



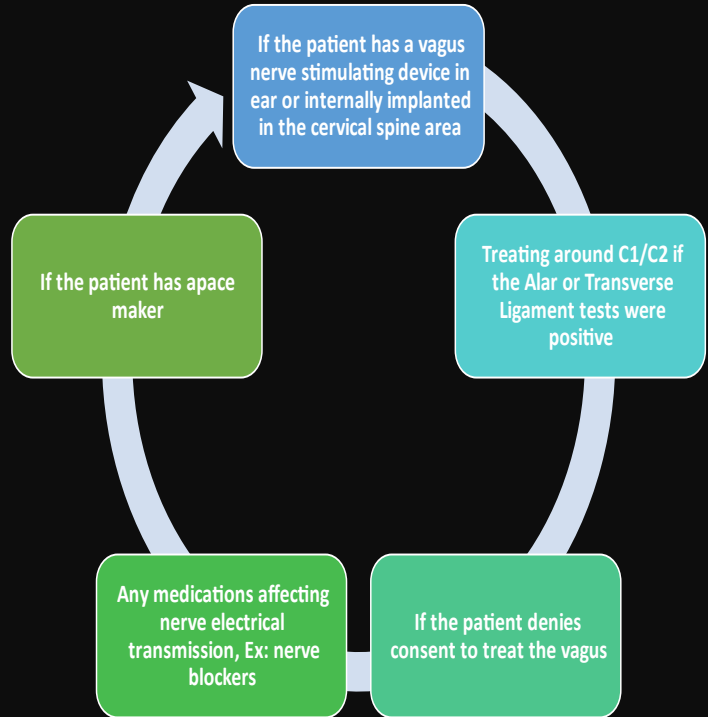
Welcome Day 2 of the Viva Las Vagus Course

**Some people tap their feet, some people snap their fingers, and some people sway back and forth. I just
sorta do 'em all together, I guess**

Elvis Presley

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Contraindications and Precautions



Vagus Nerve Assessments

Inquiries:

- Is the voice hoarse?
- Hard fall on coccyx, or coccyx injury?
- Concussion(s) history?
- TMJ: Grinding / Extensive dental work / trauma / achiness of jaw muscles / clencher / AROM
- Tinnitus? Bilateral or ipsilateral?
- Postural lightheadedness
- Dry mouth or eyes
- Impotence
- Hyperthermia
- Nocturnal diarrhea
- Gastroparesis
- Urinary or bowel incontinence



Vagus Nerve Assessments



Postural Scan

C1 via chin and manubrium and mastoid processes

Dowagers Hump, FHP

Thyroid scars or enlargement

Apical breather

Tonicity of suboccipital muscles

Hypertonic Upper traps, levator scapulae, scalenes, spinalis cervicis, semispinalis cervicis, SCM, semispinalis capitus, splenius capitus, longissimus cervicis and iliocostalis cervicis

Fascial Lines

Swollen, puffy, face and neck areas

Strained / tired eyes

Visceral Listen

AROM Assessments, pre and post visceral contact

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Vagus Nerve Assessments

Seated

- Heart Rate (Variability)
- Blood pressure
- Uvula, say Aaaaaahhhhhhhh
- Gag reflex
- TMJ clicking / AROM / hypertonicity
- Seated Jugular Foramen Test
- AROM Assessment
- Checking and comparing bilateral pupil dilation
- Swallow Assessment
- Myotome Testing: C1, C2, C3 and C4
- Visceral Listen

Supine

- Sub Occipitals and C2 SP space
- Chin and manubrium alignment
- Testing the Alar and Transverse Ligaments
- Carotid Sinus Reflex Test
- Blood pressure and heart rate (could also be assessed in seated)
- Visceral Listen
- Touch in
- Facial Drag
- Diaphragms
- PROM Assessments

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Vagus Nerve Self Care

- *SOBA / Cycle of Attunement / Harmonic Resonance*
- *Release pelvic floor with squats or happy baby*
- *Massage tragus area of ears*
- *SCM drags from mandible to 2nd/3rd ribs with or without AROM of Csp*
- *Stretch the sub occipitals / Csp ES / Upper traps / Levator scapulae and rhomboids*
- *Stretch the Vagus nerve in Sphinx with Csp rotation holds to each side*
- *Support base of occiput and look Right until yawn or sigh, then Left side*
- *In seated or supine, gentle ear pulls, include slow TMJ and/or eye movements*
- *Tapping or squeezing extremities then core, noticing sensations and opening awareness to self in the moment*
- *Pressing TCM points (video below)*

