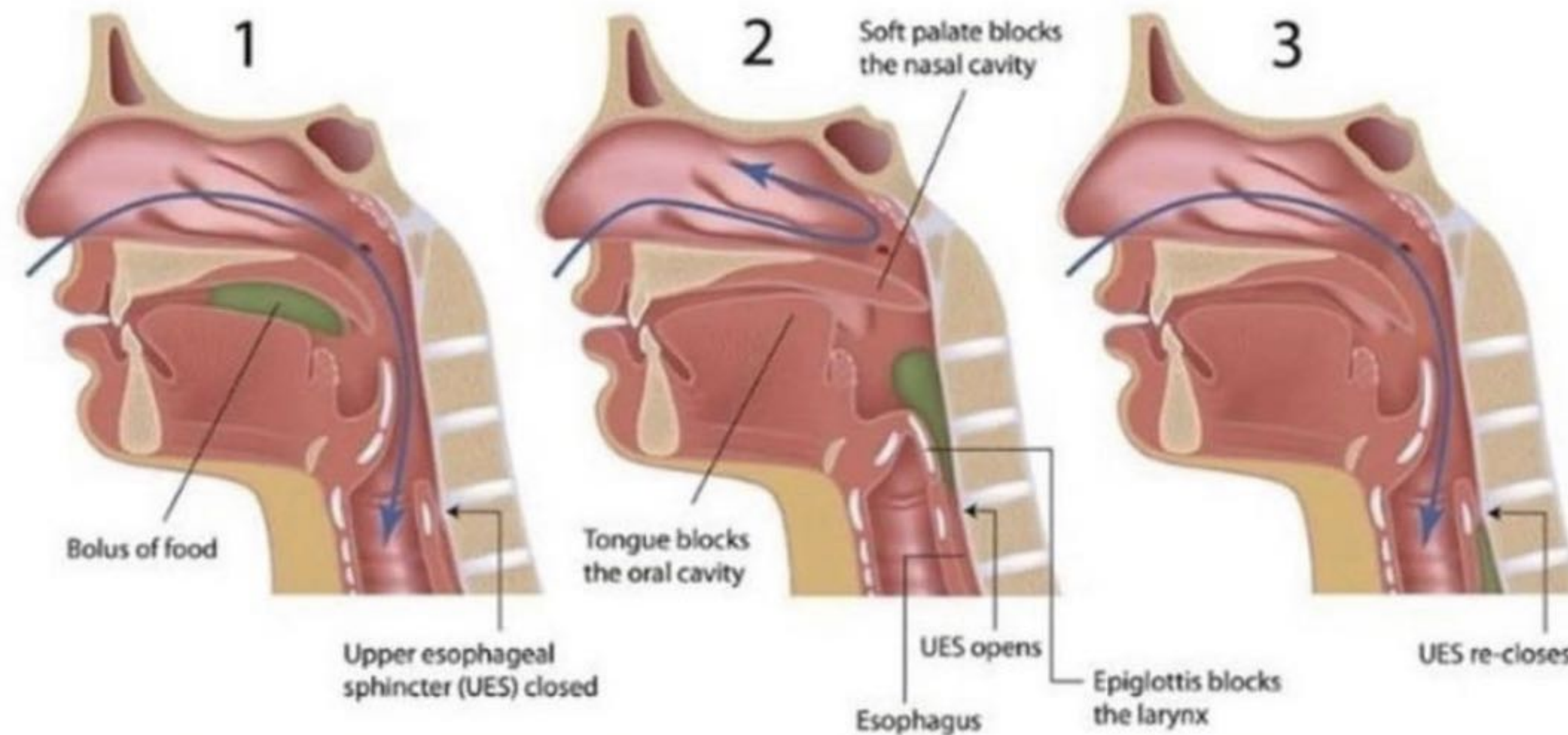
Our world is very much in sympathetic overdrive: we are overly active, overly plugged in, and live in a world of both heated politics and climate. It's important to learn to cool down, so that we can be as effective in our lives as possible, and conscious breathing is one of the best ways to do that. The Breathing App, by virtue of toning the vagus nerve, reduces inflammation, and induces a state of restful alertness and mental clarity.

Resonant breathing is like a stress reset button.

THE BREATHING APP
EDDIESTERN.COM

Correct Tongue Posture Calms the Brain and primes Digestion

Swallowing



Exercising the tongue muscles may prevent mouth breathing and reduce snoring

Low tongue posture can lead to health issues throughout the body. The tongue is an organ that guides the digestive process, and is critical for both neural signals in the brain.

When you swallow incorrectly, it deforms the dental arch. In kids we can see 'open bites' or high arched palates that indicate the tongue isn't making proper connection to the roof of the mouth.

Mouth breathing (even at night), an incorrect tongue resting posture, or an improper swallowing pattern can all contribute to the vagus nerve not being correctly stimulated.

The vagus nerve is one of the primary parasympathetic cranial nerves and drives the digestive system.

Correct swallowing activates rest and digest messages that must begin in the mouth.

During these times, the glands relax and release saliva for digestion, and the body sends hormonal signals reading the body to absorb.

These are the activities that happen when the body is resting and unstressed, particularly after we eat and when we sleep. The sympathetic nervous system on the other hand stimulates the activities that are connected to the fight-or-flight response.

When we breathe through the nose, have the tongue in the roof of the mouth, and swallow correctly, the vagus nerve is being stimulated. But when we don't, it can lead to low vagus nerve stimulation. This can contribute to the factors that are keeping us stuck in fight-or-flight, or actually put us directly in that state.

If you don't swallow properly you end up living in a permanent state of stress. This in turn can affect our digestion because after all, digestion isn't a priority when you're running for your life. Again, running or fighting is what this whole stress response system is designed for.

How to start strengthening and reconnecting the tongue to the roof of the mouth:

'Table Top exercises' are where you hold the entire surface of the tongue to the roof of the mouth. Suction the tongue up and right to the back of the throat and hold the posture here. Hold for 20 seconds and rest and repeat 5 times.

It feels strange, but this is how the tongue should guide the swallow response.

Baroreceptor Reflex and Heart Rate Variability (HRV)

