



National American Indian & Alaska Native

ATTC

Addiction Technology Transfer Center Network
Funded by Substance Abuse and Mental Health Services Administration

IOWA

SAMHSA
Substance Abuse and Mental Health
Services Administration

The Impacts of Trauma In The Brain: A Holistic Behavioral Health Discussion

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July 20, 2022

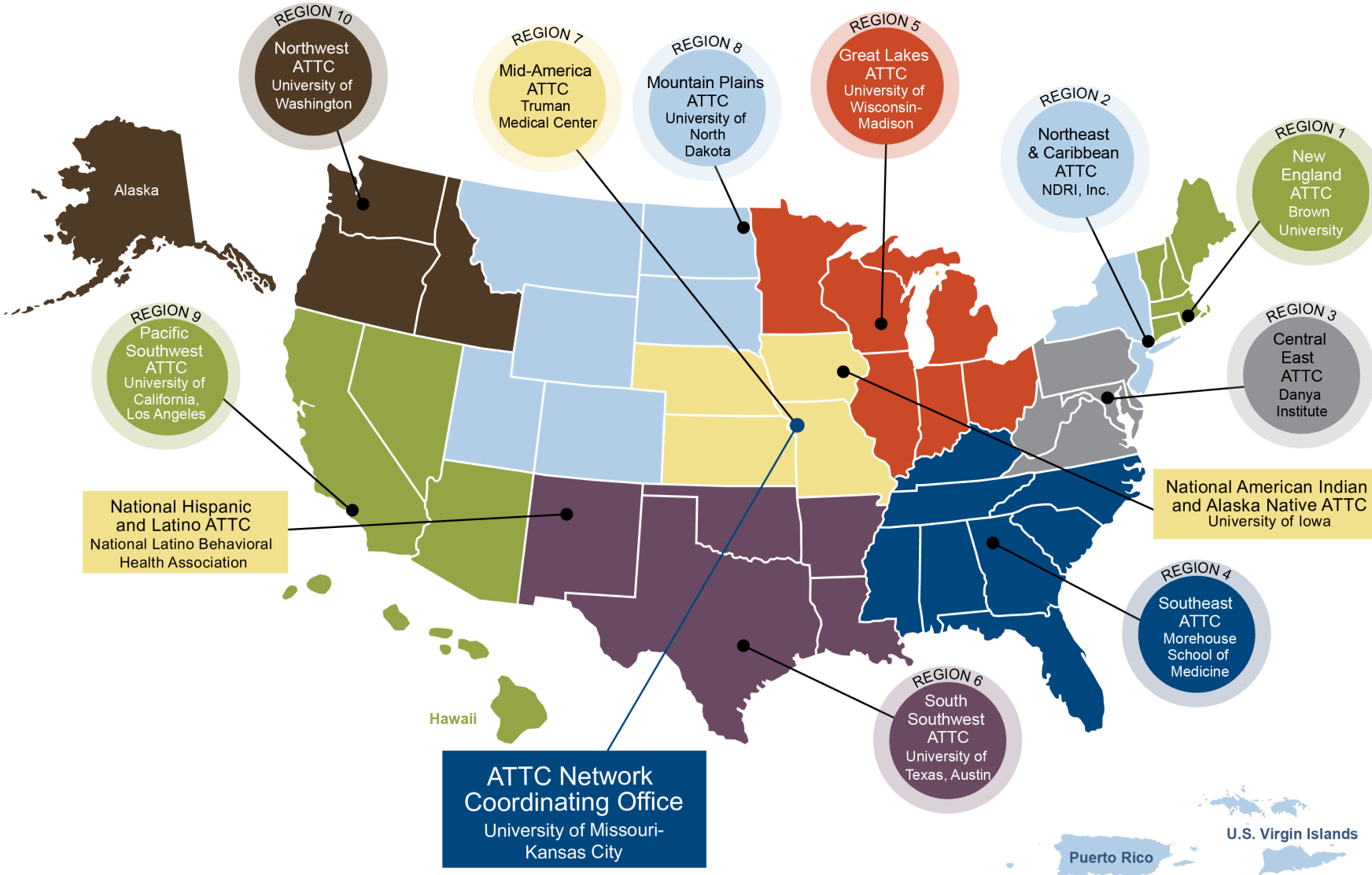


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U.S.-based ATTC Network

American Indian & Alaska Native Addiction Technology Transfer Center



SAMHSA

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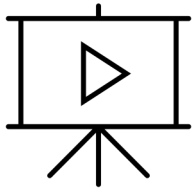
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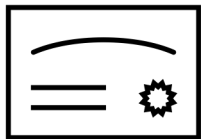


Follow-up

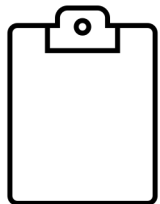
Following today's event, you will receive a follow up email, which will include:



Links to the presentation slides and recording, if applicable



Information about how to request and receive CEUs



Link to our evaluation survey (GPRA)



Land Acknowledgement

We would like to take this time to acknowledge the land and pay respect to the Indigenous Nations whose homelands were forcibly taken over and inhabited.

Past and present, we want to honor the land itself and the people who have stewarded it throughout the generations.

This calls us to commit to forever learn how to be better stewards of these lands through action, advocacy, support, and education.

We acknowledge the painful history of genocide and forced occupation of Native American territories, and we respect the many diverse indigenous people connected to this land on which we gather from time immemorial.

While injustices are still being committed against Indigenous people on Turtle Island, today we say thank you to those that stand with Indigenous peoples and acknowledge that land reparations must be made to allow healing for our Indigenous peoples and to mother earth, herself.

Dekibaota, Elleh Driscoll, Meskwaki and Winnebago Nations

Ttakimaweakwe, Keely Driscoll, Meskwaki and Winnebago Nations

Ki-o-kuk, Sean A. Bear, 1st. Meskwaki





Today's Speakers

Theresa Sault-Brill I have a vast background due to Traditional Elder's coming to me for various needs, concerns and issues over the span of my adult life. I did not seek to make careers in the Criminal Justice Field or Psychology fields. As a Spiritual and Cultural Woman, I have learned that our solutions are in our culture. I only was seeking to gain the educations, training and experiences to obtain understandings in all aspects that impact my people and other Indigenous peoples; though this so I could be able to truly help in education, empowerment and healings. Upon dealing with the gambit of sufferings throughout Indigenous Communities I learned that any and all portions of the systemized ways are rapidly and progressively failing Indigenous Communities across the board (as seen in our reporting percentage rates). Through my life experiences, educations and trainings we can show how our ways of learning, going about counseling etc. is the most effective, and as Traditional Sovereign People we can prove and justify our cultural ways to implement our real and needed solutions.

Today's Speakers

American Indian, Dan Foster was born and raised in the West. He served as an Army Sergeant, 1969-71. He graduated from Willamette University, Salem OR, then on to his Doctorate (PsyD) from Baylor University in 1980. He received an MS in Clinical Psychopharmacology in 2011. He was a collegiate, national and international athlete.

He retired after 37 years of Federal Service, to include employment with the Bureau of Prisons and Indian Health Service. He was the first National Director of the Bureau of Prisons Drug Abuse Programs, overseeing drug treatment, behavioral health, forensic and psychiatric inpatient programs during his tenure.

His final 23 years, he served with the Indian Health Service at two locations, in Montana and South Dakota. He served in various supervisory, management and administrative roles with the BOP and IHS, working primarily in hospital and clinic settings.

He and his wife, a Ph.D. in psychology and American Indian, adopted numerous children, including special needs children. They contributed to the development of American Indian Graduate Education in Clinical Psychology. They have been advocates, research consultants, and educators as well. They live a Traditional and Ceremonial Life in contemporary times.

The Impacts of Trauma In The Brain: A Holistic Behavioral Health Discussion

By: Theresa Sault-Brill

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Guest Speaker: Dan Foster, Psy.D,

Sesseton Sioux

fosterd202@hotmail.com

Decide.

So do it. Decide.

Is this the life you want to live?

Is this the person you want to love?

Is this the best version you can be?

Can you be stronger?

Kinder, more compassionate?

Decide.

Breathe in.

Breathe out and decide.

(Grey, n.d.)

Topic Points:

- **Sources, Types & a Lifespan of Trauma to the Indigenous**
- **Biopsychology: Understanding the Movement of Trauma**
- **Understanding & Mapping Traumas Impacts**
- **Positive Psychology & Cultural Teachings: Where There's a Will – We Are Gifted & Able**
- **Learning to Catch Self, Guard Self & Care for Self**
- **Healing & Rebuilding IS Possible**
- **Resources**

A Lifespan of Trauma

Mental, Emotional, Physical, Sexual, Spiritual, Psychological, Systemic

Verbal Abuse at Home
Sexual Abuse at Home
Sexual Abuse from School, Streets, Significant Other
Physical Abuse at Home
Bullying
Various forms of Racist Attacks
Gangs (attacks or initiation)



Loss of Loved One's
Murder
Human Trafficking
Disabled Family

Domestic Violence
Addiction
Poor Diets
Neglect
Abandonment
Spiritual Encounters

**Think on what & how many chemicals are released for
Each incident, the memories reoccurrence, fears of it
Reoccurring.**

Now ADD other incidents of trauma + the above listed.

Just By Youth Alone – Couple with Adulthood

“Today, a vast majority of American Indian and Alaska Native children live in communities with alarmingly high rates of poverty, homelessness, drug abuse, alcoholism, suicide, and victimization,” the report [states](#). “Domestic violence, sexual assault, and child abuse are widespread. ***Continual exposure to violence has a devastating impact on child development and can have a lasting impact on basic cognitive, emotional, and neurological functions.***”

(Some examples of how power posing can actually boost your confidence, n.d.) (CULP-RESSLER, 2014)

Our Ancestors Were Not Strangers To Prolonged Suffrage Yet They Knew How To Persevere & Truly Live

Attitude IS Everything. Attitude OPENS Perspective. Perspective OPENS Possibilities.

* Bypassing ego to see, embrace & find peace & joy in potential.

* Albert Einstein spoke on judging a bird or fish by their abilities.

What if you were a bird, but now are a fish. The Old One's would
Say... Have fun swimming & exploring your new world!

Biopsychology: Where it Starts

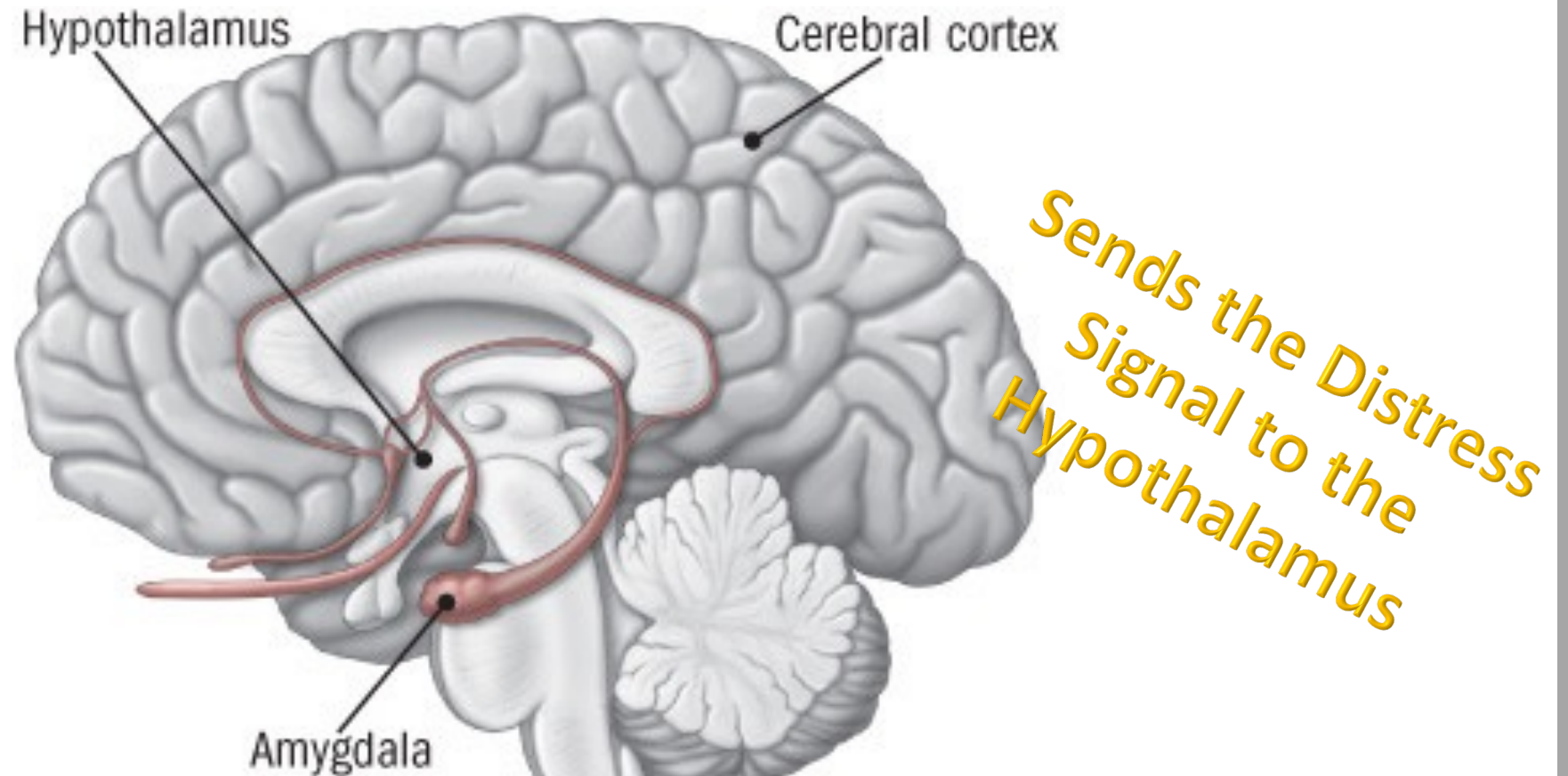


USUALLY SOUND – HEAR
THEM COMING, SOUND OF
THEIR VOICE, VEHICLE,
DOOR OR FOOTSTEPS.