<https://www.youtube.com/watch?v=beQ6c7JCOMc>

Receive Vagal Oriented Treatments



Infrared Benefits for Healthy Vagal Tone

Improve blood circulation Reduces chronic pain Reduces oxidative stress Mimics a cardiovascular workout

Reduces Major Depressive Disorder (MDD) and depression in general by increasing Brain-Derived Neurotrophic Factor

Improves recovery post injury or surgery Increases norepinephrine levels which may to help treat people with ADHD

Promotes detoxification; heavy metals and molds Reduces blood pressure Improves skin health

Improves production of myelin, the saunas heat stress increases prolactin which promotes the production of myelin

Improves flexibility Improves Asthma conditions Boosts cellular health, in particular mitochondrial biogenesis

Improves symptoms associated with Chronic Fatigue Syndrome and Fibromyalgia

Reduces Coronary risk factors in potentially compromised people, Ex: smokers or diabetes

Reduces the risk of developing dementia *“Researchers tracked the health of more than 2,300 men in Finland for about 20 years. The men who used a sauna four to seven times each week had a 66 percent lower chance of developing dementia than men who used a sauna just once a week (6468).”*

Reduces psychological effects associated with anorexia Reduces severity and frequency of tension headaches

Supports thyroid function by releasing halogens

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Cold Immersion Benefits for Healthy Vagal Tone

Decrease inflammation Increases endorphins Improves sleep

Spikes dopamine and other neurotransmitters like norepinephrine

Improves mental clarity and ability to focus Reduces general aches and pains

Boosts injury recovery and reduces post operation healing time span

Increases testosterone Promote lymphatic drainage Accelerate metabolism

Improves circulation Increase flexibility and range of motion

Improves mental health, decreases stress levels, anxiety and depression

Enhances skin and hair health Promotes Thermogenesis or increasing overall energy

Improves alkalinity in blood levels Reduces frequency and intensity of lung infections

Stabilizes blood sugar levels Improves liver functions Minimalizes migraine frequency

Increases endurance Boosts confidence and will power

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Interoception

AKA Sensory System or the Body Emotion Connection System

The brain's perception regarding the internal state of the body, considered the '8th Sense'

There is constant communication between brain and internal organs, cardiovascular system, gut, bladder, kidneys, muscles, fascial system, inner ears, skin, bones and proprioceptive receptors

Research has linked interoception to being the foundations of 'intuition' and helps humans form the basis of 'self'.

Bodily receptors send afferent information to the insula, the brain's interoception center, and determine how a human feels about this information.

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Implicit or Explicit Interoception

Implicit or unconscious interoception:

From birth, perhaps in utero as well

Hunger, thirst, body temperature awareness

Baby acts based on discomfort and this action is in turn rewarded by 'feel -good' sensations offered by a caregiver

A foundation in the development of the attachment process and social engagement

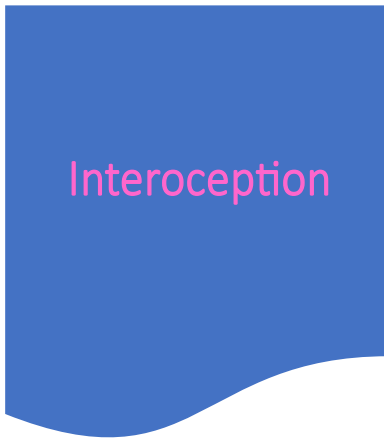
Explicit or conscious interoception :

Also present at birth, perhaps earlier

Baby learns internal sensations are connected to events, things and people

Internal responses are stored in the brain as Somatic Markers or Interoceptive Predictions, these will help guide decision making in the future

