

Bottoms Up! Somatic Interventions for Neurodivergent Individuals

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Explore the link between
autonomic dysfunction and ASD



Learn body-based techniques to
improve emotion regulation

Objectives



Autonomic Dysfunction

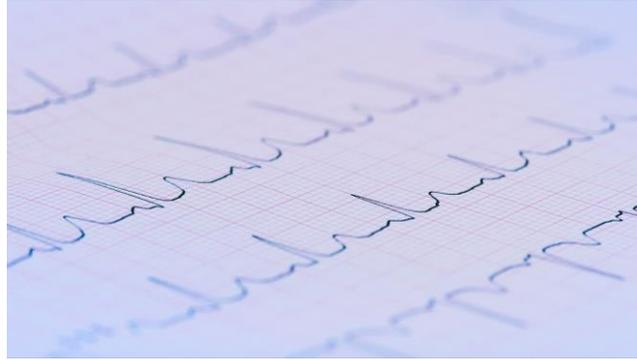
Autonomic Nervous System

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graph TD; A[Autonomic Nervous System] --> B[Sympathetic (Fight/Flight)]; A --> C[Parasympathetic (Rest/Digest)];
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Sympathetic
(Fight/Flight)

Parasympathetic
(Rest/Digest)

Breath and Heart Rate Exercise





IN RESEARCH



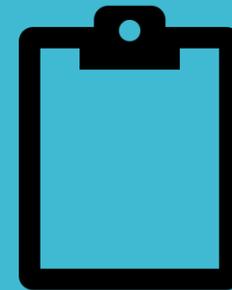
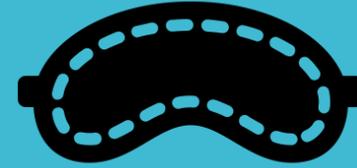
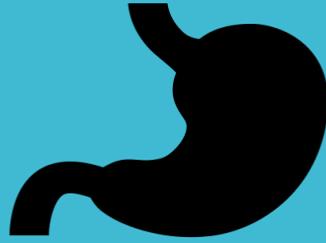
IN THERAPY



IN MEDICINE

Autonomic Dysfunction ... It's Everywhere!

Measuring Autonomic Dysfunction

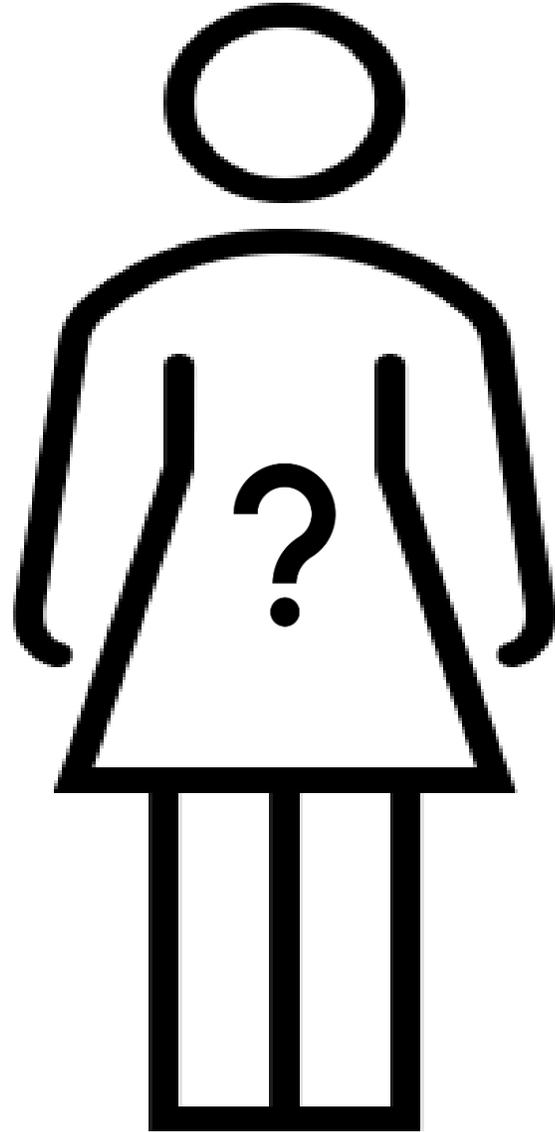


In Therapy

- Emotion regulation as a primary concern
- Tantrums
- Internalizing symptoms (anxiety, depression)

In Medicine

- Examples: clonidine, propranolol, guanfacine
- Mechanism of action
- Improvements in aggression, irritability, anxiety, self-injurious behavior, sleep...