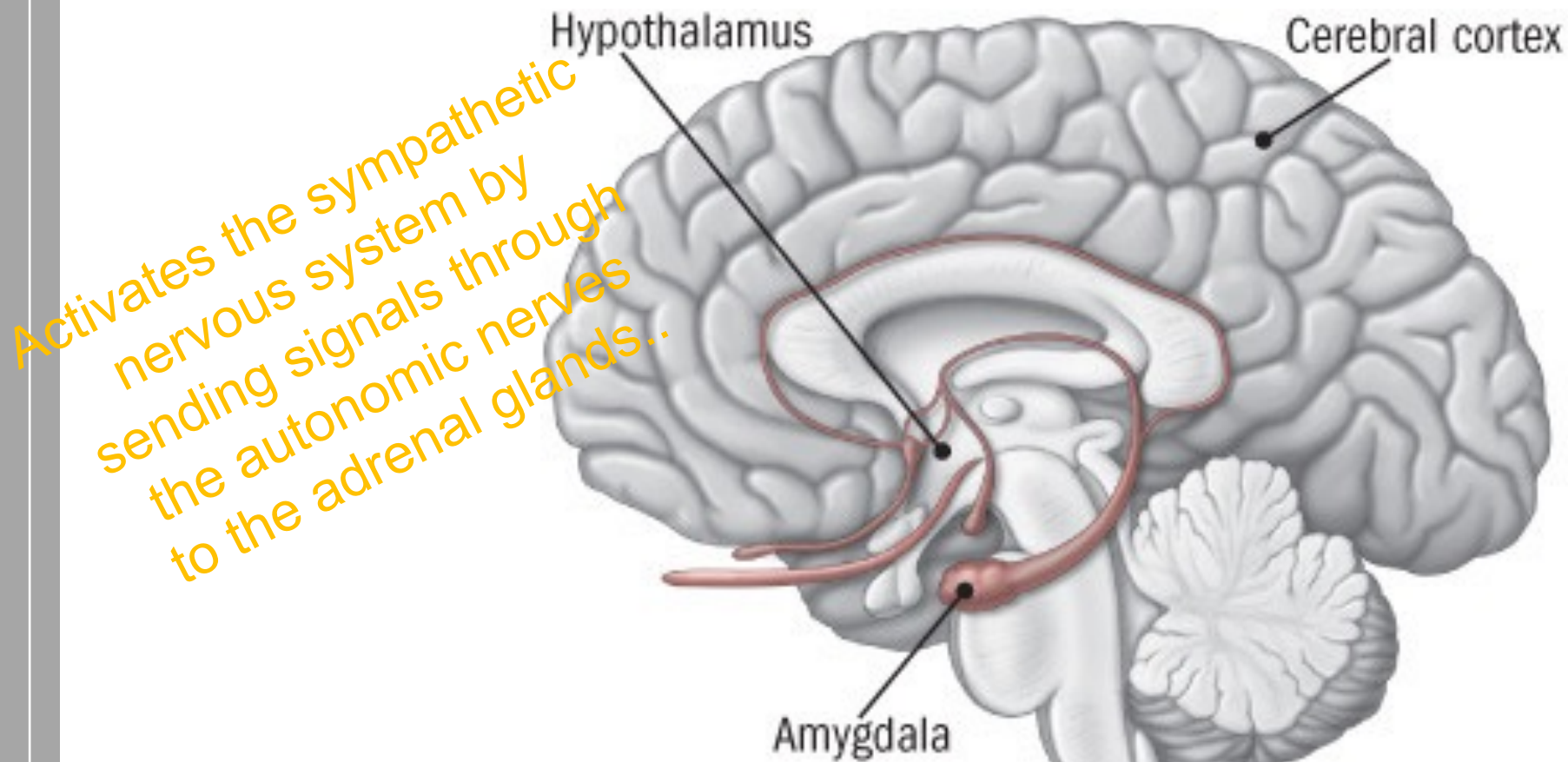
EYES – WITNESSING
& INTERPRETING
(BRAIN).

Amygdala



“When someone experiences a stressful event, the amygdala, an area of the brain that contributes to emotional processing, sends a distress signal to the hypothalamus. This area of the brain functions like a command center, communicating with the rest of the body through the nervous system so that the person has the energy to fight or flee.”

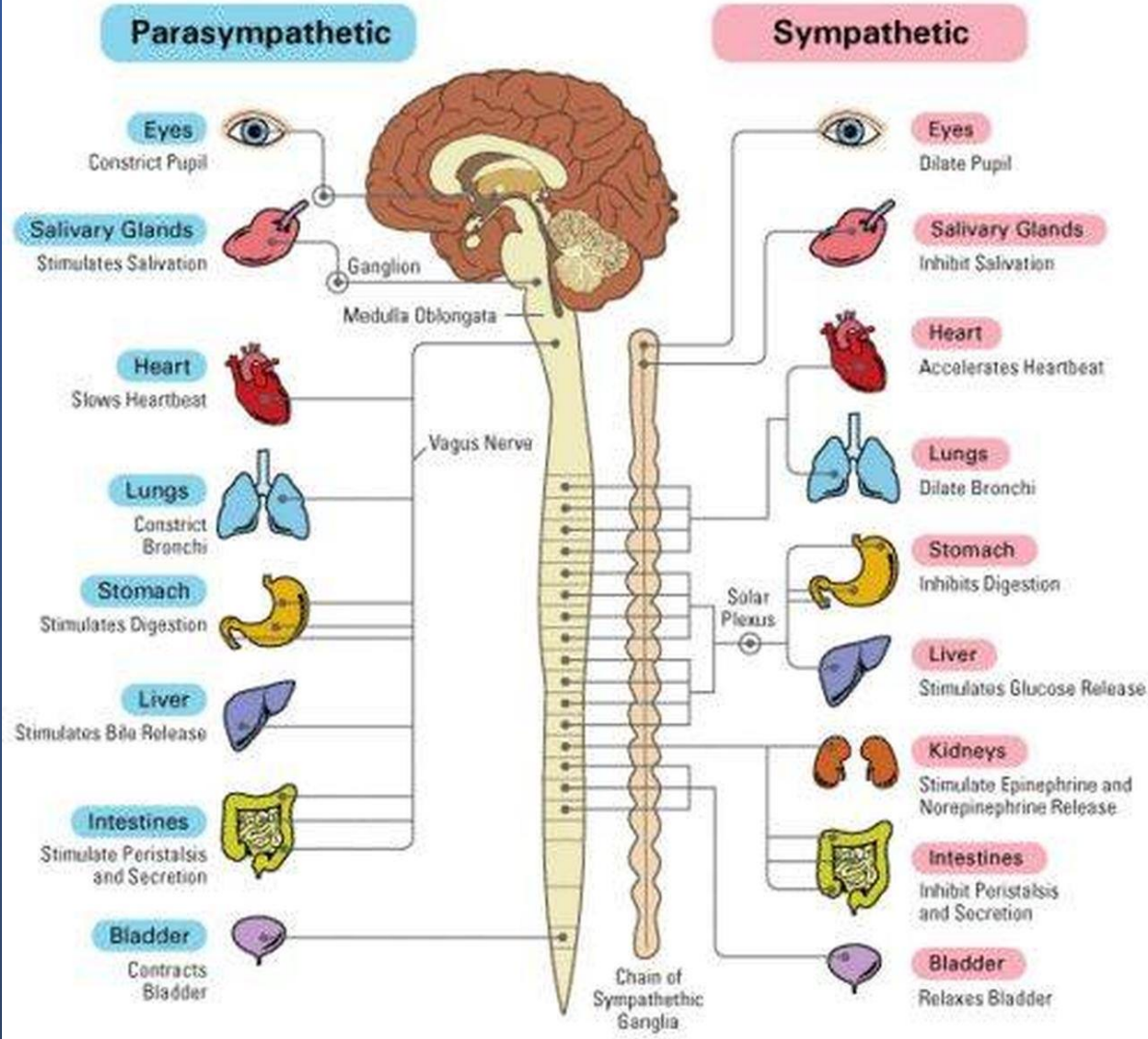
Hypothalamus



“The hypothalamus is a bit like a command center. This area of the brain communicates with the rest of the body through the autonomic nervous system, which controls such involuntary body functions as breathing, blood pressure, heartbeat, and the dilation or constriction of key blood vessels and small airways in the lungs called bronchioles.”

Autonomic Nervous System

Schema Explaining How Parasympathetic and Sympathetic Nervous Systems Regulate Functioning Organs

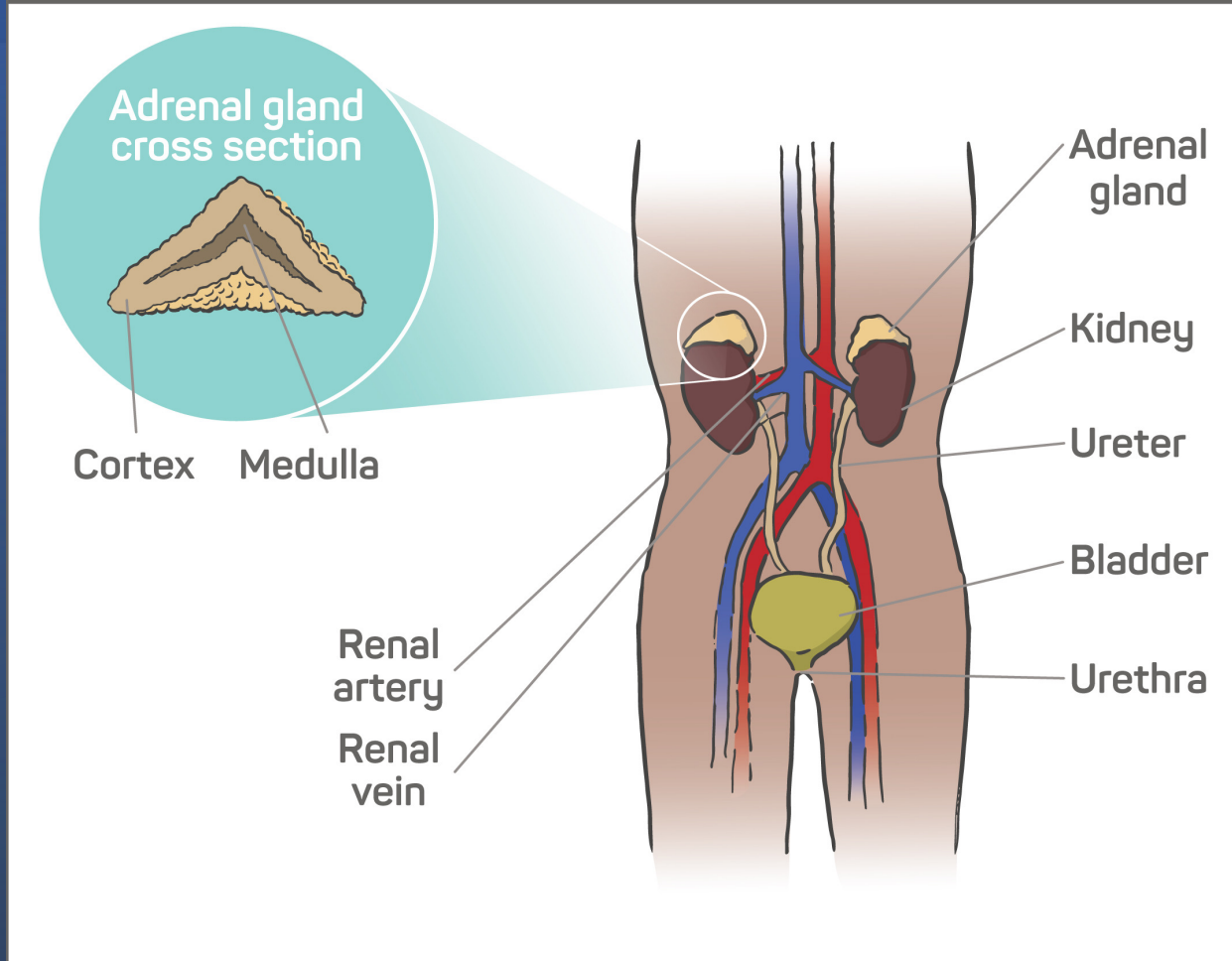


“Promotes the “rest and digest” response that calms the body down after the danger has passed.”