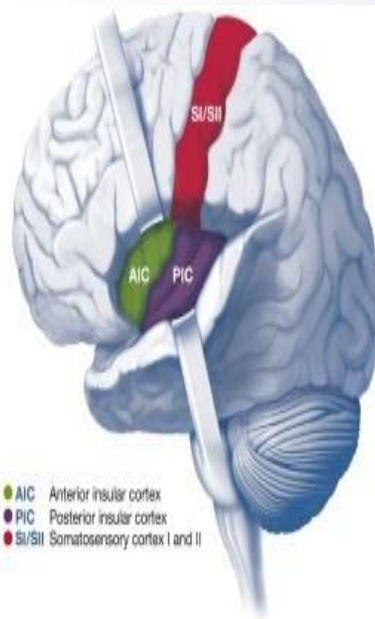
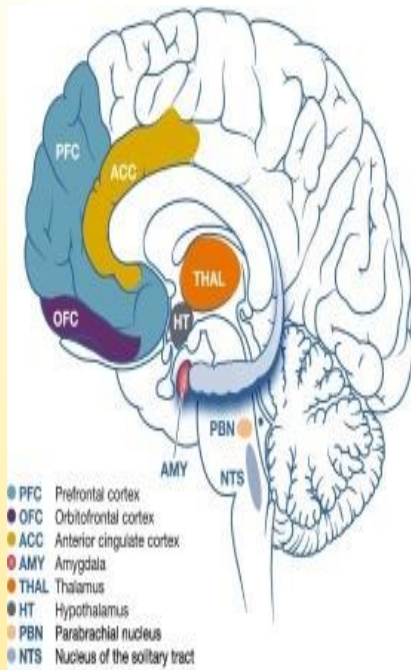
A foundation for developing self-regulation, seeking comfort and avoiding negative experiences



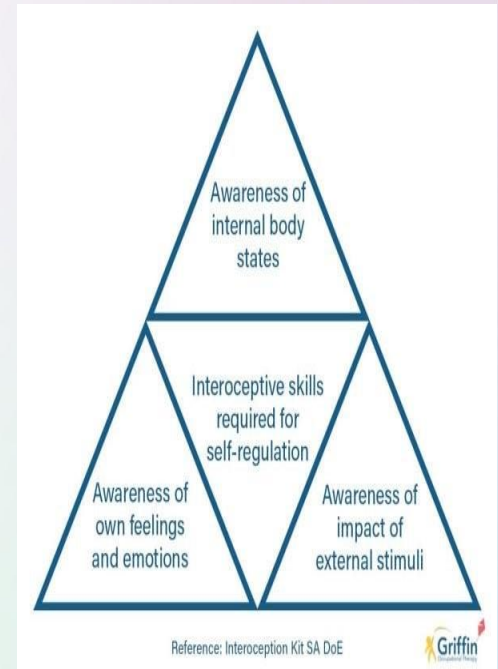
Action Inspiring Emotions	Balancing Emotions
Happiness	Hunger
Excitement	Temperature
Fear	Pain
Shame	Bathroom/ Constipation
Sadness	Thirst
Guilt	Satiety
Calm	Sexual Arousal
Jealous	Fever/illness
Anxiety	Sensory overload
Irritation	Sleepiness
Focus	Physical exertion
Boredom	
Distraction	



Interoception

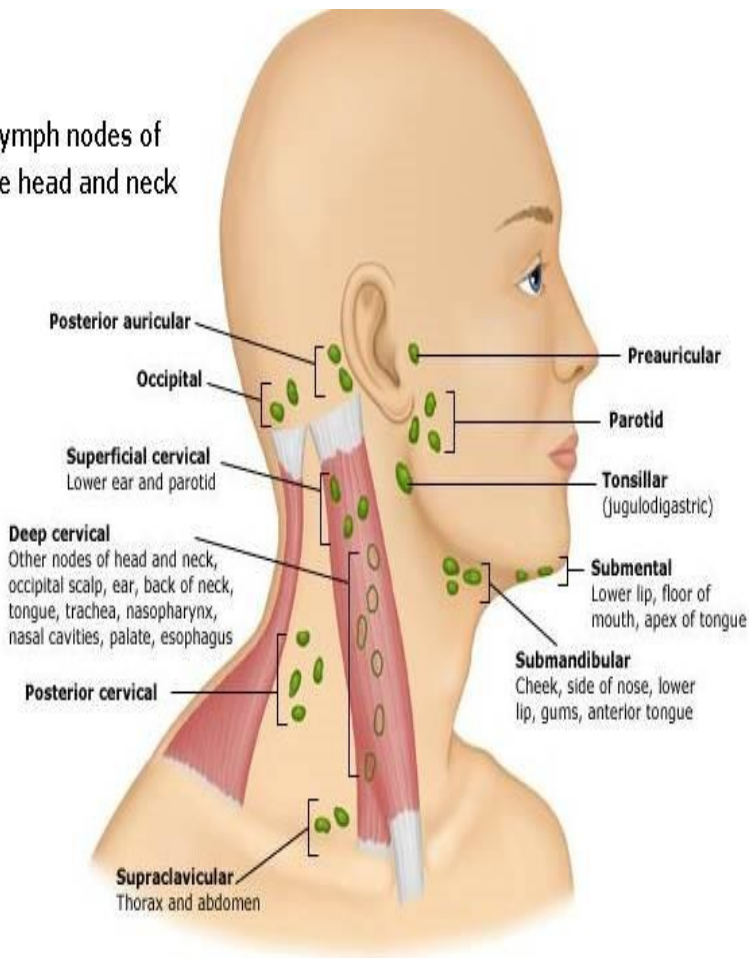


Trends In Neurosciences



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Lymph nodes of the head and neck



