

BE HERE WELL

The Breath Academy - Level 1

Scientific, Simple, Safe & Effective

Session Four

Nervous System & Breathing

Agenda



- Autonomic nervous system
- Vagus nerve
- Turning on your bodies ability to heal (PNS)
- Stress & Stressors
- Heart Rate Variability & Recovery
- Yin / Yang balance
- Next Steps

The Autonomic Nervous System

- Complex network of cells that **controls the body's internal state**.
- It **regulates** and **supports** the activity of many different organs (stomach, heart, lungs etc), often **outside our conscious awareness**.
- Has two main functions/settings:
 - Parasympathetic - rest & replenish
 - Sympathetic - attention & emergency
- NB Two halves of a whole! Ultimately both are needed to have balance within the body.
- ANS function is *MOSTLY* automatic. **UNLIKE** the Automotive and Autoimmune system, **we can shift ANS into manual using our breath, live on purpose**.

Autonomic Nervous System

- Usually automatic, but we can override/shift into manual using our breath
- Controls heart rate, digestion, respiratory rate, pupillary response, urination, and sexual arousal
- Two branches: Parasympathetic & Sympathetic



The Autonomic Nervous System

A Balancing Act

Parasympathetic

- Unstressed State
- Meditative
- Digesting
- Feeling Calm & Creative
- Freeze
- Healing Mode
- Alpha, Delta, Theta Waves
- Deeper, healthier levels of mind



Sympathetic

- Stressed State
- Awake & Alert
- Hunger
- Physical Activity, Go-Go-Go!
- 999! Emergency! Fight/Flight
- Life Saving Mode
- Beta Waves