“Triggers the fight-or-flight response, providing the body with a burst of energy so that it can respond to perceived dangers.”

The renal system and adrenal glands

- Adrenal Cancer
- Back Pain
- Overactive Bladder
- Diabetes
- High Blood Pressure



“These glands respond by pumping the hormone epinephrine (also known as adrenaline) into the bloodstream.

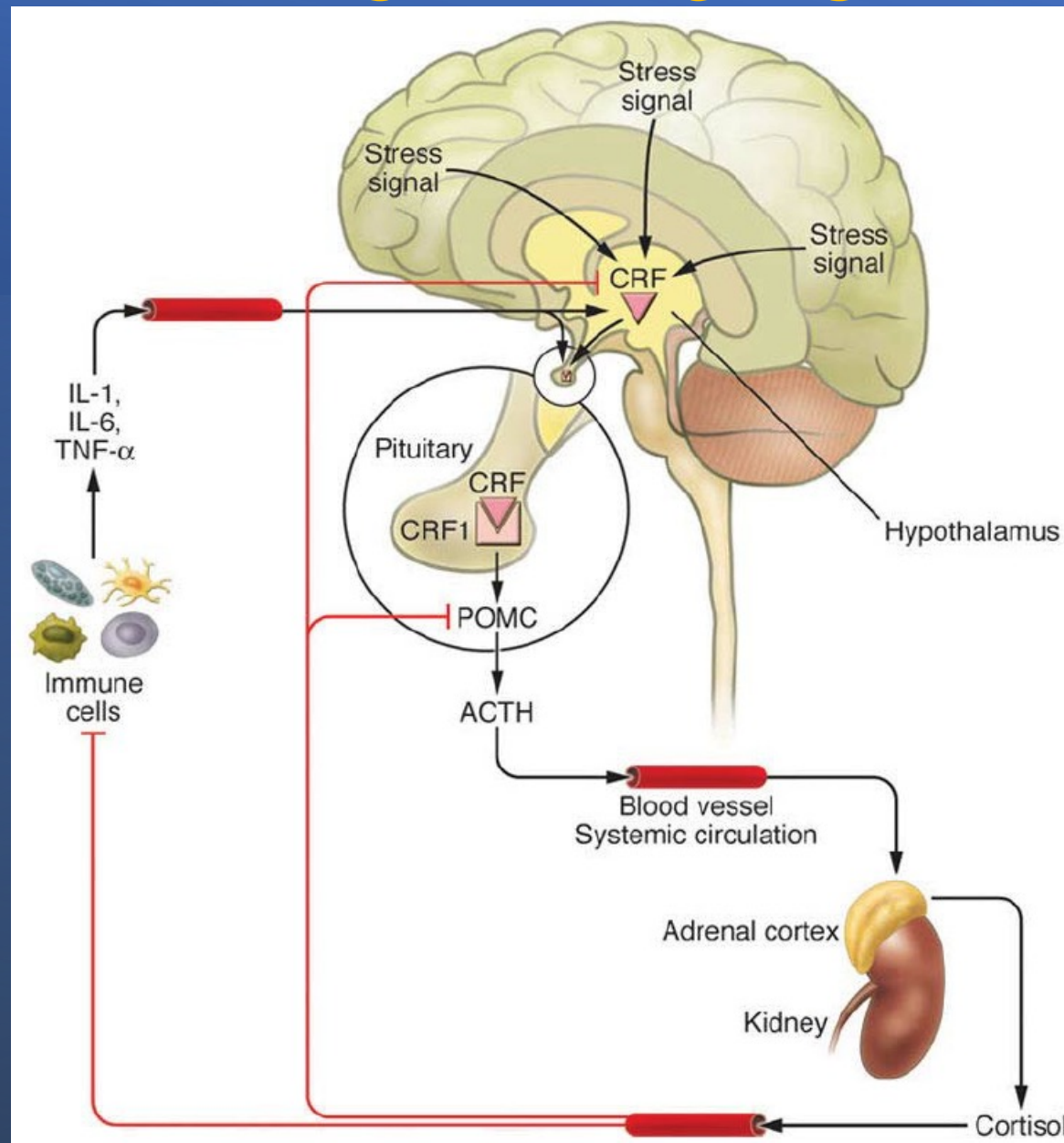
Physiological changes. The heart beats faster.

Sight, hearing, and other senses become sharper.

Epinephrine triggers the release of blood sugar (glucose) and fats from temporary storage sites in the body.”

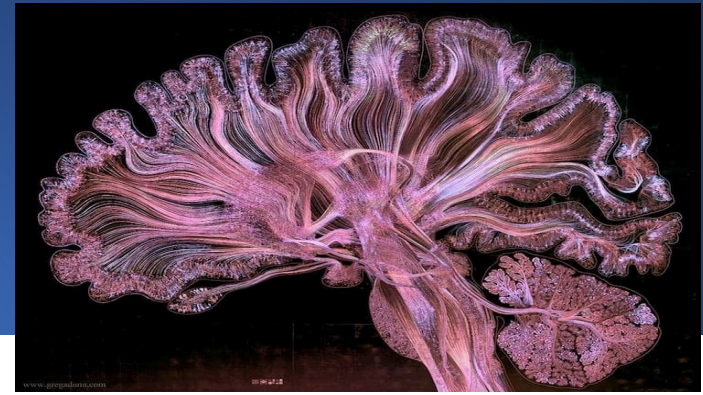
The HPA axis

- “As the initial surge of epinephrine subsides, the hypothalamus activates the second component of the stress response system — known as the HPA axis.
- This network consists of the hypothalamus, the pituitary gland, and the adrenal glands.”



- “If the brain continues to perceive something as dangerous, the hypothalamus releases corticotropin-releasing hormone (CRH), which travels to the pituitary gland, triggering the release of adrenocorticotrophic hormone (ACTH).
- This hormone travels to the adrenal glands, prompting them to release cortisol. The body thus stays revved up and on high alert.”

Neurological Impacts of Stress



(Dunn)

- *“Stress impacts motor learning and may lead to the development of motor deficits.”*
- Exposed to a stressful situation for a few days focused on parts of the cerebral cortex responsible for motor control and learning new movements.
- After the stressful situation, the neurons studied lost some of their synapses—these are the contacts to other nerve cells.
- During learning processes, new synapses are usually formed or existing ones are strengthened.
- Instead, the stressed rodents lost up to 15 percent of their contacts. At the same time, the animals developed motor learning deficits.
- For example, they had to try to grasp a food pellet with one paw and transport it into their mouths. In the wild, mice use both paws to do this, so they had to relearn this skill. The non-stressed control group achieved a success rate of 30 percent after five days.
- The stressed rodents, however, only managed to take the food in every tenth attempt.

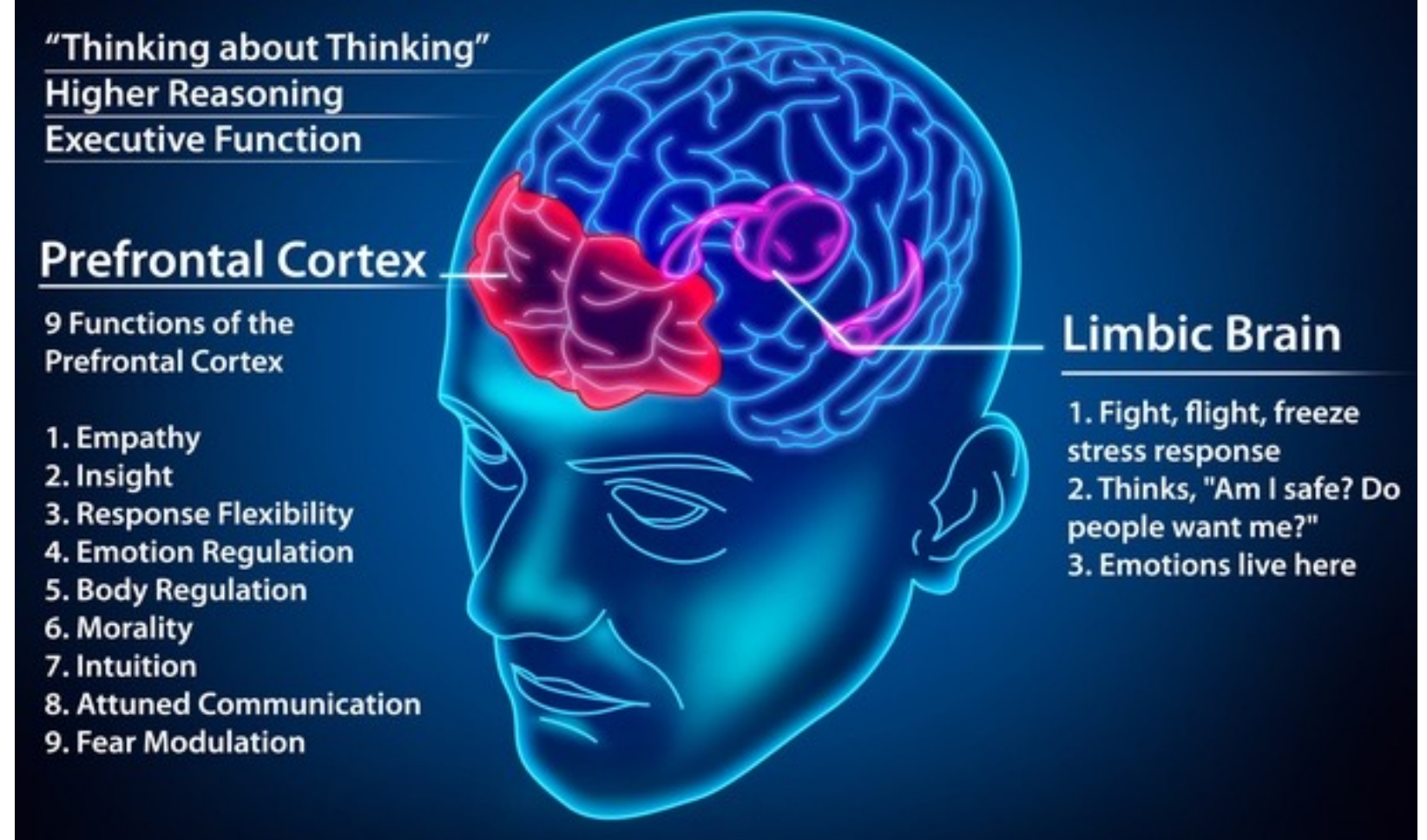
Neurological Impacts of Stress

- Mice vary in their sensitivity to stress. Some of them hardly develop any abnormalities after a few days of stress—they are considered resilient.
- Surprisingly, these robust animals had similar difficulties as their more sensitive peers in learning to grasp with one hand.
- “It is therefore possible that motor tests are very suitable for detecting stress-related disorders such as depression before other symptoms become apparent.
- Even in resilient animals, moreover, the number of synapses decreased after the stress event.
- Unlike their stress-sensitive peers, however, the affected neurons recovered: after one and a half weeks, the number of synapses was again similar to that before the stress event and comparable to that in non-stressed control animals.
- Psychological stress also leaves permanent traces on them if it is too long or too frequent.

Neurological Impacts of Stress

- What triggers the loss of synapses: Certain immune cells, the microglia, were activated in the rodents' brains. They belong to the so-called phagocytes and can, for example, digest pathogens or defective cells. It is possible that they are “switched on” by stress and then attack the contact sites.
- The research group also examined the fluid that washes around the brain and spinal cord. They found certain proteins that can normally be detected there in neurodegenerative diseases such as Parkinson's or Alzheimer's.
- We therefore believe that stress-related psychiatric diseases such as depression are also associated with the degradation of neurons.
- Long-term stress—to which children are increasingly exposed—can potentially cause serious damage to the brain.
- Stress was generally accompanied by a marked reduction of spine density in the motor cortex and spine dynamics depended on the stress phenotype.”
- (Stress Damages the Movement Centers in the Brain, 2022)

- “The prefrontal cortex (PFC)—the most evolved brain region—subserves our highest-order cognitive abilities.
- However, it is also the brain region that is most sensitive to the detrimental effects of stress exposure.
 - Even quite mild acute uncontrollable stress can cause a rapid and dramatic loss of prefrontal cognitive abilities, and more prolonged stress exposure causes architectural changes in prefrontal dendrites.
- Recent research has begun to reveal the intracellular signalling pathways that mediate the effects of stress on the PFC.
- This research has provided clues as to why genetic or environmental insults that disinhibit stress signalling pathways can lead to symptoms of profound prefrontal cortical dysfunction in mental illness.” (Arnsten, n.d.)