Vagus Lymphatic Therapy

MR Thoracic and Cranial base diaphragms

Open Terminus, supraclavicular lymphotome

Axillary Nodes

Cysterna Chylica

Axillary Nodes

Terminus

Supraclavicular Chain

Spinal accessory Chain

Jugular Chain

Superior Deep Cervical and Jugulodigastric Nodes

Submandibular, Submental, Mandibular and Tonsillar Nodes

Occipital, Posterior and Preauricular Nodes

Spinal Accessory Chain

Terminus

Vagal Craniosacral Therapy

Ankle / Foot contact... Touch In
Sacral and coccygeal Contact
Thoracic Inlet, Hyoid and Cranial base
diaphragms
Beckers Hold or Vault Hold 3 (occipital
base, 4th ventricle and SBJ)
Sutherlands' Hold or Vault Hold 1 (3rd
ventricle, tentorium, parietal, sphenoid
and temporal)
Ankle / Foot contact Re-Assessment
Vomer

Options:

Biodynamic
Inner ear / TMJ contact
Pharyngeal arches
Eyes
Heart and Occiput
Occiput and Frontal Bones
Abdominal Midline
Coccyx Contact
Glabella and OAJ contact



Vagal-Gamma-Aminobutyric Acid (GABA) theory

GABA and Glutamate

Enteric Nervous System (ENS)

Hypothalamic Pituitary Adrenal Axis (HPA)

Autonomic Nervous System (ANS)

Vagus

GABA:

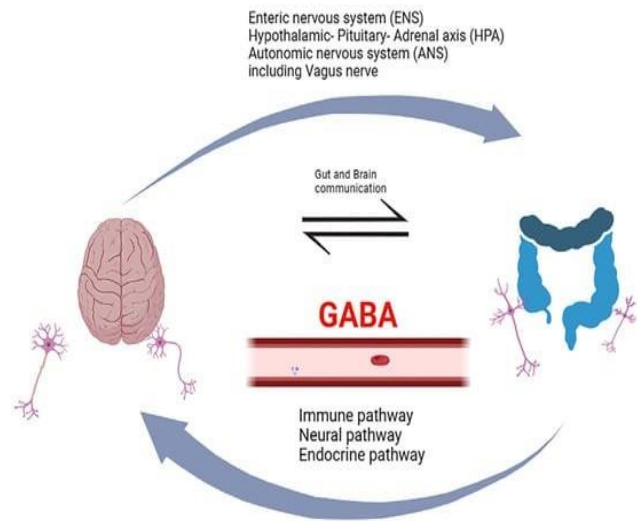
- inhibitory amino acid NT
- because GABA reduces neural transmission, increased GABA activity can be sedating... similar to alcohol
- low bodily levels of GABA leads to *nervousness, anxiety and over stimulation*
- gut microbiome makes NTs' including GABA

Functions

- Improves mood/immunity/ muscles/ sleep
- Reduces BP / stress / anxiety

Glutamate:

- excitatory amino acid NT
- Food sources include: miso/kimchi/tempeh



HPA Axis

The HPA axis is an efficient and dynamic intertwining of the CNS and endocrine system. Restoring homeostasis to the HPA Axis is one of the primary goals of patient care when working with individuals living with long term stress.

Hypothalamus

- Part of the diencephalon and is a neuroendocrine gland
- Mediates the endocrine, autonomic and behavioral functions
- Controls the release of 8 major hormones by the hypophysis
- Involved in temperature regulation / Control of food and water intake / Sexual behavior and reproduction
- Maintains daily cycles in physiological state and behavior
- Mediation of emotional responses

Pituitary

- Often called the Master Gland because it controls many functions of other bodily glands
- Is located inferior to the hypothalamus and reacts to signals from the hypothalamus
- Has 2 lobes, Anterior which accounts for 80%
- Hypothalamus controls the Anterior lobe by releasing hormones through connecting blood vessels and Posterior lobe via nerve impulses