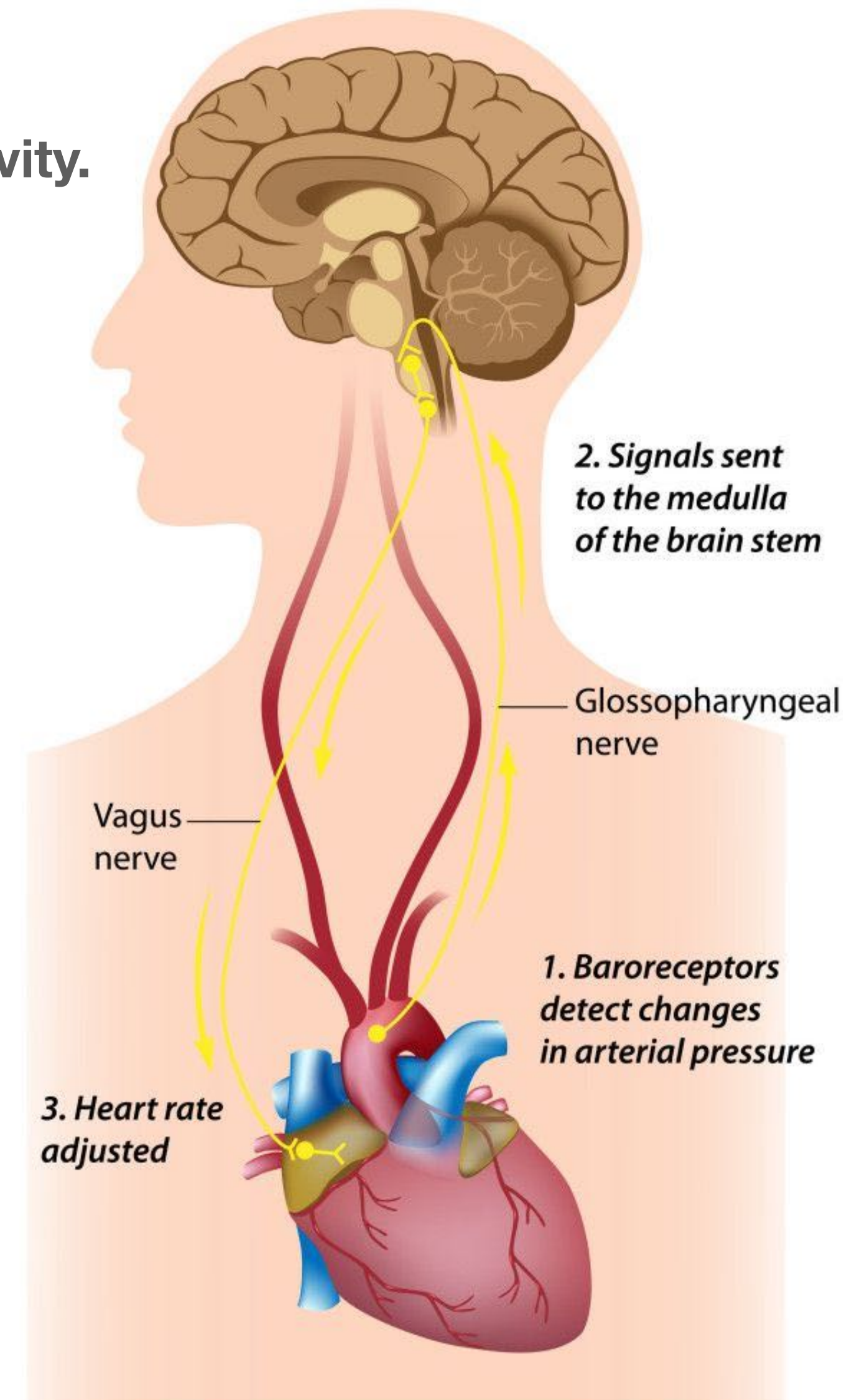
Receptors in the walls of the aorta and carotid arteries maintain BP triggering the baroreflex mechanism.

INHALES INCREASE YOUR HEART RATE

1. When you inhale the diaphragm moves down creates more space in the thoracic cavity.
2. Your heart gets a little larger and thus blood flows more slowly through it.
3. A neural signal is sent from the heart to the brain to say “blood flow is reduced”
4. The brain send a neural signal back to the heart to speed up the heart rate.
5. Followed by a rise in blood pressure 4-5 secs later.

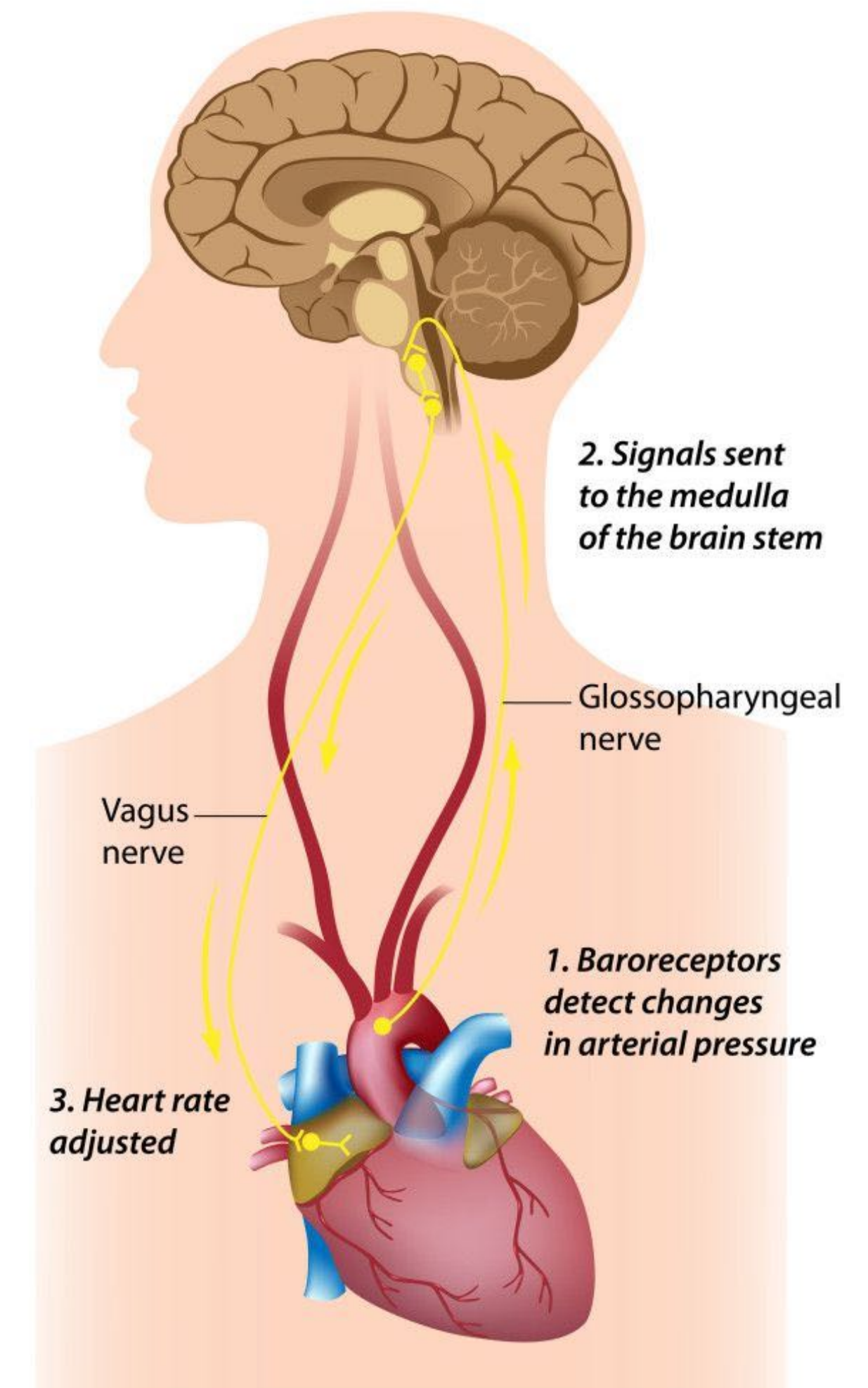
EXHALES SLOW DOWN YOUR HEART RATE

1. When you exhale the diaphragm moves up creates less space in the thoracic cavity.
2. Your heart gets a little smaller and thus blood flows more quickly through it.
3. A neural signal is sent from the heart to the brain to say “blood flow is faster”
4. The brain send a neural signal back to the heart to slow down the heart rate.
5. Followed by a drop in blood pressure 4-5 secs later.



Resonance Breathing

1. Mediated by unconscious mechanisms.
2. But we have control over our breathing rate.
3. Most people breathe at a faster frequency than the baroreflex.
4. If we slow the breathing to match the frequency we strengthen our control over it.
5. **RESONANCE** breathing maximizes the amplitudes of heart rate oscillations, and strengthens the baroreflex creating overall increases in **HRV**.
6. When we are stressed, heart and breathing rates fall out of alignment.
7. During **RESONANCE BREATHING** heart rate oscillations become in phase with breath.
8. Training the heart by breathing at resonance exercises the baroreflex, strengthening it so that **HRV** remains high even during normal breathing.
9. The body is able to reflexively go into a state of resonance during stress.
10. Strengthening the baroreflex trains heart muscle so that heart rhythms experienced during relaxation and gratitude continue even during stressful times.