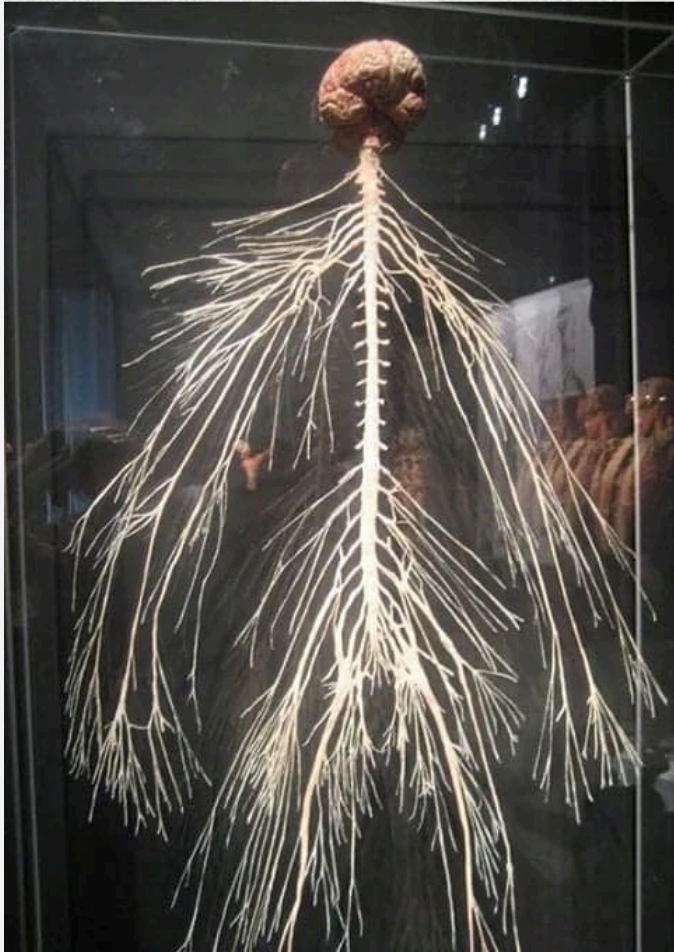


“Cognitive process most probably involves the dorsolateral, prefrontal and medial parietal cortex. Therefore, the prefrontal regions mediate both the preparedness of religious experience and conscious cognitive process involved in the appreciation of religious experience.” (E. Mohandas, Neurobiology of Spirituality, n.d.)

Flight, Fight, Fawn – Traumas

Impacts

This is your nervous system...



(This is Your Nervous System)

- Being in traumatic states uses up our bodies resources i.e., Memory, Memory Retention, Immune System, Chemicals going to muscles & brain – traveling through organs & central nervous system.
- Long-term leading to illness like fibromyalgia's, disease, weight gain or loss, mental health, blood brain barrier, stomach issues, intestinal, digestion, cancers, liver, kidney, skin issues, vision issues etc. This cycling into compounding hardships.
- *“Study reveals a strong association between emotional abuse experienced during childhood and an increased risk of developing schizophrenia-like symptoms in adulthood.”* (Strong Link Found Between Emotional Childhood Abuse and Schizophrenia-Like Experiences in Adulthood, 2022)
- *“Genes are capable of turning themselves on and off and regulating not just our physical structure, but our emotions and our behaviors as well.”* (Bruce Lipton, PhD: The Jump From Cell Culture to Consciousness, 2017)

Psychological Events Can Have Physiological Impacts

Normal brain Depressed brain

@deliciousmgc

"Get over it lots of people have it worse"

Depression

Detailed description: This panel shows two axial brain scans. The 'Normal brain' scan on the left displays a typical pattern of brain activity with yellow and orange areas. The 'Depressed brain' scan on the right shows significantly reduced activity, appearing mostly in shades of blue and dark blue. A vertical watermark '@deliciousmgc' is on the left side.

Normal brain ADHD brain

@deliciousmgc

"It's just a made up ailment to give kids an excuse for not paying attention"

ADHD

Detailed description: This panel shows two axial brain scans. The 'Normal brain' scan on the left shows a clear, organized pattern of activity with yellow and orange. The 'ADHD brain' scan on the right shows a more chaotic and less organized pattern of activity with more blue and purple. A vertical watermark '@deliciousmgc' is on the left side.

Normal brain Bipolar brain

@deliciousmgc

"Why can't you control yourself and try and act like a normal person?"

Bipolar Disorder

Detailed description: This panel shows two axial brain scans. The 'Normal brain' scan on the left shows a typical pattern of activity with yellow and orange. The 'Bipolar brain' scan on the right shows a more chaotic and less organized pattern of activity with more red and purple. A vertical watermark '@deliciousmgc' is on the left side.

Normal brain PTSD brain

@deliciousmgc

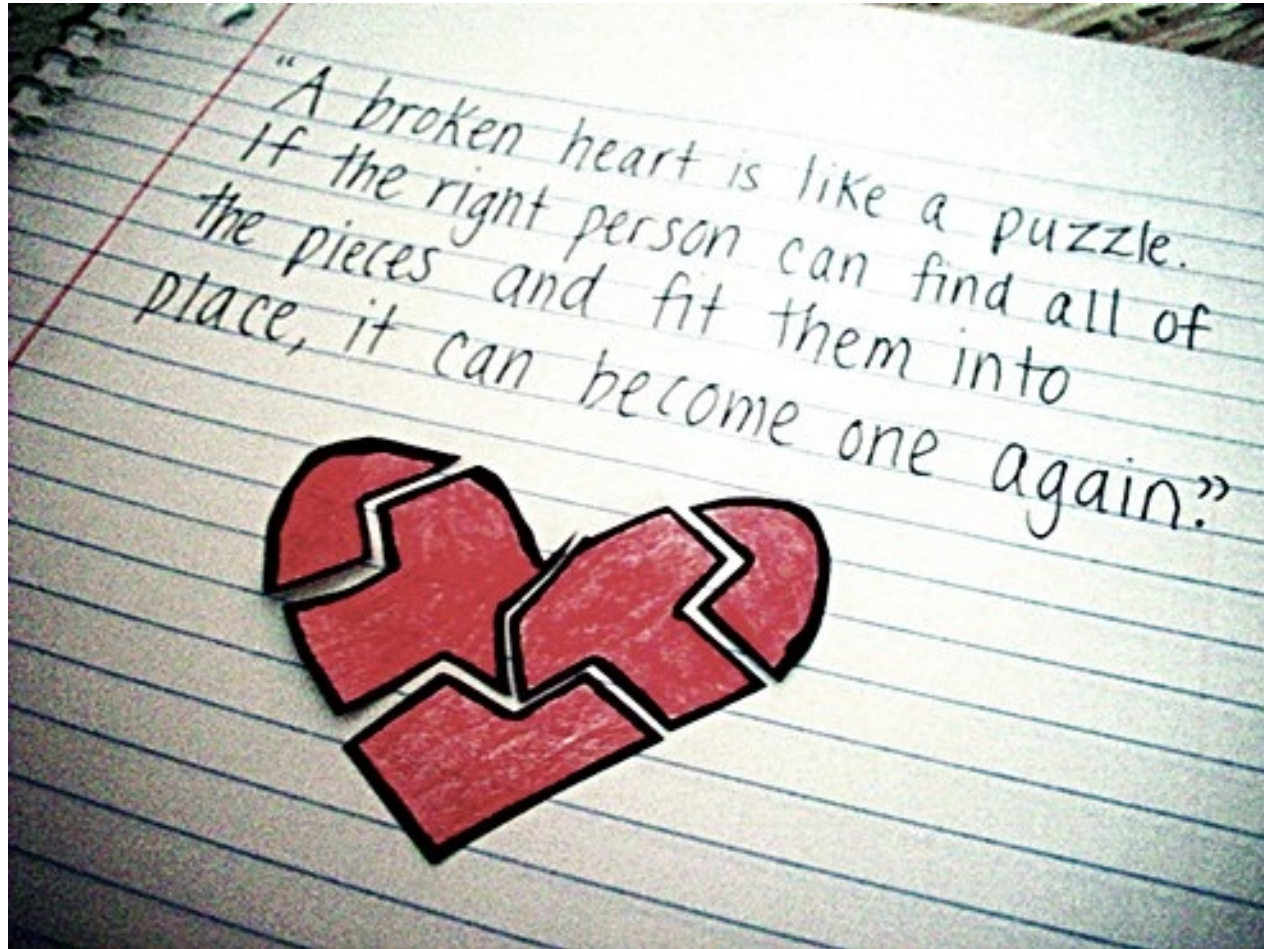
"What happened to you wasn't even that bad"

PTSD

Detailed description: This panel shows two axial brain scans. The 'Normal brain' scan on the left shows a typical pattern of activity with yellow and orange. The 'PTSD brain' scan on the right shows a more chaotic and less organized pattern of activity with more red and purple. A vertical watermark '@deliciousmgc' is on the left side.

Heart Breaking

Aka Broken Heart Syndrome



- “When heartbreak happens, these hormone levels drop and are replaced with the stress hormone [cortisol](#).
- Designed to support your body’s fight-or-flight response, too much cortisol over a period of time can contribute to anxiety, nausea, acne and weight gain – all those unpleasant mental and physical symptoms associated with heartbreak.”

(The science behind a broken heart, n.d.)

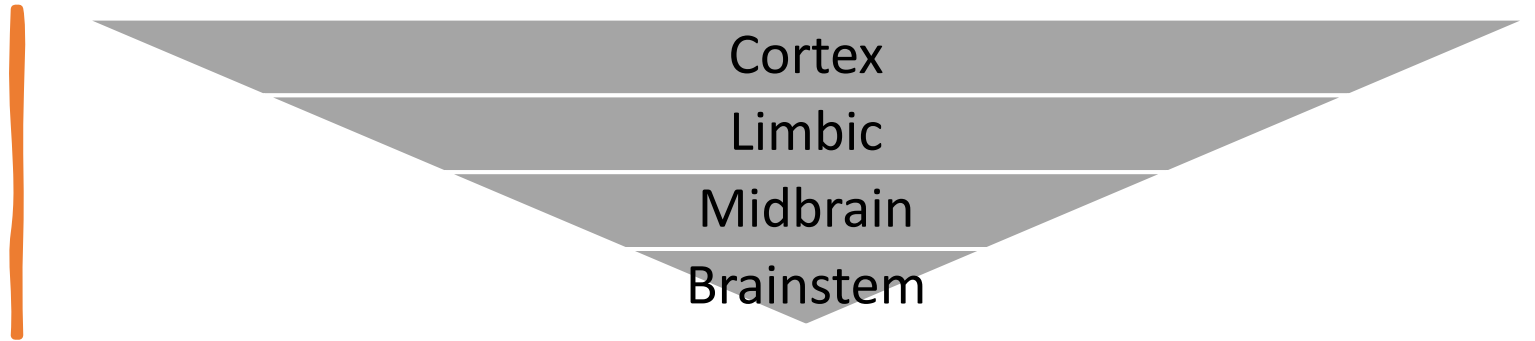


Trauma Release Therapies

Culturally we understand cycles. Cycles of connection to all, to disconnect & reconnection, birth, death & rebirth.

Currently, as a peoples, we are so disconnected due to impacts & colonization.

Yet, prophecies show we are to get back to Spirit ways of life for reconnection.



Limbic system to reverse the impacts of trauma

Directly contradict what the body learned in that moment of trauma. Balance teachings - when bads attack it is the opposite that suffers or the innocence ie what is good n natural n pure.

“The limbic system is the part of the brain involved in our behavioural and emotional responses, especially when it comes to behaviours we need for survival: feeding, reproduction and caring for our young, and fight or flight responses.” [The limbic system - Queensland Brain Institute - University of Queensland \(uq.edu.au\)](https://www.uq.edu.au/brain-institute/limbic-system)

[Limbic System: Definition, Parts, Functions, and Location | Simply Psychology](#)

[Limbic system: structure and function | Emotion \(video\) | Khan Academy](#)

+
APA – “Positive Psychology”

Culturally –
Humbly Being
with Spirit Truth

positive affect:

the internal feeling state (affect) that occurs when a goal has been attained, a source of threat has been avoided, or the individual is satisfied with the present state of affairs. The tendency to experience such states is called **positive affectivity**. (Positive Affect , n.d.) ***CULTURALLY: SOLUTION & FLOWING WITH LIFE BASED.***

Endocrinology:

The branch of physiology and medicine concerned with endocrine glands and hormones. ***MANIFESTATION OF HEALTH OR SICKNESS AS SPIRIT COMES IN, MOVES & TAKES PLACE***

= Chemistry = Wherever a THOUGHT goes, there goes a chemical that affects your biology through your body. ***WHAT SPIRIT Have They Been Feeding & Now Choose - WILL YOU FEED***

Small Goals ?

BIG Goals ?