Anterior Lobe Secretes:

Adrenocorticotrophic hormone (ACTH), corticotropin, which stimulates the adrenal glands to produce cortisol and other hormone

Follicle-stimulating hormone and luteinizing hormone, which stimulate the testes to produce sperm, the ovaries to produce eggs and the sex organs to produce sex hormones (testosterone and estrogen)

Growth hormone, which regulates growth and physical development and has important effects on body shape by stimulating muscle formation and reducing fat tissue

Prolactin, which stimulates the mammary glands of the breasts to produce milk

Thyroid-stimulating hormone, TSH, which stimulates the thyroid gland to produce thyroid hormones

Endorphins and Enkephalins to inhibit pain sensations and control the immune system

Posterior Lobe hormones include:

Vasopressin, antidiuretic hormone, regulates the amount of water excreted by the kidneys and is therefore important in maintaining water balance in the body

Oxytocin causes the uterus to contract during childbirth and immediately after delivery, stimulates contractions of the milk ducts in the breast

Adrenal Cortex

The outer region is called the Adrenal Cortex and is responsible for producing:

Cortisol, a hormone that assists in regulating metabolism, suppressing inflammation, blood pressure, circadian rhythms and raises blood sugar

Aldosterone, controls blood pH by controlling the levels of electrolytes in the blood

Inside the cortex is the Adrenal Medulla that produces 'stress hormones' including: Epinephrine (adrenaline) and Norepinephrine (noradrenaline), these initiate fight or flight responses including increased HR, vasoconstriction of visceral blood vessels, vasodilation of skeletal muscle penile and vaginal smooth muscles and assisting glucose metabolism

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Multivagal System

The Multivagal System (MVS) integrates the Vagus nerve above the respiratory diaphragm with the Vagus nerve below the respiratory diaphragm and this MVS considers the vagus nerve to be critically important physiological and metabolically part of the ANS.

Social Safety

Safety is the most fundamental principle of the Multivagal Safety System. The term Social Safety is what Stephan Porges calls Neuroception. This is the way in which the brain interprets social signals from other people as safe or not, especially their faces, posture and movement. Neuroception is determining people safety. Are people safe to be in relationship with? Neuroception is determined by the SES

Emotional Safety

The heart represents emotional safety, a deep safety, integrating three levels: at a metabolic level (molecular exchange of CO_2), at the physiological level of the SES (behavior), and at a spiritual level (loving kindness and compassion). Thus, emotional safety is spiritual safety. The Vagus nerve transports pleasure information from the pelvis (via the hypogastric nerves) up through the abdominal aortic Plexi to the heart and brain. The transport of pleasure and relief via specific hormones such as oxytocin and neurotransmitters is a very important function of the Vagus nerve and an important experience of the heart.

Metabolic Safety

The abdomen via the Vagus nerve is about metabolic safety. This corresponds to proper care and feeding of the gut microbiome, the detoxification of the large intestine, and a complex interaction with the cardiovascular, enteric, endocrine, and immune systems located in and around the lining of the gut. The Vagus nerve is monitoring the gut microbiome, liver, spleen, and endothelium of the viscera for inflammation and then relays this information to the heart and brain and back down for an anti-inflammatory response in the liver and spleen to maintain homeostasis. Once inflammation is in place metabolically in the gut, the feeling of inner safety erodes and there is the internal sense "something is not quite right". The same inflammatory processes being monitored by the Vagus include monitoring for excess glucose in the bloodstream associated with inflammation. Metabolic safety is a deep form of psychological safety

Moral Safety

This involves the Pelvic Organs and the 3 Rs: reproduction, recreation, and relief. Moral safety happens in an environment that allows for urination, defecation, and orgasm. Although the Vagus nerve does not directly connect to the organs in the pelvis in the human, it is indirectly connected via the pudendal nerve, the sacral outflow of the PNS, and the sacral plexus. These three sacral nerveplexi contribute to sexual arousal and orgasm, urination including defecation, and flatulence.