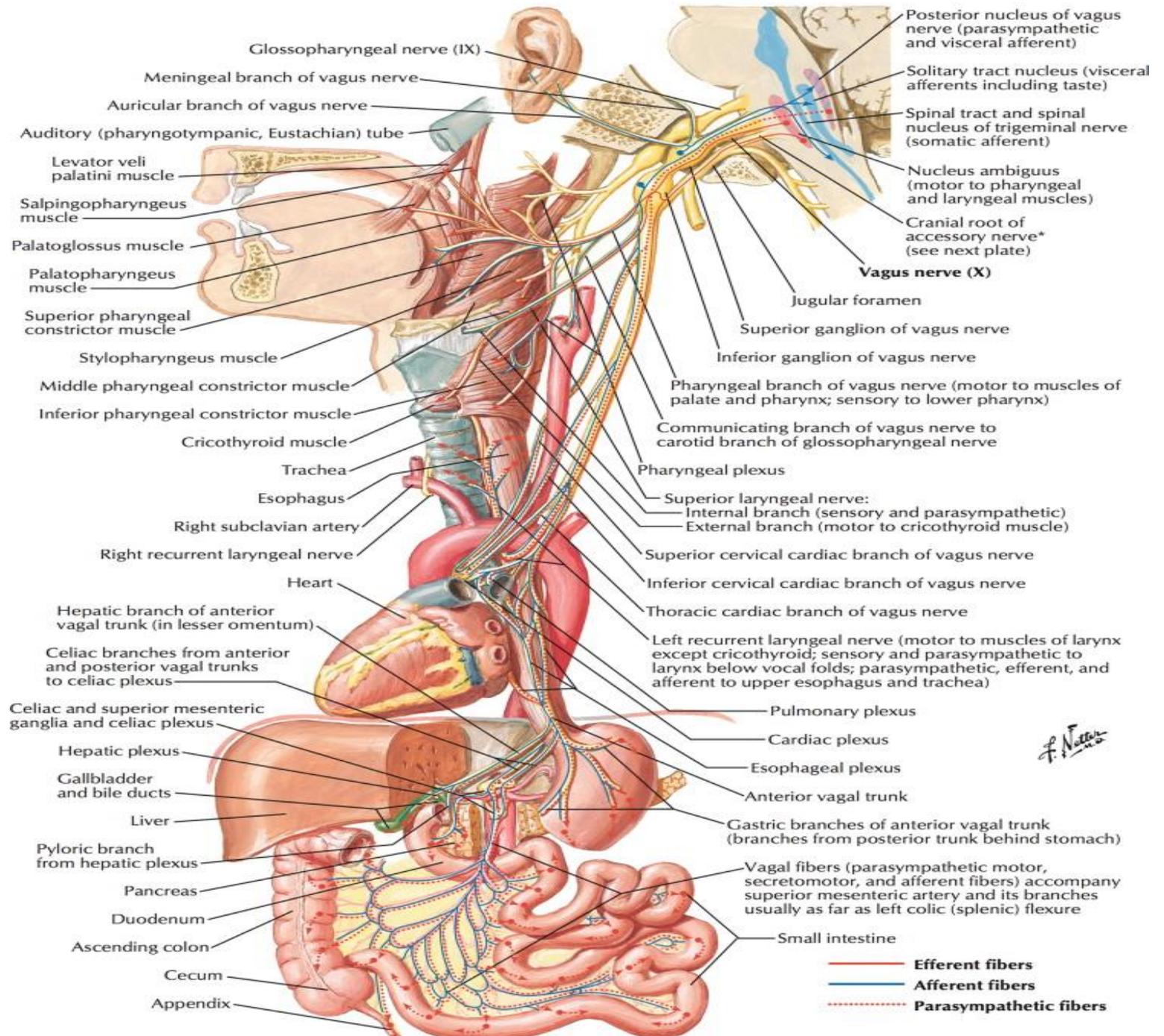
Bonus Barrier:
Interoception
Challenges &
Alexithymia