What took achieving BIG Goals =
Achieving One Small Goal After Another

Breaking Away from Dysfunctional Worlds

Re-Learning
How to
Interpret
What We're
Seeing

- CPTSD, Cultural Distress

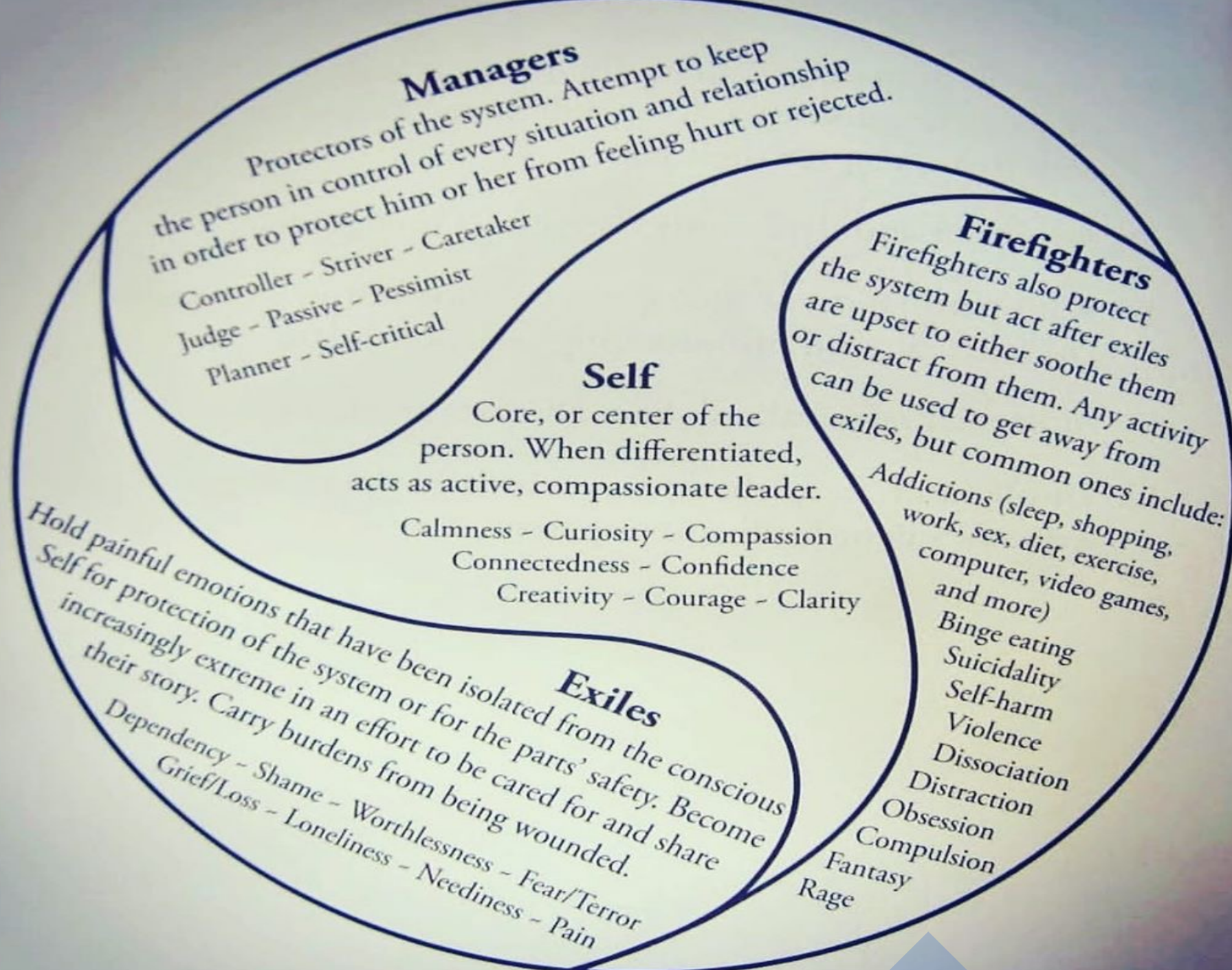
- Been blindsided by harsh realities – become focused on that path (preservation)

= Preservation means one innately wants to be okay.

- Guiding the Lessons i.e., Motivational Interviewing =

How could the (fill in the blank) i.e., dysfunction, abuse, drama, relapse, fight etc. incident or life course been avoided

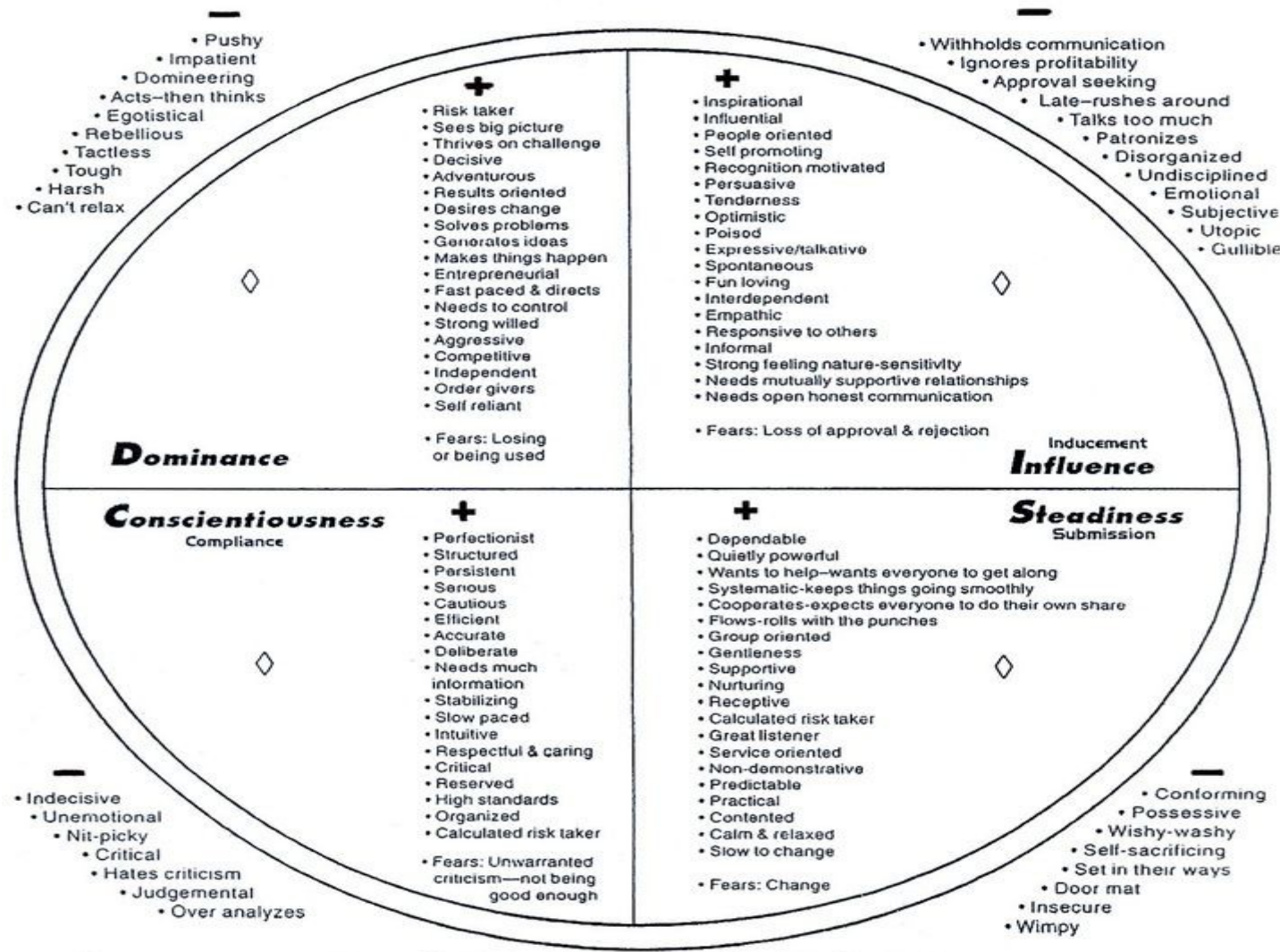
- *What if there wasn't support from loved one's etc..... What can they do for self, family etc.



Building Synergistic Partnerships

Synergistic partnerships begin within each of us—and then expands to include co-workers, clients, friends, and family, etc. Undisciplined behaviors can crush our spirit and destroy our heart's desires. When our DiSC parts argue with each other, our behavior can be like a team of horses pulling in different directions. This internal management system will help you get your "inner team" focused on achieving your desired outcomes. Once this is accomplished—external team building is easy.

There are no good or bad behaviors—there are positive and negative behaviors—appropriate or inappropriate behaviors. The strategies in this DiSC system for monitoring and balancing your behaviors, will help you 1) understand your behavioral choices 2) help you to hold effective DiSC committee meetings in your mind 3) in any situation empower you to confidently choose appropriate behavior responses. If you are self-employed, work as an independent contractor or have a home-based business, this information is extremely important. Your success requires wearing many hats and practicing behavior flexibility.



Successful Outcomes Are The Result Of Quality Choices

• (Pence, n.d.)

Spiritual VS Emotional Beings

Negative outcomes from this cycle feeds
Hard wiring & bodily tolls.

Emotional: Fear, Sadness, Anger etc.

Put your Asiima (tobacco) offering down.

Reactionary: Lashing out verbally or physically, Crying, hiding away, self harm etc.

Next life moment arises: Processed through programmed negative responses – i.e., Feels like day is ruined.

Automatic Cycle: Systems chemistry is now programmed to respond from emotion, along with neuro wiring.

Trauma OR Incident

Step back

O Follow the Circle Teachings

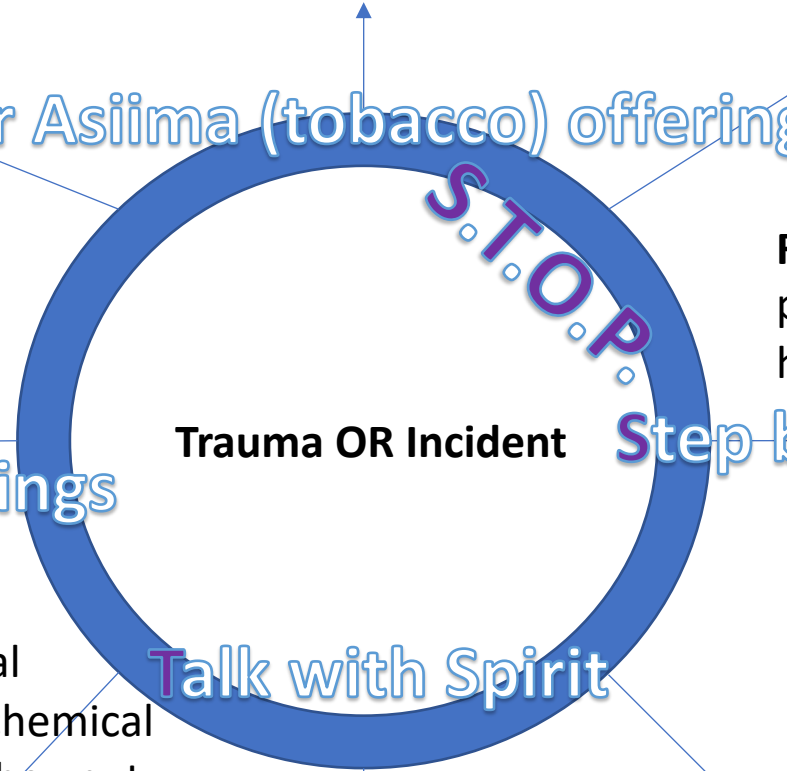
Talk with Spirit

Daily Life Spiral Begins: Changes to the individual, couple, family or groups daily life would have looked like IF was not reactionary or learned how to work through emotions.

Their now daily life begins *feeding their programming:* **Mind** – Emotions or Chemical
Bodily – Impacts due to the chemical makeup of their emotional rushes & what they put their body through during those times.

Spirit – As this becomes our character change, who we would have been if trauma or incident never occurred, or the individual had the knowledge & tools on how to process & respond.

The impacts or consequences to being reactionary or allowing emotions to take over begins the storm of the cycle through their being, as they now react to the consequences & emotions flood their system.

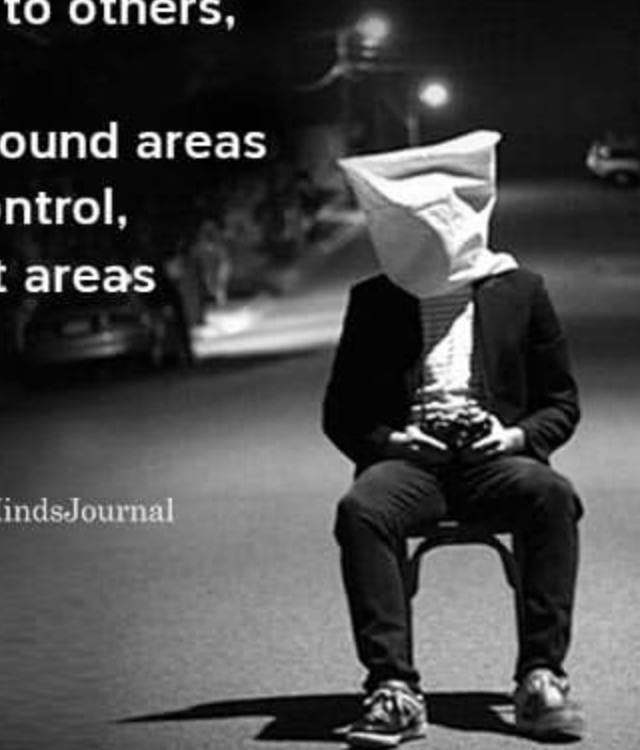


**Trauma survivors often need
as much information about a
current situation as possible.**

**This may seem intense to others,
but we've lived with
so much uncertainty around areas
that were out of our control,
that having facts about areas
we can control,
helps us feel safe.**

- NATE POSTLETHWAIT | | [TheMindsJournal](#)