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PolyVagal Theory

Developed by Dr. Stephen Porges

Three Vagal Subsystems:

1. Ventral-vagal Complex or VVC (anterior) (safety)

- deriving from about 200 million years ago and present only in mammals
- originates from the nucleus ambiguus
- involved with social and attachment behaviors
- does not travel below the diaphragm and myelinated
- branches to the heart, lungs, larynx, middle ear, throat and facial muscles
- this system involves returning a smile and nodding in agreement with a friend
- the ventral system links CN's to sound perception, vocalization, and facial expressions
- Porges refers to this system as the Social Engagement System (SES)
- when activated there is a feeling of safety/ comfort/ bonding with others also curiosity and play are experienced in this state
- ventral vagus is involved with orgasms

2. The sympathetic nervous system

- the SNS evolved from the reptilian period of about 400 million years ago
- when activated, the individual is aroused to prepare for mobilization and action
- blood is shunted towards our limbs for fight or flight purposes
- without fear this system:
prepares body for stimulating activities such as sports/ dance/ passionate discussions/ elation/ joy

3. Dorsal-vagal Complex or DVC (posterior) (danger)

- most primitive of these three systems
- originating 600 million years ago and travels below the diaphragm
- unmyelinated and also includes the NTS and AP
- plunges below diaphragm and innervates kidneys, stomach, intestines
- designed to immobilize and conserve energy during a shutdown state = freeze
- the internal organs are targeted and slowed functions... HR decreases/ breathing slows/ numbness
- without fear this system enables:
joy regarding low level activities such as relaxation/ meditation/ yinn or restorative yoga
experiencing low -arousal emotions such as peace/ calm/ relaxation/ contemplative states.

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Vagal Visceral Release

Touch In

Assess organs in supine (seated or standing), can also assess AROM

Midline contact with, or without, Vagal contacts at mastoid processes or SCjt

Contact anywhere indicated.... Inherent Treatment Plan

Specifics:

Heart and Uterus / Bladder

Celiac Plexus / Occiput and Indicated Organ

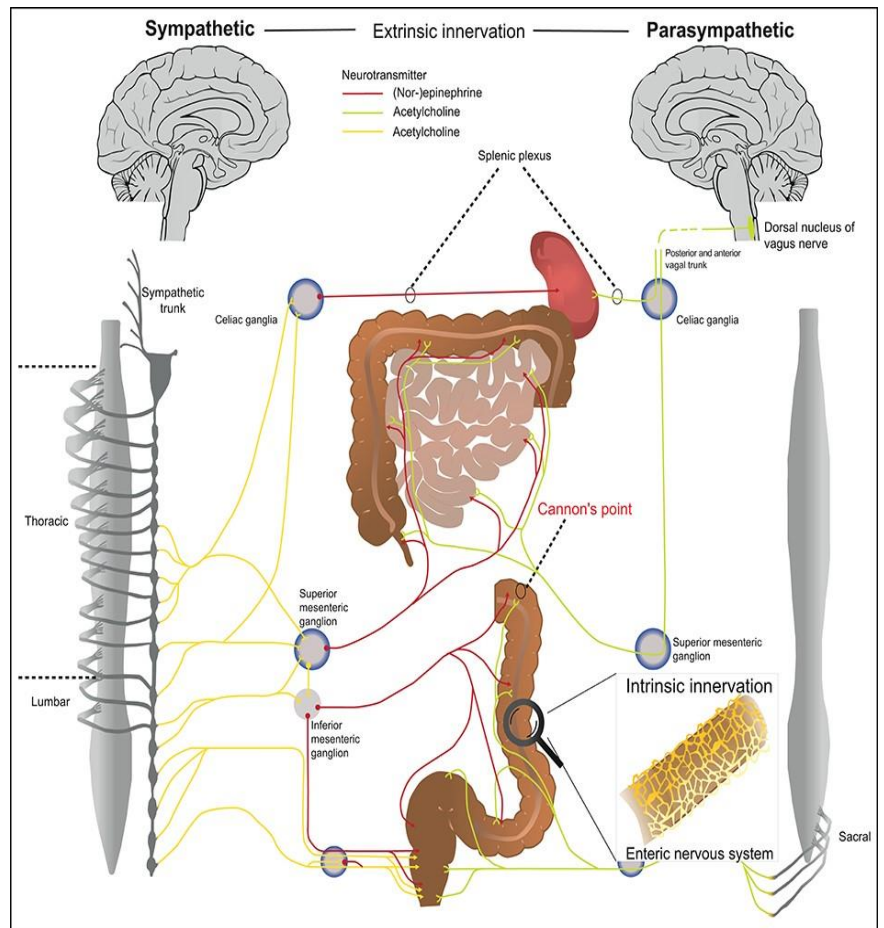
Adrenals

Sphincters

Thyroid / Throat

Cannons Point

Touch In Re-Assessment



Sphincters

Esophageal

Pyloric

Duodenum- Jejunum

Odi

Ileo-Cecal