TO DO

Daily Practice

1. WAKING AWARENESS

Lie still and do about 10 deep slow full quiet breaths.

Then place both feet flat on the floor. Sit straight. 10 more breaths.

Bathroom routine include cleaning the nostrils. Neti

2. SIMPLE EXERCISES - Warm Ups / Yoga / TaiChi / Sukshma Vyayama

3. MORNING RESONANCE BREATHING

4. DIET NOTES

5. RETIRING & SLEEPING

Shatkriyas (6 Cleansing acts in Hathayogapradeepika)

- **Dhauti**

Mouth to stomach. **Vastra dhauti, Kunjara kriya & Agni Sara kriya.**

- **Basti**

Large and small intestine. Enema.

- **Neti**

Nasal passages. **Jala Neti and **Sutra Neti.****

- **Tratak**

Eyes.

- **Nauli**

Churning the abdominal region and muscles. First learn **Uddiyana bandha.**

- **Kapalabhati**

Air passages and lungs.

Yoga practice unties the Granthis in the Nadis

**We do not see nadis and granthis
but we experience them.**

**As we practice we slowly untie
these knots on all levels.**

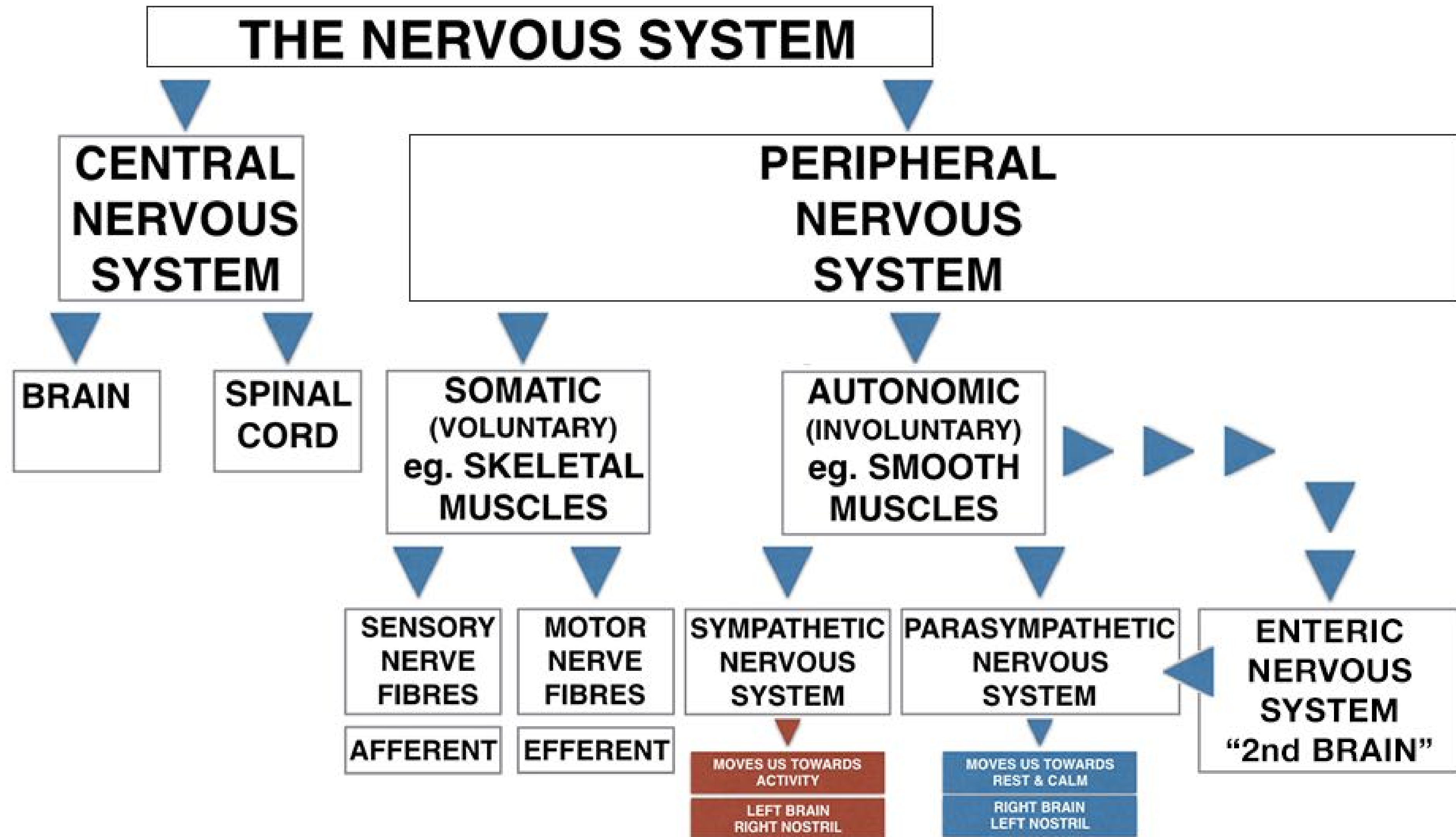
Western Point of View

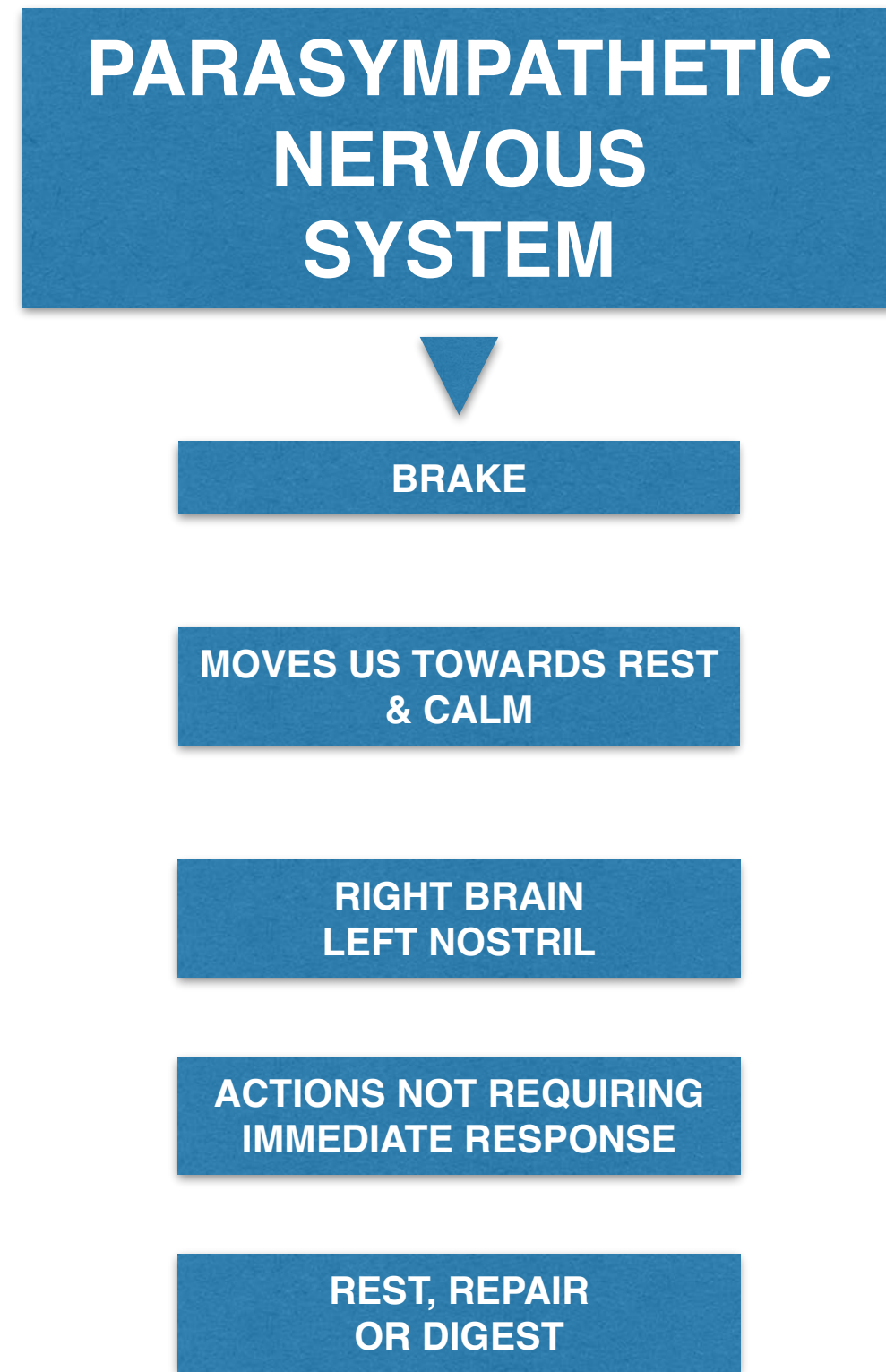
HOMEOSTASIS

The relative constancy of the body's internal environment.

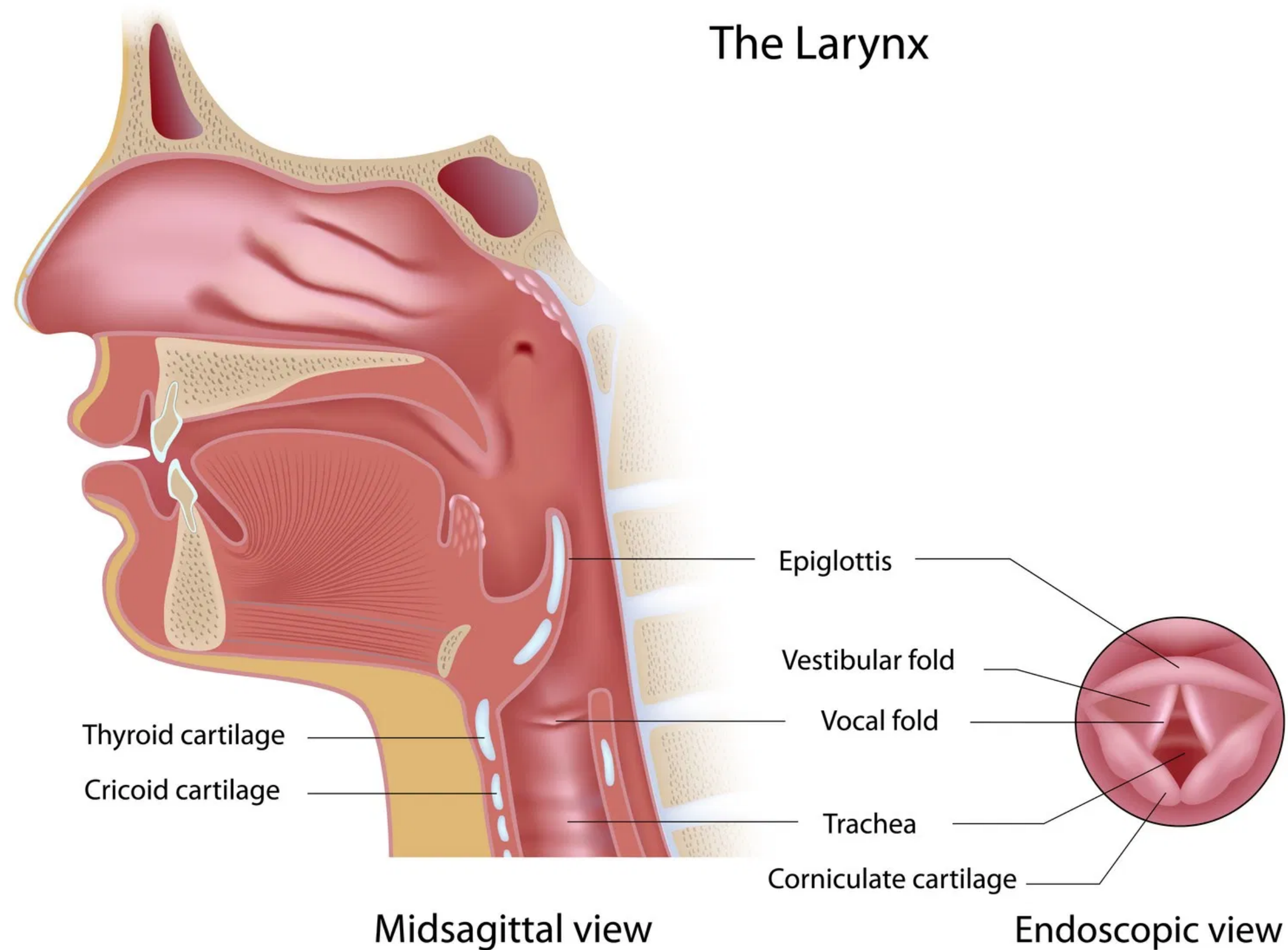
The tendency toward a relatively stable equilibrium between interdependent elements, especially as maintained by physiological processes.

PRANAYAMA is mainly about the
The Nervous System
working with
The Endocrine System
via the Respiratory and
Cardio Vascular Systems
to monitor and maintain the
homeostasis of the body.





Vocal Folds



- The vocal folds, (vocal cords), are twin infoldings of mucous membrane stretched horizontally across the larynx.
- They vibrate, modulating the flow of air being expelled from the lungs during phonation.
- Another name for the airway at the level of the vocal cords is the glottis, and the opening between the cords is called the glottic chink.
- The size of the glottic chink is important in respiration.
- Open during inhalation, closed when holding one's breath, and held apart just a tiny bit for speech or singing; the folds are controlled via the vagus nerve. They are white because of scant blood circulation.
- The folds vibrate when they are closed to obstruct the airflow through the glottis, the space between the folds: they are forced open by increased air pressure in the lungs, and closed again as the air rushes past the folds, lowering the pressure (Bernoulli's principle).