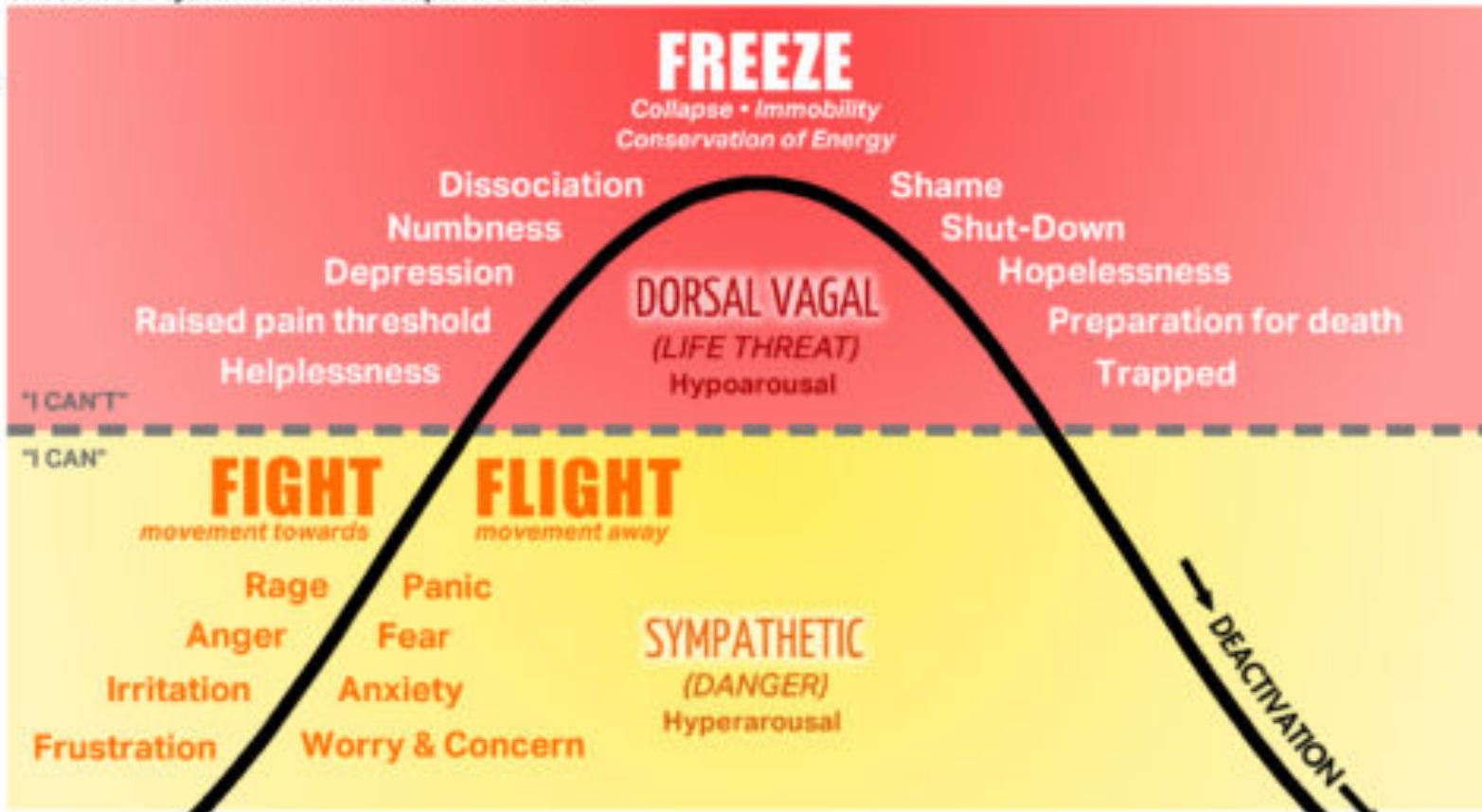
MINDJOURNAL



POLYVAGAL CHART

(Missimer, 2022)

The nervous system with a neuroception of threat:



PARASYMPATHETIC NERVOUS SYSTEM
DORSAL VAGAL COMPLEX

Increases

- Fuel storage & insulin activity • Immobilization behavior (with fear)
- Endorphins that help numb and raise the pain threshold
- Conservation of metabolic resources

Decreases

- Heart Rate • Blood Pressure • Temperature • Muscle Tone
- Facial Expressions & Eye Contact • Depth of Breath • Social Behavior
- Attunement to Human Voice • Sexual Responses • Immune Response

SYMPATHETIC NERVOUS SYSTEM

Increases

- Blood Pressure • Heart Rate • Fuel Availability • Adrenaline
- Oxygen Circulation to Vital Organs • Blood Clotting • Pupil Size
- Dilation of Bronchi • Defensive Responses

Decreases

- Fuel Storage • Insulin Activity • Digestion • Salivation
- Relational Ability • Immune Response

The nervous system with a neuroception of safety:



PARASYMPATHETIC NERVOUS SYSTEM
VENTRAL VAGAL COMPLEX

Increases

- Digestion • Intestinal Motility • Resistance to Infection
- Immune Response • Rest and Recuperation • Health & Vitality
- Circulation to non-vital organs (skin, extremities)
- Oxytocin (neuromodulator involved in social bonds that allows immobility without fear) • Ability to Relate and Connect
- Movement in eyes and head turning • Prosody in voice • Breath

Decreases

- Defensive Responses

VVC is the beginning and end of stress response.
When VVC is dominant, SNS and DVC are in transient blends which promote healthy physiological functioning.

Consciousness
Speaks to Us:

Our Behaviors
or Responses
Tell on Where
We're At, Our
Needs, Our
Weaknesses
etc.

WHEN TRAUMA SURFACES AGAIN

The reason why intrusive thoughts and memories can flood back in an overwhelming manner even long after the traumatic event occurred is that the brain is eventually able to process more of the trauma when we are finally out of survival mode. When a modicum of safety has been achieved, avoidance and dissociation may no longer be operating at full capacity to protect us and we can become inundated with the thoughts and emotions that were being "saved" for when our brain had the resources to address them.

Shahida Arabi, MA - @selfcarewarrior

Winaboozhoo
&
Others Teach
Us
How We Can
Hear Self
&
Why It Is
Wise
To Take Self
Back, Control
Self & Get
Your Power
Back

Due To Trauma & After Trauma

I can't explain why I made so many mistakes, why I repeated them knowing I was digging a hole too deep to climb out of. I only know I did.

I can't explain it, excuse it, but I own it. No one forced me to do it. I could have been influenced, manipulated but at the end, I said YES. Therefore rather than excuse, I choose to be accountable.

Why is this important? Accountability takes me from a victim mentality to a victor mentality. Puts me in the drivers seat and in control of my next move.

I can't explain the past, yet I don't have to. I just have to learn from it and choose to **BE** and **DO** more.

(Gonzalez)

TRAUMA RESPONSES



(RyanTheHolisticHealthCoach, n.d.)

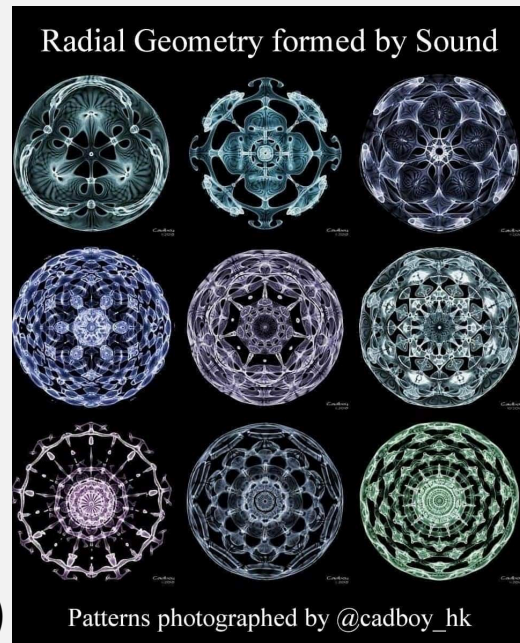
Ceremony isn't the only time you suppose to carry yourself in a sacred way. It is suppose to remind you that you are sacred and to carry yourself that way everyday.

Unknown author

Fixed *OR* Growth Mindset – Choice IS Ours

Facts ... and Then there's the Truth

Let's look at the "now what, what's next" etc. as goals instead.



(CADBOY_HK)

- Remember, all goals, big or small, take steps – what's the step that sends us into the right direction. If you have breath – You have life. If you have your life yet, you still have your purpose(s) to fulfill & duties.
- Start with S.T.O.P. Work at taking breath of life back. Notice your heart – not just the rate, but what is its dream if the incident wasn't an issue. Go to your place mentally or physically to seek the answers in the next steps on the path to hearts dream.
- Excited by answers or negative excitement by barriers – S.T.O.P. either way. Work through envisioning dream being lived and now moving forward onto life... that peace in the air of life must be obtained to take any further steps i.e., Balance, grace teachings.
- Cleansings isn't just Smudging or your Moon Cycle. It is removing things, daily habits, people, choices etc. that do not serve your life path, character, dreams, duties etc. It is things, choices, etc. that bring you down or scatter your mind or take you from your true self. Declutter. Decolonize.
- Now that you cleansed, you made room for things, people, teachers, moments that bring development of your dreams or that which promotes focus, energy & hope.

The Cycles that Continue to Attack Brain Function: Sickness, Diseases & Immunity



When we're not at our fullest potential, this is the baseline for all diseases & immune breakdowns.



We are not at our fullest potential when in a stressor state.



Have them define & then educate on the missing pieces of what one needs to be at their "fullest potential" mind, body, their environment, spirit & culturally.



Is memory working against them I.e., Attaching wrong chemical response to situations due to trauma programming.

Aniishinahbek: Balance Teachings

Lakota: Lame Boy aka Grass Dancer

Survival Mode can often put one's senses in a heightened mode. Living in that state can bring awareness's by awakening other less frequently used portions of awareness. Yet, it can take its toll – that needs to be assessed & cared for while learning one's gifts.

[Savant Syndrome | SSM Health Treffert Center | SSM Health](#)

“Savant syndrome is a rare condition in which persons with various developmental disorders, including autistic disorder, have an amazing ability and talent. The condition can be congenital (genetic or inborn), or can be acquired later in childhood, or even in adults. The savant skills coexist with various neurodevelopmental conditions including autistic disorder and/or intellectual disability, or other conditions such as genetic (chromosomal) disorders, brain malformation or injury, or other disease that occurs before (prenatal) during (perinatal) or after birth (postnatal), or even later in childhood or adult life (acquired savant). Savant syndrome is not a disorder or disease, it's a condition where extraordinary skills and memory are grafted onto a more basic brain dysfunction that rises from a developmental disability or some other form of central nervous system disease or disorder.”

Spiritually Gifted *OR* Autism, Disabled

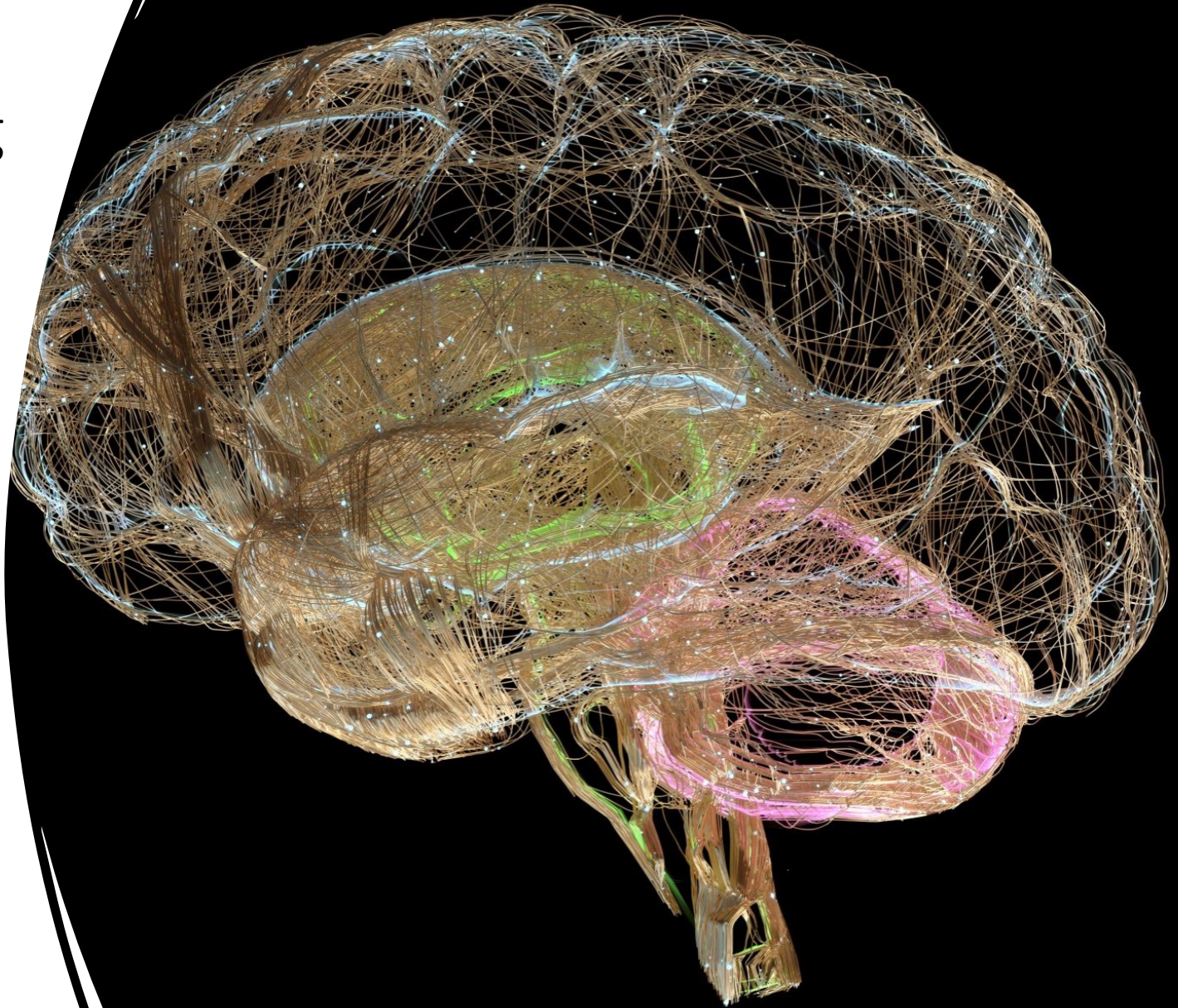
Working with the Sacred or the Gifted & Their Gifts ARE Blessings

Working with Gifts: Now or New

Neuroplasticity – Restructuring of Brain

“The brain's ability to change and adapt as a result of experience. *Plasticity* refers to the brain's malleability, which is defined as being "easily influenced, trained, or controlled."¹ *Neuro* refers to [neurons](#), the nerve cells that are the building blocks of the brain and nervous system. Thus, neuroplasticity is when nerve cells change or adjust. The brain possesses the remarkable capacity to reorganize pathways, create new connections, and, in some cases, even create new neurons—neuroplasticity.