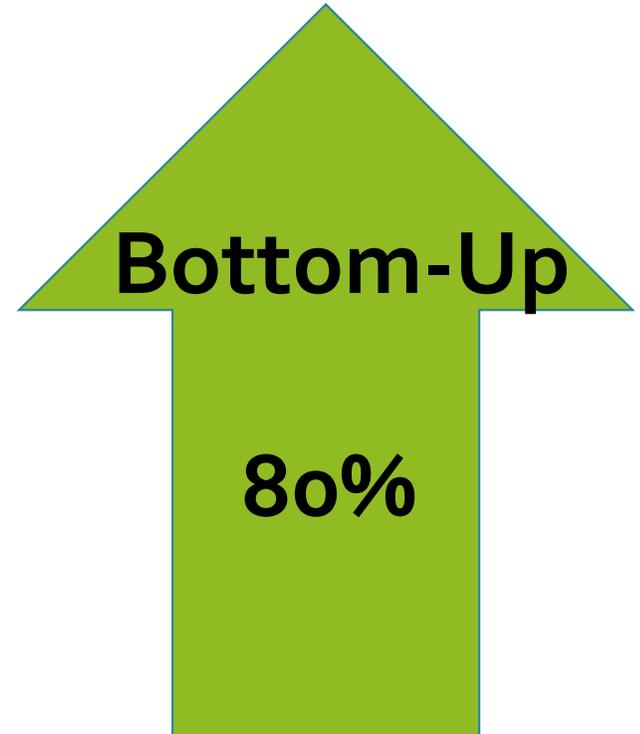
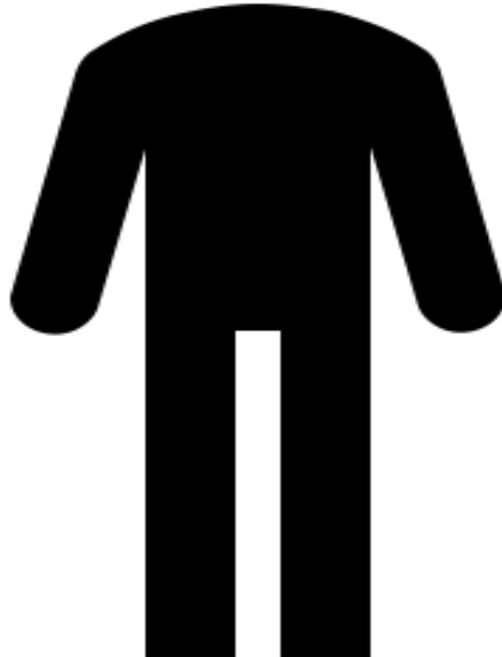
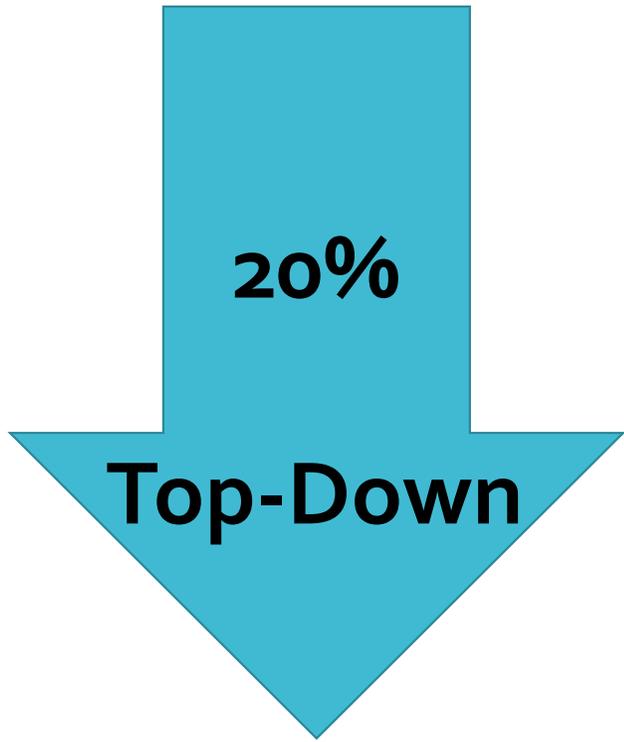
A Foundation for Intervention: Polyvagal Theory