Vagus Nerve[s]

Vagus means **‘wandering’**

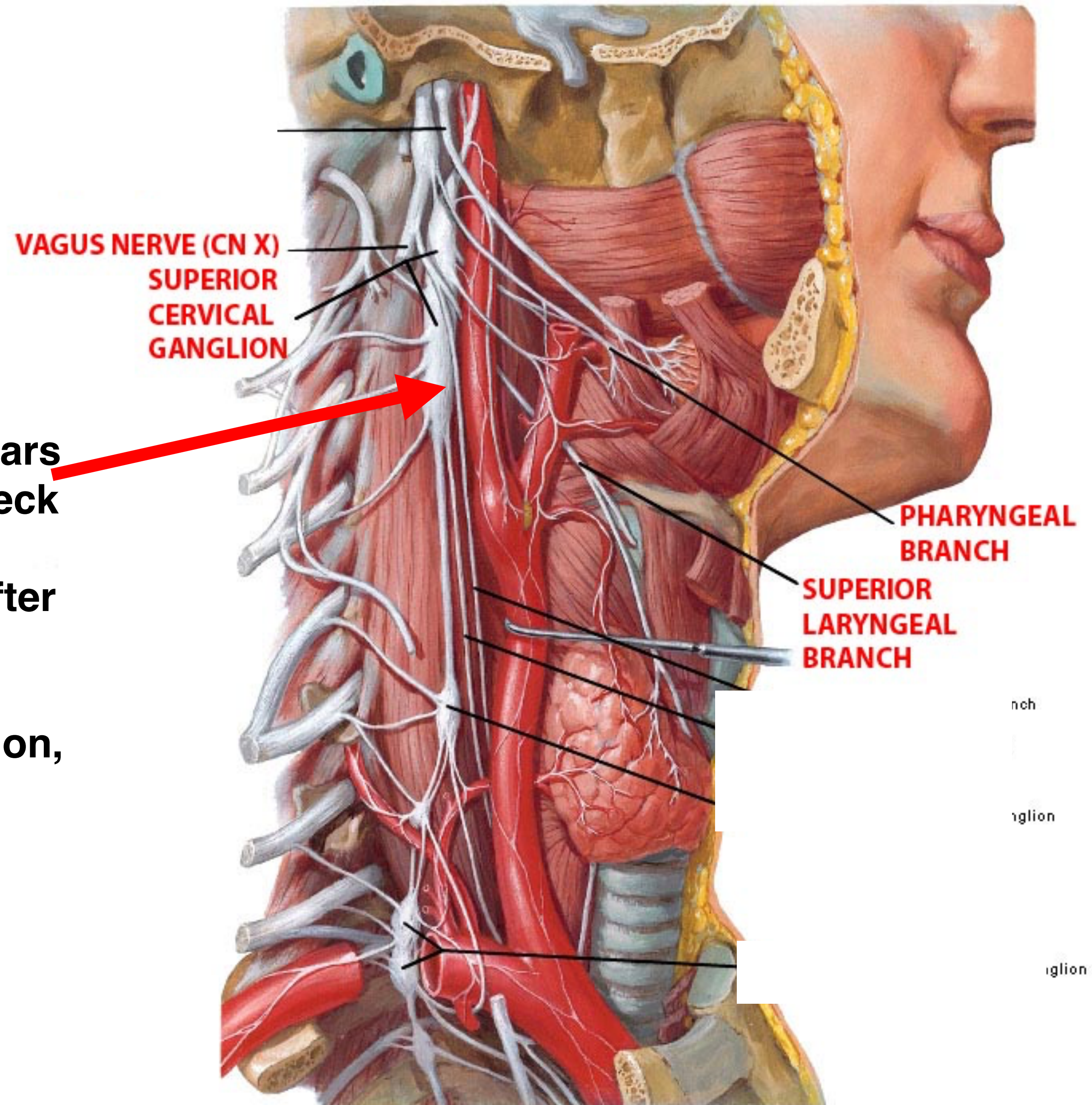
Starts in the brainstem just behind the ears and continues down both sides of the neck

Natural ‘pacemaker’ calming the body after fight/flight has been triggered.

Regulates heart rate, respiration, digestion, coughing, swallowing, and sneezing.

80-90% of vagal nerve fibers send messages “up” from body to brain.

Listen to your ‘gut’ or ‘heart’!!!



Autonomic Nervous System



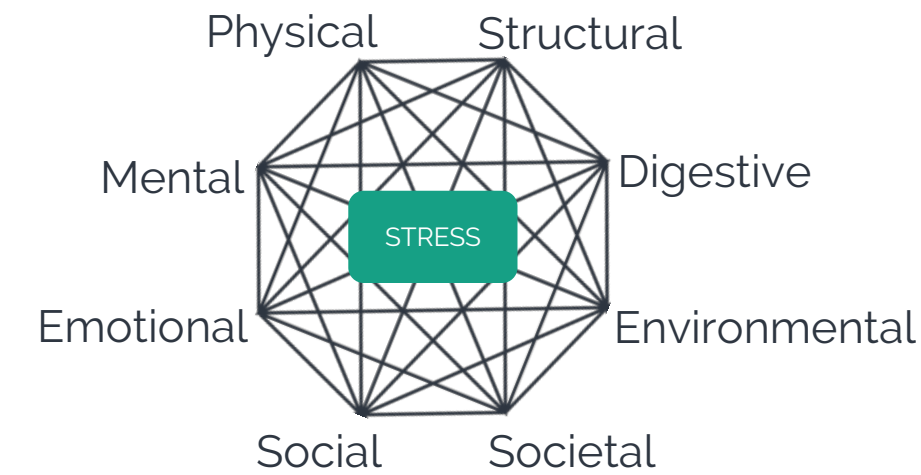
www.AlilaMedicalMedia.com

Stress & Homeostasis

Foundations of Heart Rate Variability

Stress

A reaction to a stimulus that disturbs our physical or mental equilibrium. Comes from many sources.



Eustress Beneficial Stress

Distress Negative Stress

An individual's perception and reaction to stress is what determines if the physiological interpretation is eustress or distress



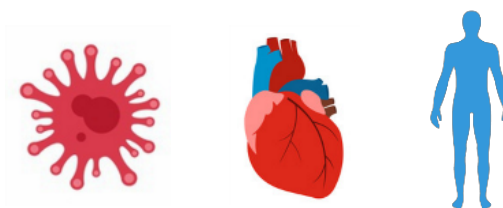
Signs of too much stress

- Trouble falling asleep
- Mental fog
- Unmotivated
- Mid-section fat
- Anxiety

Homeostasis

The tendency of the body to seek and maintain a condition of balance or equilibrium within its internal environment

Homeostasis is a fundamental process found at every level in the body



Many internal systems work together to maintain internal processes such as:

- Heart Rate
- Blood sugar
- Body Temperature
- pH levels...

Stressor - anything that challenges or stresses Homeostasis

Disruption to Homeostasis indicates **stress load**

Ability to maintain Homeostasis efficiently indicates:

Better health Better performance Better resilience

Allostasis

Foundations of Heart Rate Variability

Allostasis

The adaptive process of achieving stability, or Homeostasis, through physiological or behavioral change. The primary goal is to maintain a stable environment in the body

More adaptability means greater ability to maintain Homeostasis

Familiar vs. Unfamiliar Stress

Unfamiliar stress causes a greater stress response, greater resources to overcome stress, and greater recovery time

Familiar (recurring) stress causes less disruption over time because of adaptation

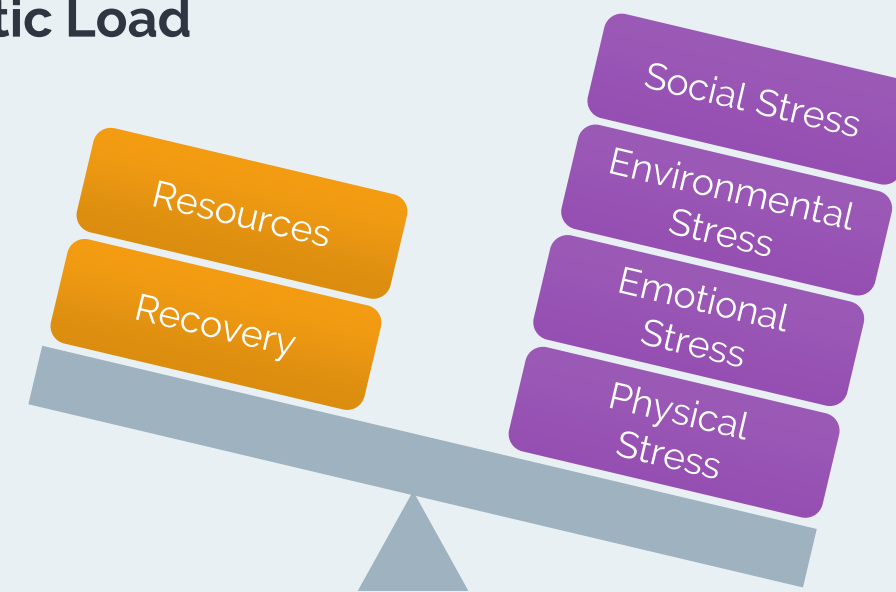
Effective handling of one stressor allows resources to be used for other stressors

Allostatic Load

The wear and tear that the body experiences due to repeated cycles of Allostasis and/or inefficient regulation of the stress responses

Allostatic Load comes from many sources and they are all connected

Stress is cumulative!