- **Functional plasticity** is the brain's ability to move functions from a damaged area of the brain to other undamaged areas.
- **Structural plasticity** is the brain's ability to actually change its physical structure as a result of learning.” (What Is Neuroplasticity?, n.d.)



Meanwhile – Both Sides WORK TOGETHER

Culturally: We understand we can only be in the now & have because of the past, while striving in all for the future beyond us. (As with the circle teachings, comes the balance teachings.)

As with couples – There is each's role individually, yet together in balance they are one.

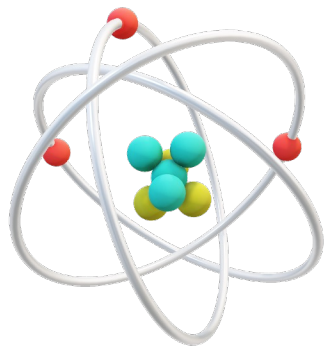
Fun Facts!!!

The Right Hemisphere of the brain thinks in = Right Here, Right Now. (aka Flight, Fight, Freeze or Fawn)

- Culturally: Thinking in Pictures – Like the Wolf Teachings.

The Left Hemisphere of the brain thinks in = I AM. (i.e.: Language)

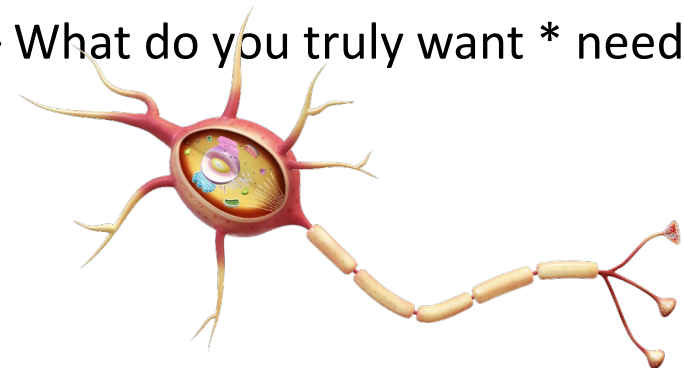
- Culturally: Identity, where you come from, belong, responsible for & to etc.



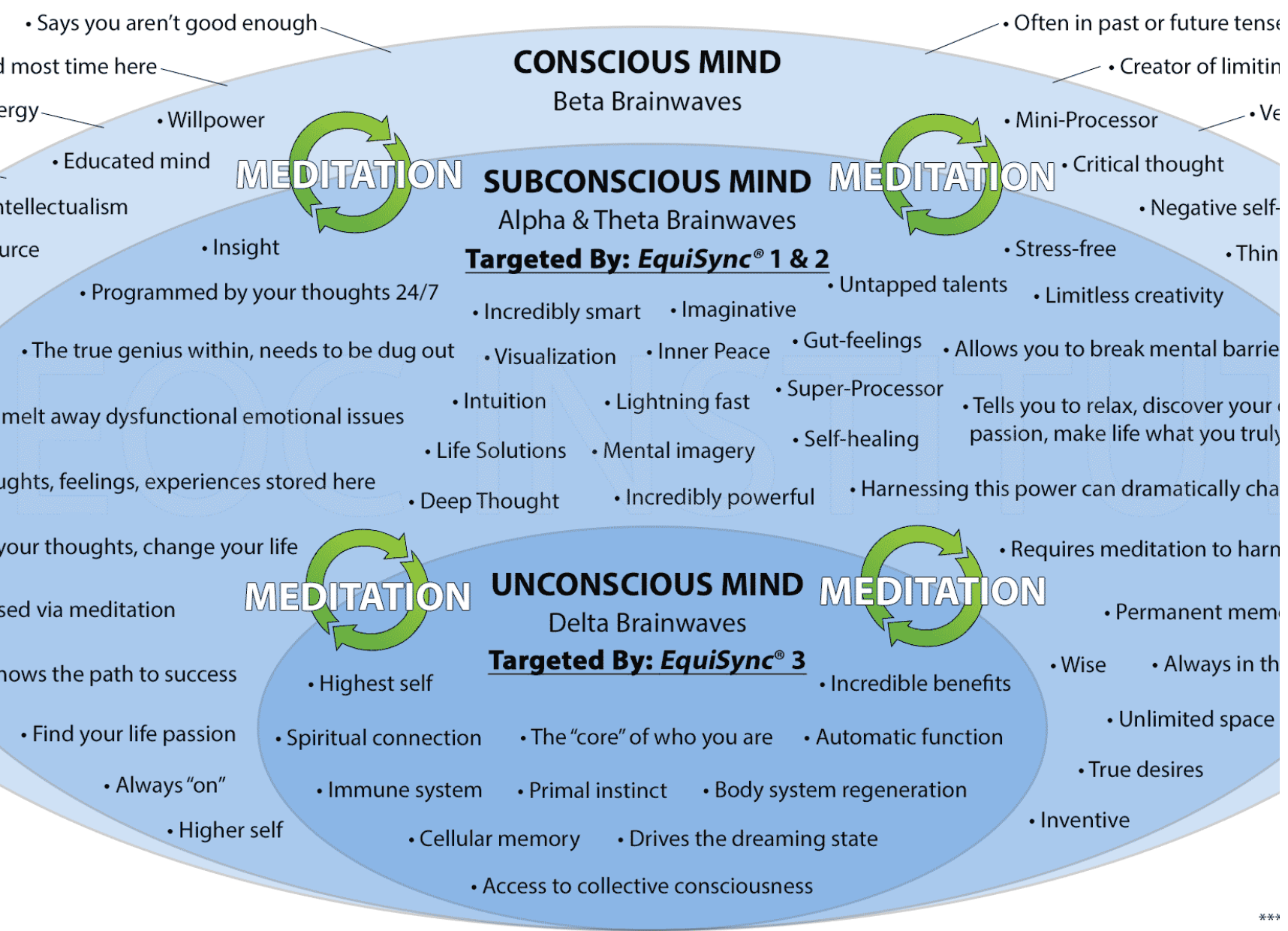
Working with Gifts: Now or New Neuroplasticity – Our Friend to Support



- Rest, Proper Diet, Exercise, Time for Spirit & Being with Spirit
- Holding Posture – Arms up for at least 2 minutes changes chemical composition (Some examples of how power posing can actually boost your confidence, n.d.)
- Body Movement: New Forms, Cultural forms or Going Back to Can Be New to the Individual, Doing a variety of seasonal cultural games.
- Outside of the Box Thinking
- Syncing Body & Mind – I.e., Spiritual Connecting
- Right & Left Movement Challenges: Using the Less Dominate Hand, Opposite Foot Forward, Brush Teeth Differently than Routine, Physical Activities, Chores Differently (Correlate the opposite movement with new gifts to enhance support of need due to loss. I.e., Sound etc. to Sensory.
- Cognitive Tasks: *Neuro Activity* – Where do you choose to direct it. *Imagination* – What do you truly want * need.



Anatomy Of The Mind: Meditation Gives You Access To Your Mind's Most Powerful Layer



"Memory storage.

Serving as a kind of massive underground **mental library**, your subconscious/unconscious mind layers permanently store all of your memories, habits, behaviors, programming, deep-seated emotions, and really **everything** that you have **learned** and experienced up to this point in your life."

Balance

Healing for the Whole:

*Mind, Body &
Nervous System*

Basics Needed & Their Partners

B's (1, 12, Complex) + Folic Acid

Salmon, Tuna + Spinach, Dark Greens

Iron + Vitamin C

Brown Rice, Shellfish, Organ Meats, Legumes, Dark Chocolate +
Strawberry, Plums, Cherries, Rose Hips, Cranberry, Broccoli, Spinach

Omega 3s + Good Oil Fats

Flax Seeds, Salmon, Herring, Walnuts, Spinach + Fish Oil, Deer Bone Broth

Amino Acids + Iron Rich + Vit C Rich Foods

Quinoa, Eggs, Turkey, Peas, Chickpeas, Lentils, Kidney Beans, Black Beans,
Edamame + The IRON RICH FOODS + The Vit C RICH FOODS

Ds + Magnesium

Carp, Sturgeon, Salmon, Herring, Tuna, Eggs Yolks + Nuts, Seeds, Legumes, Black
Beans, Quinoa, Dark Chocolate

Partners Just as Important

Resources 1:

[Co-Occurring Disorders | Psychology Today](#)

“While commonly used to refer to the combination of substance use and mental disorders, the term can also refer to other combinations of disorders, such as a mental disorder and an intellectual disability. (The terms *dual disorder* and *dual diagnosis* were previously used to describe the same condition.)”

[Causes of Mental Illness \(webmd.com\)](#)

“it is becoming clear through research that many of these conditions are caused by a combination of biological, psychological, and environmental factors”

[GoodTherapy | The Brain in Defense Mode: How Dissociation Helps Us Survive](#)

“According to Ross and Halpern (2011), there are several definitions of [dissociation](#). One of them (referred to as “the general systems meaning of dissociation”) is “the opposite of association” or the disconnection of two or more things that were once associated with each other. Another definition, presented by Steinberg and Schnall (2001), defines dissociation as “an adaptive defense in response to high stress or trauma characterized by memory loss and a sense of disconnection from oneself or one’s surroundings.”

Dissociation occurs when someone disconnects from some part of himself or herself or the environment. It can occur in a number of different ways, including disconnection from one’s emotions, body sensations, memories, senses, etc.”

Resources 2:

[Can Trauma Cause Schizophrenia? Psychosis, PTSD, and More \(psychcentral.com\)](#)

“At minimum, schizophrenia is related to an excessive amount of dopamine in certain parts of the brain,” he adds. “And anything that gets dopamine levels up — too much coffee, lack of sleep, stress, and especially a trauma — can push people to become symptomatic, especially those who have a genetic predisposition. A trauma response is mostly a fear-based reaction that the event (and related discomfort and distress) will happen again, she says.”

[Healing from Childhood Trauma and Dissociative Identity Disorder | NAMI: National Alliance on Mental Illness](#)

“The trauma caused me to form a condition known as [dissociative identity disorder](#) (DID), what was once known as multiple personality disorder. DID typically develops as a coping mechanism to deal with severe trauma. Its main feature is a disconnection between thoughts, identity, consciousness and memory. For me, it led to the formation and solidification of alternate egos (alters).”

[New psychology research links mystical experiences to heightened spiritual intelligence \(psypost.org\)](#)

The study, “[Mystical Experience Has a Stronger Relationship With Spiritual Intelligence Than With Schizotypal Personality Traits and Psychotic Symptoms](#)“, was authored by Daiga K. Bitēna and Kristīne Mārtinsone.

[Eczema and Mental Health | Atopic Dermatitis and Anxiety and Depression \(nationaleczema.org\)](#)

“When we experience a stressful situation, the body goes into fight-or-flight mode and responds by increasing production of stress hormones like adrenaline and cortisol. But when the body produces too much cortisol, it can suppress the immune system and cause an inflammatory response in the skin.”

[Stress and the gut: pathophysiology, clinical consequences, diagnostic approach and treatment options - PubMed \(nih.gov\)](#)

Resources 3:

[Foods That Help Or Hinder Happiness, From A Neuroscientist \(mindbodygreen.com\)](#)

“I will also break down targeted recommendations for each of the [five primary brain types](#). (Based on our brain-imaging work at [Amen Clinics](#), we have identified five brain types related to personality: Balanced, Spontaneous, Persistent, Sensitive, and Cautious.) Not all diets are right for all brain types. Knowing how to eat for your brain is one of the keys to feeling happier. The real happy foods are the ones that make you feel good in the moment but also enhance your mood, energy, and physical well-being in the long run.