The Vagus Nerve

Vagus Nerve (X): Schema





Top-Down Approaches

- Meaning making
- Change unhelpful thoughts -> change behaviors
- Examples
 - Cognitive Behavioral Therapy
 - Dialectical Behavior Therapy
- Shortcomings



Bottom-Up Approaches

Movement for healing in many cultures

- Yoga
- Tai chi & qigong
- Drumming
- Martial arts
- Capoeira





Safety



Fight/Flight

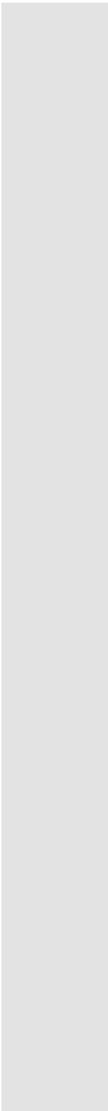


Freeze

3 autonomic states



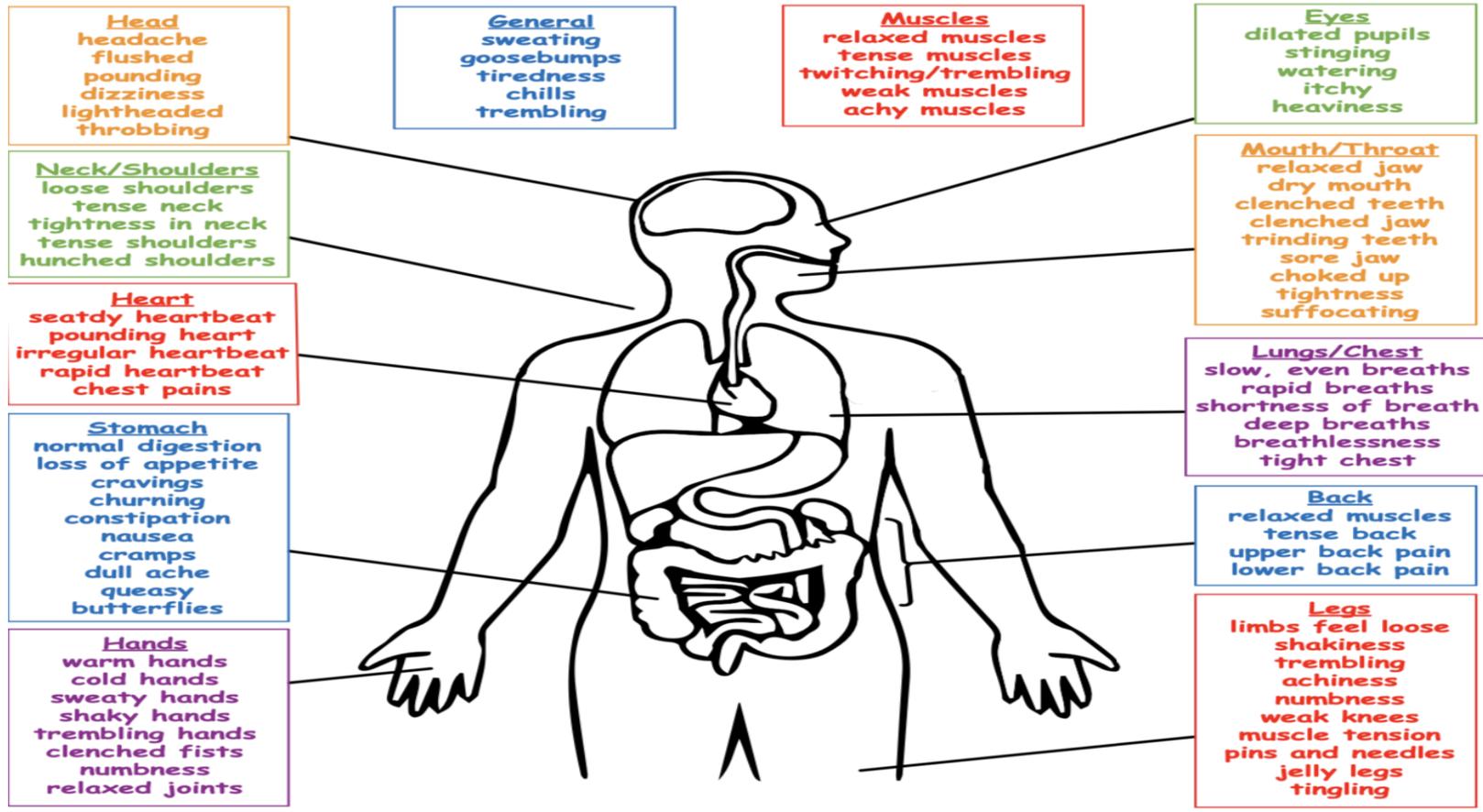
What State Am I In? Learning the Signals