Allostatic Overload

Accumulation of stress (Allostatic Load) from all sources beyond your body's ability to tolerate the load

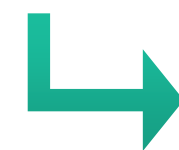
Decreases performance
Increases recovery time



Chronic diseases
Higher rate of injury
Higher susceptibility to illness

Positive vs. Negative Stress

STRESS



Increased Cortisol,
Sympathetic
Activation, etc.



Short term Effects - Positive

Increased brain function
Coping

Long term Effects - Negative

Excitotoxicity
Cell death
Anxiety
Premature aging

General & Individual Response

Foundations of Heart Rate Variability

General Response to Stress

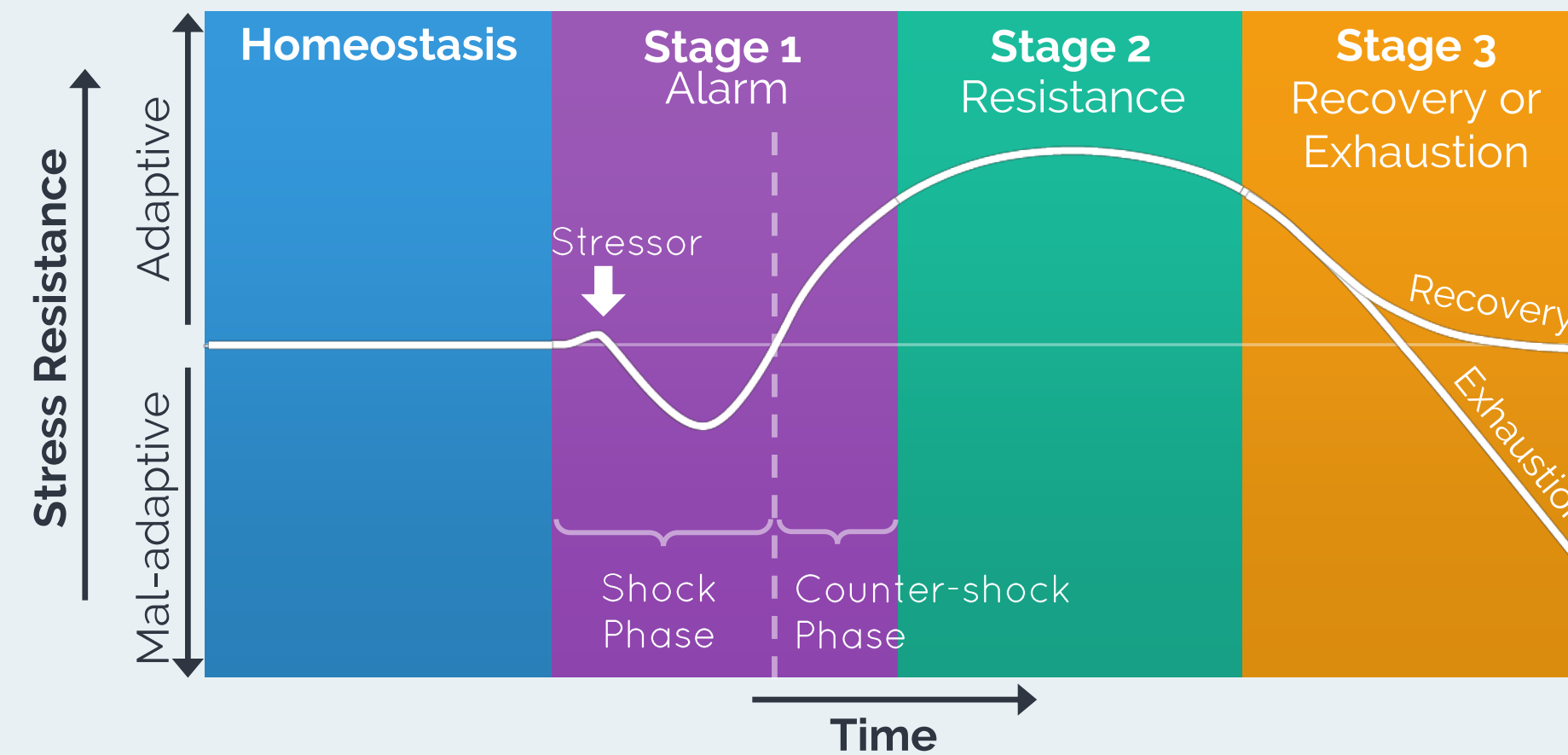
Stress (of any kind) causes a disruption to the biological system. There is a "predictable" general response to stress to ensure survival.

Walter Cannon's "Fight or Flight" Response

The acute physiological reaction that occurs in response to a perceived threat to survival. We react to threats with a general discharge of the Sympathetic Nervous System, priming us for fighting or fleeing.

Modified General Adaptation Syndrome (GAS)

GAS expands on Cannon's "Fight or Flight." Describes the body's short-term and long-term reactions to stress in three stages. Discovered by Hans Seyle.



Stage 1 - Alarm	Stage 2 - Resistance	Stage 3a - Recovery	Stage 3b - Exhaustion
The survival stage Sympathetic "Fight or Flight" Activation in Counter-shock phase	Where Adaptation occurs Compensation stage Build resiliency	Return to Homeostasis Only possible after stressor is gone Builds resistance to future similar stress	Allostatic overload Decompensation stage If extended, long-term damage may result

Individual Stress Response

Stress response is dependent on an individual's physical, emotional, mental, and experiential state and therefore a stress response to the same stressor can express differently among individuals.

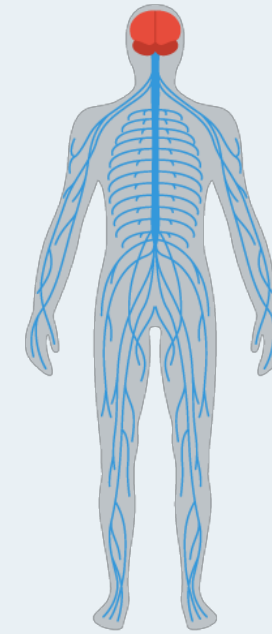
Two components to stress adaptation: General Response & Specific Response

Autonomic Nervous System

Foundations of Heart Rate Variability

Autonomic Nervous System (ANS)

A division of the Peripheral Nervous System that controls the unconscious bodily processes and influences the functions of internal organs.