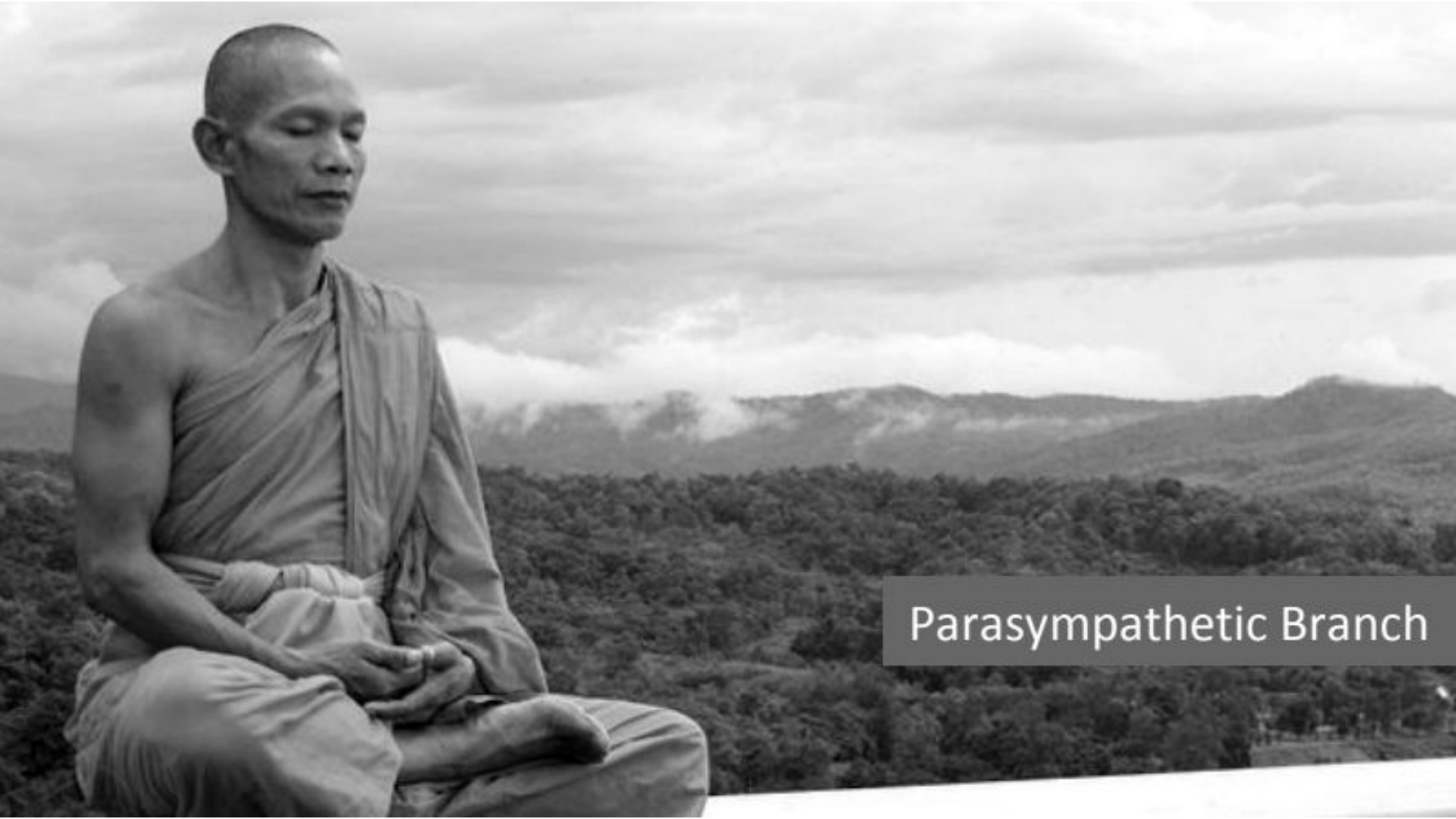
Vagus Nerve

- 10th cranial nerve, longest of autonomic nervous system
- Technically a pair of nerves but referred to as singular
- “Vagabond” nerve as little branches go everywhere
- Largely responsible for the parasympathetic response
- Controls heart, lungs & digestive tract



Breathing & Vagus Nerve

- Vagus nerve passes through the opening of the diaphragm
- Vagus nerve is stimulated by deep breathing
- Also stimulated by humming and singing!
- Breathing promotes vagal tone, HRV, balanced nervous system.
- High vagal tone = responsiveness to environment, ability to adapt



Parasympathetic Branch

Parasympathetic “Rest & Digest”

- “P” for Peace and Parasympathetic
- We need PNS for rest, digestion, creative thought
- Associated to Right Brain activity
- **Increases blood flow to stomach and GI tract**
- Stimulation of peristalsis, urination, and salivary glands
- **Decrease in heart rate**
- Pupil normalization for shorter-range vision (reading)

Turning On Your Body's Ability To Heal

- The most important thing you can do for your health is to activate your body's ability to heal.
- Stimulating the vagus nerve and **switching on your parasympathetic mode** is the key to turning on your immune system, turning off stress and inflammation, and is the key to relaxation and healing.

Sympathetic Branch



Sympathetic “Fight or Flight” Response

- “S” for Stress and Sympathetic
- **Need SNS for strength, movement, busy work**
- Left Brain activity - logic
- All our blood goes to muscles and lungs, as much as 12x more
- Digestion / elimination stop
- Epinephrine (adrenaline) goes up
- **Heart rate increases**
- Pupils dilate for better long-distance vision

Your Brains Top 3 Priorities

1) Keep you safe

2) Ensure that you have the energy to live

Once those conditions are satisfied, your brain will...

3) Seek out novelty (create, expand).

The Neuroscience of Stress

(And How to Train Your Brain)

- When you feel threatened, your body takes you into survival mode.
- Breathing is controlled by the ANS, so your respiratory rate goes up, HR increases, BP increases.
- You need to help your body relax so your brain feels safe again, which means it can get curious again and you can move forwards creatively.
- That's where true inspiration happens: when your brain feels safe and has enough energy, the brain can relax and get curious.

Stress & Stressors

BREATHING

The secret to unlocking the stress cycle

- Feelings exist in your body.
- Emotions are cycles that happen in your body - they are neurological events
- Not just happening in your brain, but your whole nervous system. The intelligence of your body extends from your body from the top of your head to the tip of your toes, and also beyond your skin
- Feelings are tunnels - you have to go through them to get the to light at the end.
- Exhaustion/burnout/stress happens when we get stuck in an emotion.