- 1st : notice sensations
 - 2nd : label feelings
- 

Mapping My Feelings When I'm _____

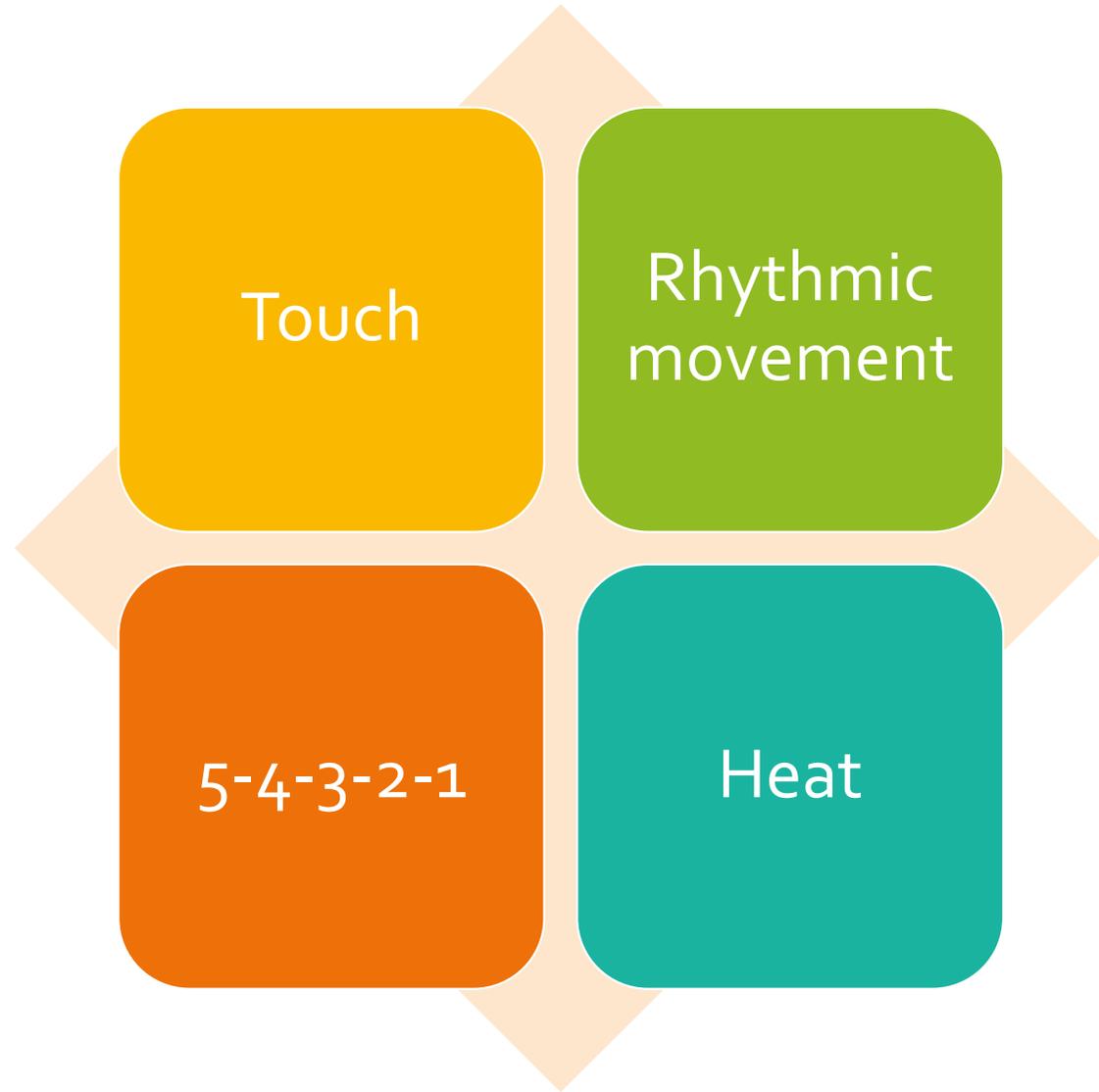
(insert feeling or emotion)