Some internal processes regulated by the ANS:

- Heart rate
- Blood pressure
- Body temperature
- Electrolyte balance
- Digestion
- Respiratory rate
- Pupillary response
- Urination
- Sexual arousal

Communicates with the body to maintain homeostasis

There are two complementary branches of the ANS

Both branches control the same organs but with opposite effects

The are both always active at different level in a balance

Sympathetic Nervous System (SNS)

Controls stimulation of **“fight-or-flight”** stress response

Needed for short-term survival



Parasympathetic Nervous System (PSNS)

Controls stimulation of **“rest-and-digest”** activities essential for recovery

Needed for long-term survival



Heart Rate Variability is an accurate, non-invasive measure of the ANS and Autonomic Balance (the balance between the SNS and PSNS)

Vagus Nerve

Foundations of Heart Rate Variability

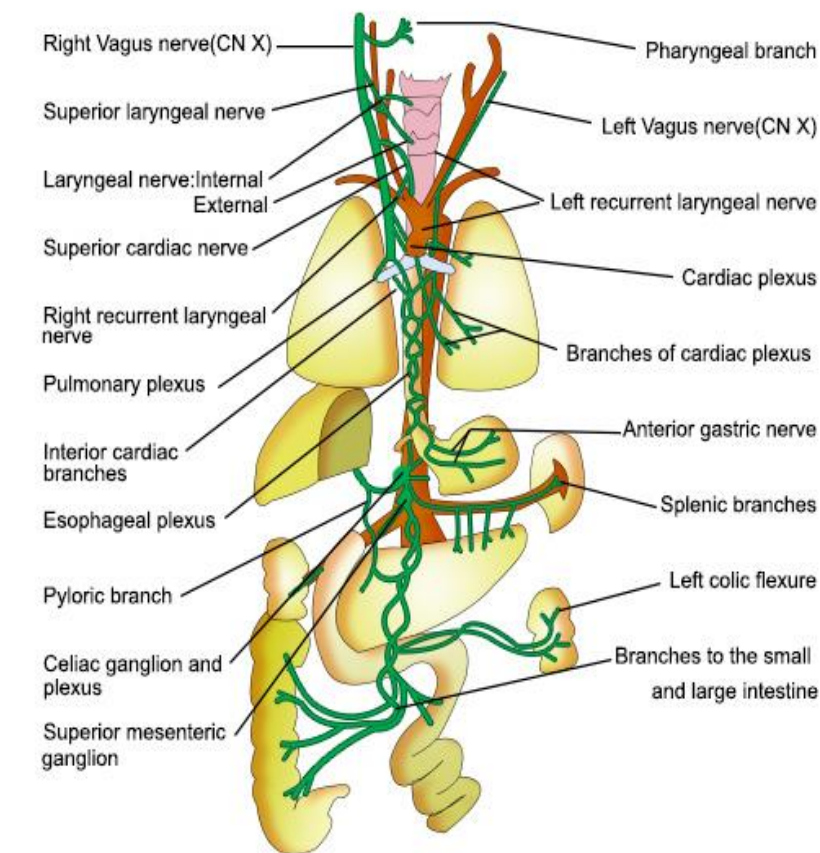
Vagus Nerve

The tenth cranial nerve that connects the brain with the heart, lungs, stomach, spleen, intestines, liver, kidneys, and other nerves.

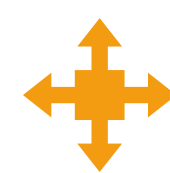
It is the longest nerve of the **Autonomic Nervous System**.

Provides sensory and motor information about the state of the body's organs to the central nervous system.

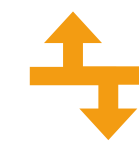
Interfaces with **parasympathetic control** of the heart, lungs, and digestive tract.



HRV measures the input of the Vagus Nerve on the heart and therefore can measure Parasympathetic activity



Connects important processes like respiration and blood pressure to the heart.



Vagus Nerve activation leads to reduction in heart rate and blood pressure.

Vagal Tone refers to the activity and function of the Vagus Nerve.

The Vagus Nerve is a major constituent of the inflammatory reflex that controls innate immune responses and inflammation during disease or injury

Decreased vagal tone is implicated in increased morbidity and mortality

Common mistakes when measuring HRV ©Jason Moore EliteHRV

1: Assuming a low HRV score is always bad

A single or handful of low HRV readings is not always bad. In fact, large drops in HRV can be favorable as long as HRV recovers to normal or better levels. Examples include after hard workouts, on competition days, or when tapering endurance training before a race.

2: Assuming a high HRV score is always good

If a single HRV measurement is abnormally high compared to an individual's baseline or norm, then it can mean something is off. Examples of sudden high readings include hidden illness/sickness, or bouts of hyper-recovery after intense stress loads.

3: Inconsistency between readings

In order to minimize confounding factors or misleading results, consistency between HRV measurements is extremely important. Specifically:

- **Body position:** Whether you choose to sit, stand, or lay during a measurement, make sure you consistently use the measuring position (even torso angle counts!).
- **Time of day (i.e. the same 1-hour window)** to account for circadian rhythm.
- **Activity before the reading:** Exercising, conversing, eating, caffeine, etc. all affect HRV. That is why we recommend taking readings at rest in the morning, before any activities that might introduce inconsistency.

4: Only measuring on “important” days

Important changes and hidden or unexpected stressors often crop up on unexpected days. Since stress and recovery are cumulative, non-important days can still heavily influence your system. Measuring HRV infrequently also decreases the accuracy of and confidence in your HRV values.

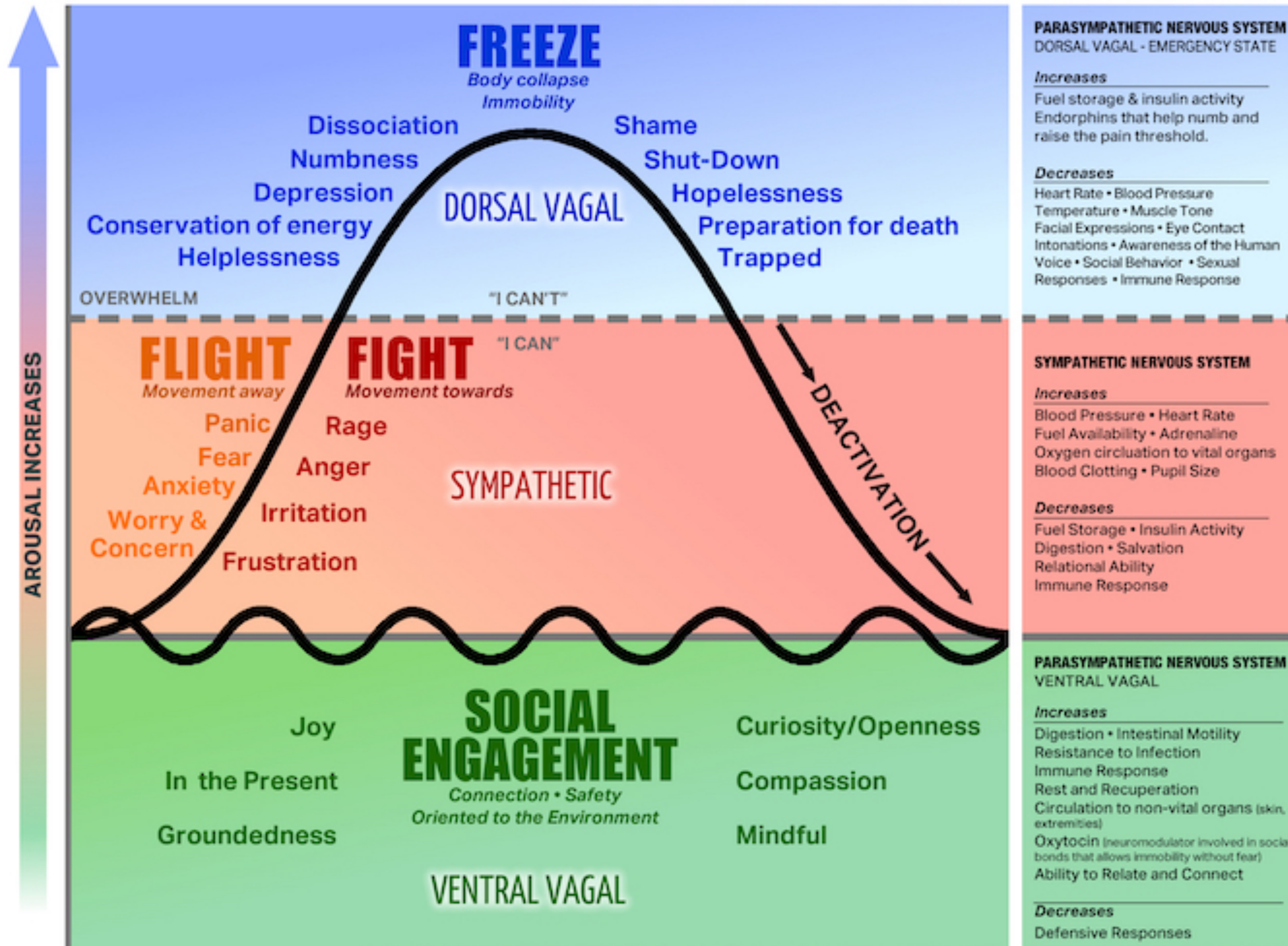
5: Not interpreting HRV readings in context