Chronic Stress

- In an emergency, we shift into SNS mode FAST. When it's over, we re-engage the brake (the PNS).
- **Overactive/Chronic SNS function** is when **don't** re-engage the PNS brake, i.e. we stay stuck in SNS = symptoms like on edge, heart racing, stiff bodies, stiff shoulders, stiff body language, overreact, feel stressed out, worried all the time, overwhelmed, can't sleep.
- *Stress* per se is not bad for us, **being stuck in emergency mode is what's bad for us** - it burns out our resources, lowers our immune system which can cause disease and illness.
- We need both the SNS and PNS modes to be in balance to be healthy.

BREATHING

The secret to unlocking the stress cycle

- We may get stuck simply because we're constantly being exposed to situations that activate emotion.
- We need to learn how to complete the stress cycle by processing our stress, which is the physiological aspect, i.e. deal with the feeling, the emotion with breathwork.
- That is a separate step from dealing with the issue that was activating the emotion in your body, i.e. the Stressor.
- **The idea is to deal with the physiological Stress so your better able to deal with the Stressor!**

A black and white photograph of a tabby cat perched on a tree branch. The cat is looking down and to the left with a focused expression. Its fur has distinct dark stripes and spots. The background is a soft-focus view of tree branches and leaves.

Heart Rate Variability

Heart Rate Variability

- HRV looks at what's going on beat to beat - an objective measure of autonomic balance.
- **High variability** beat-to-beat = healthy, responsive, agile, toned nervous system, state of inner balance and wellbeing and performance
- **Low variability** beat-to-beat = less healthy, less variation
- What we want is an agile nervous system that can respond, rather than react
- Conscious Breathing helps to tone our nervous system, to flex this vagal toning

Heart Rate Variability

- Inhale - bum bum bum (heart rate increases slightly as **vagus brake** is briefly released)
- Exhale - bummmm bummmm (heart rate reduces, as the **vagus brake** is re-engaged)
- This variability is due to vagus nerve connections to the heart.
- When conditions are interpreted as safe, the vagus brake is engaged to restrain the ever ready SNS reflex
- Anything considered as DANGER releases the vagus brake, freeing the SNS for full fight/flight
- Anything minor, like a rustle in the trees, the vagus brake will re-engage, and allows for normal life calm to continue, restoring a state of restfulness, energy replenishment and recovery.

Yin / Yang Balance



- Anxiety about Lions and Tigers has been replaced with the stress of modern life.
- We live in a imbalanced world that's more about stress than relaxation.
- Abnormally prolonged and energy sapping sympathetic activation, with diminished time for the parasympathetic mode required for recovery.
- NB there's nothing wrong (or less good) about being in SNS
- **We're always aiming for balance, which is optimal for our survival & psychological health.**
- Hug the midline: lessen our deviation from the midline, but we always deviate.

Yin / Yang Balance



- **Exhale:** parasympathetic response, opening, creativity, flexibility, relaxation, shoulder drop, expansion.
yin/moon/night/cool
- **Inhale:** sympathetic response, length, strength, shoulders up, constriction, contraction. yang/sun/day/heat

Managing Your Resilience

Best indicators of your inner balance, wellbeing and recovery:

- Resting Heart Rate
- Resting Respiratory Rate
- Blood Oxygen Saturation SpO2
- Heart Rate Variability

- CO2 levels (empty breath hold)

Breathing with Intention

- 5% is conscious, 95% is unconscious
- Breathing helps us access alpha states (subconscious)
- Use this to our advantage to plant seeds of intentions at deeper, healthier levels of mind.