Circle or color all the sensations you feel in your body when you're in this state.
Feel free to add your own sensations that are not listed.



| | LETHARGIC Parasympathetic I (PNS I) | CALM Parasympathetic II (PNS II) <i>Ventral Vagus</i> | ACTIVE/ALERT Sympathetic I (SNS I) | FLIGHT/FIGHT Sympathetic II (SNS II) | HYPER FREEZE Sympathetic III (SNS III) | HYPO FREEZE Parasympathetic III (PNS III) <i>Dorsal Vagus Collapse</i> |
|---------------------------------------|---|--|---|---|--|---|
| | | ◀ "Normal" Life ▶ | | | ◀ Threat to Life ▶ | |
| PRIMARY STATE | Apathy, Depression | Safe, Clear Thinking, Social Engagement | Alert, Ready to Act | React to Danger | Await Opportunity to Escape | Prepare for Death |
| AROUSAL | Too Low | Low | Moderate | High | Extreme Overload | Excessive Overwhelm Induces Hypoarousal |
| MUSCLES | Slack | Relaxed/toned | Toned | Tense | Rigid (deer in the headlights) | Flaccid |
| RESPIRATION | Shallow | Easy, often into belly | Increasing rate | Fast, often in upper chest | Hyperventilation | Hypo-ventilation |
| HEART RATE | Slow | Resting | Quicker or more forceful | Quick and/or forceful | Tachycardia (very fast) | Bradycardia (very slow) |
| BLOOD PRESSURE | Likely low | Normal | On the rise | Elevated | Significantly high | Significantly low |
| PUPILS, EYES, EYE LIDS | Pupils smaller, lids may be heavy | Pupils smaller, eyes moist, eye lids relaxed | Pupils widening, eyes less moist, eye lids toned | Pupils very dilated, eyes dry, eye lids tensed/raised | Pupils very small or dilated, eyes very dry, lids very tense | Lids drooping, eyes closed or open and fixed |
| SKIN TONE | Variable | Rosy hue, despite skin color (blood flows to skin) | Less rosy hue, despite skin color (blood flows to skin) | Pale hue, despite skin color (blood flow to muscles) | May be pale and/or flushed | Noticeably pale |
| HUMIDITY | Skin | Dry | Dry | Increased sweat | Increased sweat, may be cold | Cold sweat |
| | Mouth | Variable | Moist | Less moist | Dry | Dry |
| HANDS & FEET (TEMPERATURE) | May be warm or cool | Warm | Cool | Cold | Extremes of cold & hot | Cold |
| DIGESTION | Variable | Increase | Decrease | Stops | Evacuate bowel & bladder | Stopped |
| EMOTIONS (LIKELY) | Grief, sadness, shame, disgust | Calm, pleasure, love, sexual arousal | Anger, shame, disgust, anxiety, excitement, sexual climax | Rage, fear | Terror, may be dissociation | May be too dissociated to feel anything |
| CONTACT WITH SELF & OTHERS | Withdrawn | Probable | Possible | Limited | Not likely | Impossible |
| FRONTAL CORTEX | May or may not be accessible | Should be accessible | Should be accessible | May or may not be accessible | Likely inaccessible | Inaccessible |
| INTEGRATION | Not likely | Likely | Likely | Not likely | Impossible | Impossible |
| RECOMMENDED INTERVENTION | Activate, Gently Increase Energy | Continue Therapy Direction | Continue Therapy Direction | Put on Brakes | Slam on Brakes | Medical Emergency CALL PARAMEDICS |