HRV is a powerful biomarker that binds together other subjective and objective data to take the guesswork out of decision-making. When measured alone, without any other context, HRV tells you the general state of your nervous system but cannot tell you what might be affecting your condition. That's why we recommend you “tag” additional context, like energy levels, sleep, exercise, nutrition, and just about anything else you want to include.

6: Paced breathing during Morning Readiness readings

Paced breathing becomes a “mistake” when unnatural breathing patterns are used during a readiness or daily baseline HRV measurement. Certain breathing patterns (especially slow, deep breathing) influences Vagus Nerve and Parasympathetic Nervous System activation and increase HRV beyond your natural state.

Note: Paced or guided breathing is perfectly acceptable and even encouraged when used for live HRV biofeedback training or other HRV testing.



HRV (Heart Rate Variability)

- * HRV - measurement of Vagal Tone**
- * Beat to beat difference in heart rate**
- * Heart rate should not be the same all the time**
- * Healthy heart rate is somewhat chaotic**
- * Ability of the heart rate to change is a measure of our physiological and emotional health**
- * Degree of variability influences resiliency**
- * The ability of our mind and body to deal with change**

How to Activate the Parasympathetic NS (or increase Vagal Tone)?

Be kind to people

**Hold positive thoughts in our mind
about ourselves and others**

Practice yoga with awareness

Coherence breathing

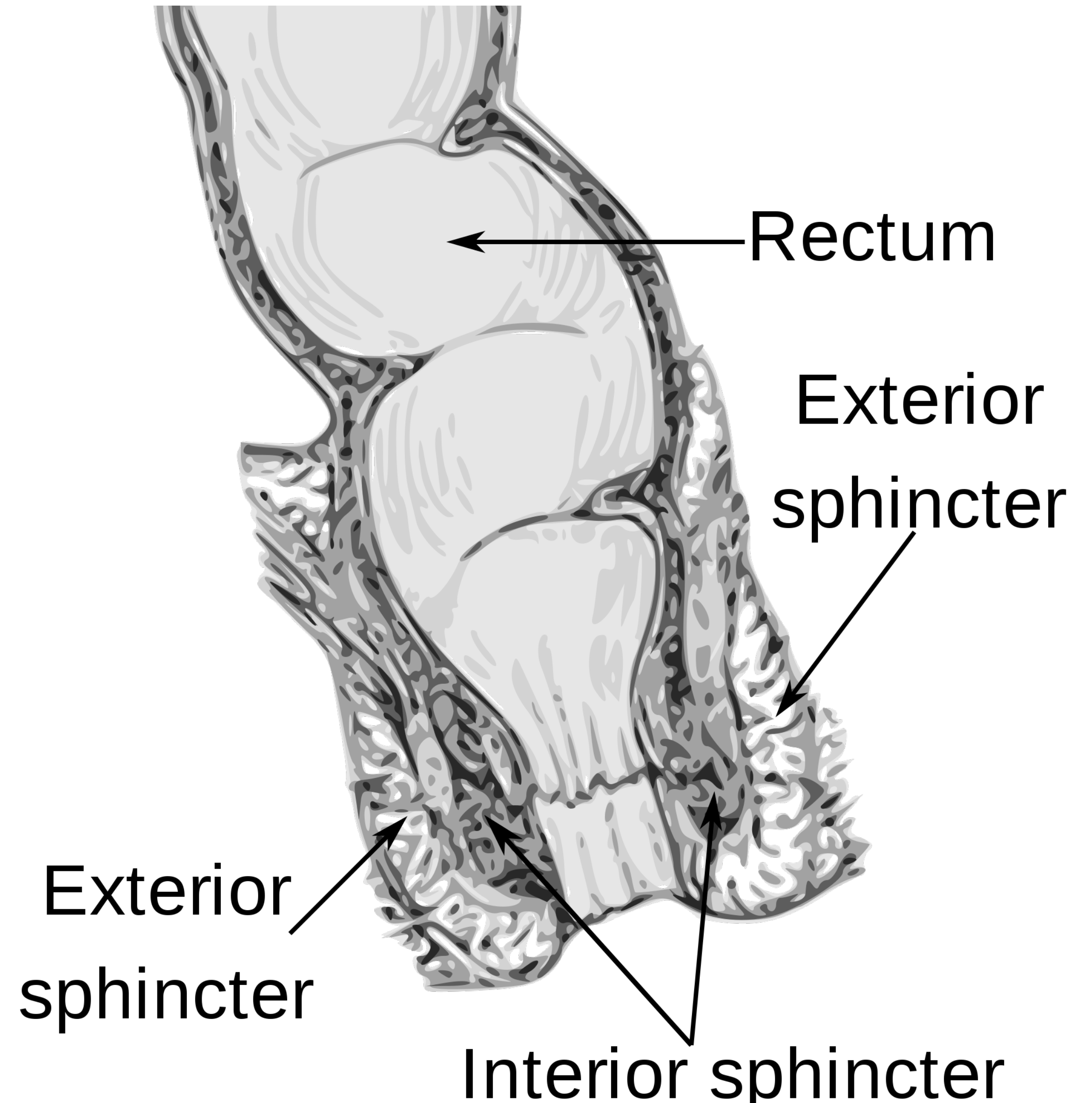
Pranayama

Chanting and singing

**Experience joy and pleasure
in your practices**

Ashwini Mudra

- Ashwini Mudra is controlling of the external anal sphincter muscle. It is the opening of the anus
- There is not a direct link from the external anal sphincter to the heart as there is from the internal anal sphincter.
- It helps us to control the external anal sphincter and pelvic floor muscles and teaches us the location of the internal anal sphincter.
- It is easier to squeeze the external anal sphincter than the internal anal sphincter.
- So it is predatory work to learn mula bandha.
- Ashwini mudra is held for a short period - a few seconds.
- Mula bandha can be held for a longer period during kumbhaka or breath retention.



ॐ असतो मा सद्गमय ।
तमसो मा ज्योतिर्गमय ।
मृत्योर्मा अमृतं गमय ।
ॐ शान्तिः शान्तिः शान्तिः ॥ हरिः ॐ तत्सत् ॥

asato mā sadgamaya
tamasomā jyotir gamaya
mrityormāamritam gamaya
Om śhānti śhānti śhāntiḥ harih om tat sat

Lead me from changing existence to unchanging being,
lead me from the darkness of tamas to the light of knowledge,
lead me from death to immortality. Harih om that is truth.