GUIDED PRACTICE

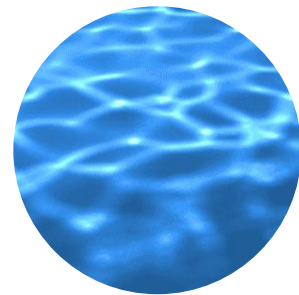
COFFEE CATEGORY: BELLOWS BREATH



- **Bellows Breath: 3 x 20 pulses**
- To level up
 - Add an intention - inner smile :), break the funk! Energeeeee!
 - Increase the intensity of each pulse
 - Increase to 4 x 20, 5 x 20.
 - Experiment with 30 pulses, 40 pulses (with caution).

GUIDED PRACTICE

WATER CATEGORY - ALTERNATE NOSTRIL BREATHING



- **Alternate Nostril Breath, 4:4 x 10 rounds**
- To level up:
 - Add an intention: I am balanced, I am calm
 - Add in Ocean Sound
 - Add in 3-Phase Yogic Breathing or deep diaphragmatic breathing
 - Count on your hand/using a timer, without guided audio, to really get in the zone.
 - Increase # rounds - listen to your body, feel the moment of homeostasis
 - Increase count to **5:5, 6:6, 7:7, 8:8**
 - Add a retention after the inhalation (Triangle Breathing) 4:4:4

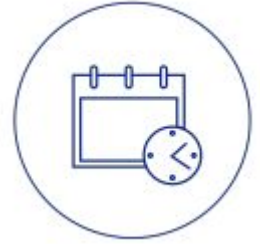
GUIDED PRACTICE

WHISKEY CATEGORY - BOX BREATHING



- **Box Breathing: 4:4:4:4 x 10 rounds**
- **Switch on PNS, bodies ability to heal. Best one to help with digestion.**
- To level up:
 - Add an intention: I am peaceful, I am relaxed
 - Add in Ocean Sound
 - Add in 3-Phase Yogic Breathing or deep diaphragmatic breathing
 - Use a timer, without guided audio, to really get in the zone.
 - Increase # rounds - listen to your body, feel the moment of homeostasis
 - Increase count to **5:5:5:5**

Daily Regime



- 15 minutes, daily:
 - Morning: 5 mins Coffee Breathing
 - Midday / As Needed: 5 mins Water Breathing
 - Before Bed: 5 mins Whiskey Breathing
- Extra breathing therapeutically as needed
- Breath awareness throughout the day

Myth Busting - Review

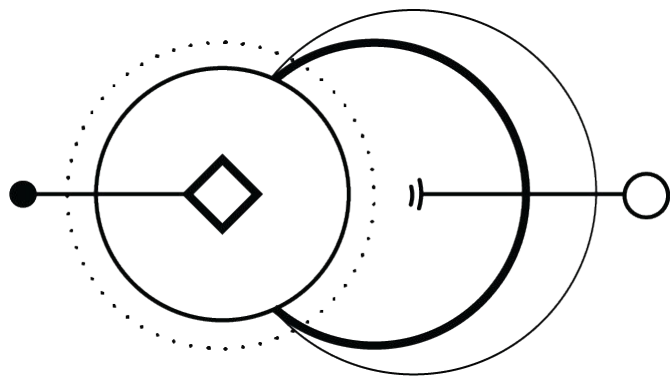
- Myth #1: The more we breathe the healthier we are.
- Myth #2: Taking a bigger breath oxygenates us more.
- Myth #3: Taking a deep breath means taking a big breath.
- Myth #4: Carbon dioxide is toxic.

Skills Review

- 6 Breathing Techniques - up-regulation, down-regulation, balancing
- Ocean Breath - breath control
- 3-Phase Yogic Breathing - breath control
- Deep Diaphragmatic Breathing - thoracic pump & vagus nerve
- Figure-8 Cadence - blueprint for calm/PNS
- Breath holds - boosting CO2/PNS response.
- Pranayama Mudra - breath control

Self Awareness Tools: Recap

1. Nasal Cycle, Nostril Dominance (L vs R)?
2. Connecting your emotions & mood to your physiology using MOT tests, and taking action.
3. 2-Phase or 4-Phase Breathing?
4. Nose Breathing or Mouth Breathing?



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