Moving out of Freeze



Moving out of Fight/Flight

Any long, slow exhale

“Voo” sound

Cold exposure

Bilateral stimulation

Jin Shin Jyutsu poses

Increasing Vagal Tone

Ear massage

Gargling

Humming

Singing

Go outside!

Exercise

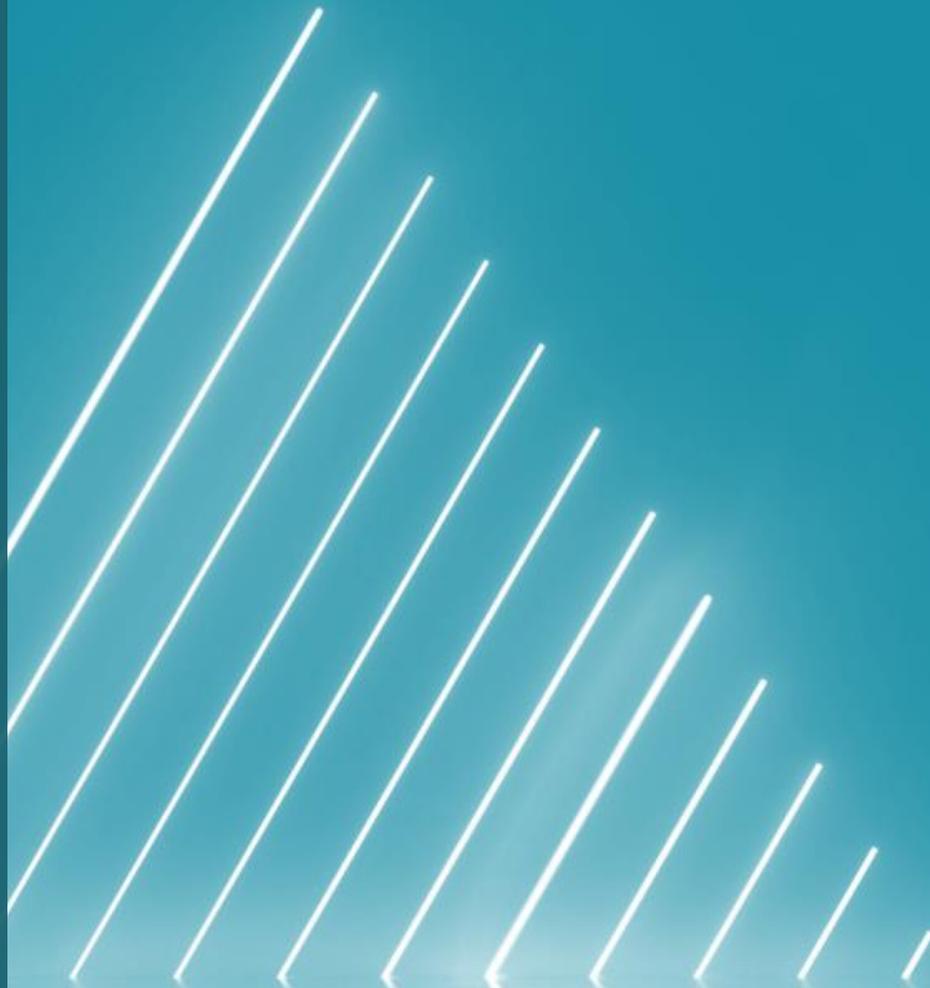
Probiotics

“Sideways Approach”

- Mindfulness
- Attention to body sensations + observe their impermeable nature
- Examples:
 - Dr. Dan Siegel’s Wheel of Awareness
 - Acceptance & Commitment Therapy

Closing Thoughts

“There is a voice that doesn’t
use words. Listen.” - Rumi



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