A growing body of research shows that the SAD diet increases your risk for depression, anxiety disorders, [ADHD](#), and dementia, as well as diabetes, hypertension, heart disease, and cancer.”

[Parts of the Brain | Introduction to Psychology \(lumenlearning.com\)](#) “the parts of the brain and what they do so that we can understand mental processes and behavior”

[Treatment - Brain Injury Association of America \(biausa.org\)](#) “no two brain injuries are exactly alike. The individual who sustains a brain injury and his or her family are the most important members of the treatment team. Their choices, goals, and backgrounds must always be taken into consideration in treatment planning.”

[Traumatic Brain Injury – Causes, Symptoms and Treatments \(aans.org\)](#)

[Traumatic Brain Injury: Hope Through Research | National Institute of Neurological Disorders and Stroke \(nih.gov\)](#)

[NowThis Earth - This High Schooler Developed Brain Injury Treatment - Bing video](#)

Resources 4:

[Can Gastric Disorders Contribute to Anxiety and Depression? - List Of Medical Disorders And Resources \(mentalhelp.net\)](#)

“stomach problems can cause a lot more than just physical discomfort. Research has suggested that gastrointestinal troubles may be linked with anxiety and depression as well. a person’s stress levels can be exacerbated by the condition of their gut. gastric upset during the beginning of life appear to cause the brain to shift into a permanently depressed and anxious state. ”

[Mechanism for Long-Term Memory Storage Identified - Neuroscience News](#) (Fun Fact: This study is out of the University of Iowa)

“They further demonstrated that this mechanism is impaired in a tau-based mouse model of Alzheimer’s disease and that restoring this protein folding mechanism reverses memory impairment in this mouse model for the study of dementia.”

^^^ Stress could impact the NR4a gene (creating a candidate for dementia) [Stress and glucocorticoid regulation of NR4A genes in mice - PubMed \(nih.gov\)](#)

^^^ Stress impacts the levels of dopamine, while this gene NR4a is implicated in regulation of dopamine [NR4A gene expression is dynamically regulated in the ventral tegmental area dopamine neurons and is related to expression of dopamine neurotransmission genes - PubMed \(nih.gov\)](#)

^^^ This gene NR4a also is a part of the nuclear receptors as a mediator in metabolism & disease. Under stress or long-term stress foods nutritional absorption creates potential for mental health of behavioral health, along with physical health, quality & expectancy of life could be a part in impacting an individual [NR4A gene expression is dynamically regulated in the ventral tegmental area dopamine neurons and is related to expression of dopamine neurotransmission genes - PubMed \(nih.gov\)](#)

[NR4A Orphan Nuclear Receptors: Transcriptional Regulators of Gene Expression in Metabolism and Vascular Biology - PMC \(nih.gov\)](#)

Resources 5:

[A new method to boost your creativity gets rave reviews - Big Think](#)

“The new training can [...] be subdivided into three categories of narrative technique: world building, perspective shifting, and action generating,” they [write](#). “The first uses narrative techniques to help the mind imagine new environments; the second, to help the mind imagine from different perspectives; and the third, to help the mind imagine possible future actions.”

[Large-Scale Study Reveals Strange Link Between Antibiotics And Cognitive Decline \(sciencealert.com\)](#) (Impacts the gut. Therefore diet is utmost important & cognitive therapy.)

[A psychological concept called "ego effectiveness" appears to play a major role in relationship functioning \(psypost.org\)](#)

“Ego effectiveness refers to the ability to act in accordance with one’s ideal view of oneself.”

[The Get-Happy Workout For You, Based On Your Personality \(womenshealthmag.com\)](#)

“[Studies](#) show spending more time outside gives your mental and physical health a boost. And it may [support](#) the area of your brain responsible for making good decisions.”

[How neuroscience debunked "learned helplessness" theory - Big Think](#)

“Helplessness isn't learned — it's an instinctual response that can be overcome.”

[Life’s Preference for Symmetry Is Like ‘A New Law of Nature’ - The New York Times \(nytimes.com\)](#) “There is a war going on between simplicity and complexity, and we live right at the edge of it,” Dr. Seoane said. The universe tends toward ever-increasing randomness, he added, but these simple, symmetrical building blocks help make sense of that complexity.”

Resources 6:

[Motivation to Achieve Goals May Depend on Anxiety Level - Neuroscience News](#)

“The motivation to exert sustained effort to achieve a goal following stress exposure depends on an individual’s level of trait anxiety. The expression of CRHR1 in dopaminergic neurons in the ventral tegmental area connects anxiety to either boosted or diminished motivation levels.”

[Overgrowth of Key Brain Structure Identified in Babies Who Later Develop Autism \(scitechdaily.com\)](#)

“The focus of a pre-symptomatic intervention might be to improve visual and other sensory processing in babies before social symptoms even appear.”

[An historical view of the pineal gland and mental disorders - PubMed \(nih.gov\)](#)

“numerous authors have linked the origin of some mental disorders to physical and functional changes in the pineal gland because of its attributed role in humans as the connection between the material and the spiritual world”

[\(PDF\) Pineal Gland—A Spiritual Third Eye: An Odyssey of Antiquity to Modern Chronomedicine \(researchgate.net\)](#)

“Recently, modern neuroscience has proven that pineal gland is not only the melatonin-secreting neuroendocrine organ which controls the circadian rhythm, but it also has mystical and energetic associations with spirituality. It acts as a tremendous coordinator between molecular, hormonal, physiological, and chemical rhythmic orchestra.”

[Chronic stress decreases the expression of sympathetic markers in the pineal gland and increases plasma melatonin concentration in rats - PubMed \(nih.gov\)](#)

“Chronic stress affects brain areas involved in learning and emotional responses. Our findings indicate that stress may impair pineal sympathetic inputs, leading to an abnormal melatonin release that may contribute to environmental maladaptation. In addition, we propose that the pineal gland is a target of glucocorticoid damage during stress.”

Resources 7:

[Environmental Cycles, Melatonin, and Circadian Control of Stress Response in Fish - PubMed \(nih.gov\)](#)

“we are reviewing the role of environmental cycles and biological clocks on the entrainment of daily rhythms in the HPI axis and stress responses in fish”

[IJMS | Free Full-Text | The Effects of Stress and Diet on the “Brain–Gut” and “Gut–Brain” Pathways in Animal Models of Stress and Depression | HTML \(mdpi.com\)](#)

“Compelling evidence is building for the involvement of the complex, bidirectional communication axis between the gastrointestinal tract and the brain in neuropsychiatric disorders such as depression. the latest research on the effects of stress on the bidirectional connections between the brain and the gut across the most widely used animal models of stress and depression is summarised, followed by comparisons of the diversity and composition of the gut microbiota across animal models of stress and depression with possible implications for the gut–brain axis and the impact of dietary changes on these. Chronic stressors appeared to have negative effects on both brain and gut health, while supplementation with prebiotics and/or probiotics show promise in alleviating depression pathophysiology.”

[Pineal Gland Function: What You Should Know \(healthline.com\)](#)

[Brand-New Brain Pathway to Fear Discovered - Neuroscience News](#)

“long-term threat memory in the olfactory cortex could take many forms and these different neural mechanisms were all consistently hyperfunctioning in anxiety. found that the human sensory cortex, not the amygdala, is responsible for storing our memories of frightening events from the past. identifies a link between two key parts of the brain that play significant roles in conditions such as Alzheimer’s disease, post-traumatic stress disorder, schizophrenia and depression.”

Resources 8:

[Team flow appears to be a distinct brain state, according to new research \(psypost.org\)](#)

“team flow was associated with a unique pattern of brain activity. In particular, team flow was associated with increased beta and gamma brain waves in the middle temporal cortex, a type of brain activity linked to information processing. “The data from this report present a proof of concept that team flow is indeed a distinct brain state and suggests a neurocognitive mechanism of team flow,”

[The #1 Worst Eating Habit for Dementia, Suggests New Study — Eat This Not That](#)

[Nostalgia can reduce perception of pain, study shows – CNN](#) (In realizing what you truly hunger for in life.)

“Researchers found that observing pictures that triggered childhood [memories](#) was linked to participants reporting weaker feelings of pain. By managing their discomfort, rather than eliminating or reducing the (unpleasant) stimuli, people can use nostalgia to reframe their painful experiences“

[Unique Connectivity Lets Highly Creative People’s Brains Take ‘Road Less Traveled’ to Their Destination - Neuroscience News](#)

“researchers in psychiatry, behavioral sciences and psychology a look at how regions of the brain connected and interacted when called upon to perform tasks that put creative thinking to the test.

“Our results showed that highly creative people had unique brain connectivity that tended to stay off the beaten path,”

[Older People Summon More Positivity in Response to Distress - Neuroscience News](#)

“With increasing age, people react more positively to both emotional and neutral stimuli, and are better able to positively reframe a negative experience into a positive one.”

[Stress and Your Thyroid: What’s the Connection? \(healthline.com\)](#)

Resources 9:

[Where You Live Is a Factor in Your Dementia Risk - Neuroscience News](#)

“A Monash University study has found people who live in more affluent areas have superior memories and a lower risk of developing dementia, highlighting the need for better facilities in disadvantaged areas to promote healthy lifestyle habits and help curtail the growing burden of dementia.”

[Prescribing for Anxiety Has Increased in Those Under Age 35 - Neuroscience News](#)

“In 2017, 44% of benzodiazepine prescriptions were longer than the NICE recommended maximum of four weeks.”

[Long-Term Benzodiazepine \(Xanax, Klonopin, Ativan\) Use Destroys Neural Connections in the Brain \(scitechdaily.com\)](#)

[About the Treffert Center | SSM Health | SSM Health](#)

“explore the potential of the human mind, focusing on strengths rather than limitations. The center offers state-of-the-art comprehensive, multidisciplinary diagnosis and treatment of autism, behavior, and communication disorders in children and adults. Treatment includes in-home, center-based and community-based programs.”

[Scans Show Weakened Connections in Brains of Adolescents at Risk of Bipolar Disorder - Neuroscience News](#)

“evidence of weakening connections between key areas of the brain in late adolescence”

Right brain vs left brain and brain injury: <https://youtu.be/NcLJKVLnj4g>

[Utah Neuro Rehabilitation](#)

“Are you right brained or left brained. You are actually both brained. Both sides of our brains work together. If you have an injury on the right side of your brain, you may have left sided neglect.”

Resources 10:

[Study shows connection between vitamin deficiency and dementia \(clickondetroit.com\)](#)

[Where our thoughts come from: How microemotions affect spontaneous thought \(theconversation.com\)](#)

“Microemotions influence our thoughts in a [variety of ways](#). They distract our attention from its present object, they sensitize perceptual systems to notice things related to their dominant theme and they facilitate the retrieval of memories relevant to that theme. Microemotions are themselves triggered by a perception or an idea, often an unconscious one, that is significant enough to subtly activate emotional systems.”

[Copper Benefits and Foods High in Copper | Well+Good \(wellandgood.com\)](#)

[American Indian Health - Health \(ku.edu\)](#) American Indian Health and Diet Project - [Lactose Intolerance](#)

[Lactase deficiency: a common genetic trait of the American Indian - PubMed \(nih.gov\)](#)

[Feeling anxious? Don't fight it, expert says – embrace anxiety and harness its power to become more productive and build resilience | South China Morning Post \(scmp.com\)](#)

[The Neurobiology of Trauma \(nicabm.com\)](#)

“We'll look at the specific brain areas that get altered by trauma, and how this neutralizes the client's ability to problem-solve.”

Resources 11:

[Autistic and Non-autistic People Share More in Common Than Previously Understood - Neuroscience News](#)

They also recommend that it might be important to redesign educational, clinical, and workplace support for autistic people and their families. Support should be much more targeted, instead of assuming that autistic people all have mental processing difficulties, they say.

[Trauma Survivors Often Need As Much Information About A Current Situation \(themindsjournal.com\)](#)

[Colonial enslavement of Native Americans included those who surrendered, too | Brown University](#)

[Indian Slavery in the Americas | AP US History Study Guide from The Gilder Lehrman Institute of American History](#)

[Stress Breaks Hearts \(webmd.com\)](#)

“Intense [grief](#), acute anger, and sudden fear can have direct -- sometimes fatal -- effects on the human [heart](#). And long-term emotional stress shortens lives by increasing the risk of heart disease. They are more likely to develop conditions that increase heart risk, such as [obesity](#), diabetes, high blood pressure, and impaired heart rate.”

[Psychosocial stress and liver disease status - PMC \(nih.gov\)](#)

“Once an individual is subjected to such a stressor, specific pathways within the brain lead to the activation of the hypothalamic-pituitary-adrenal (HPA) axis as well as the central sympathetic outflow. This constitutes the stress response, releasing key peripheral mediators-glucocorticoids and catecholamines[3].”

[Stress and the Digestive System - Consumer Health News | HealthDay](#)

“complex connection between the brain and the digestive system. The entire system is extremely sensitive to our moods.”

Resources 12:

[Can Stress Cause Thyroid Problems? The Science | imaware™](#)

[Stress effects on the body \(apa.org\)](#)

[The impact of stress on body function: A review - PMC \(nih.gov\)](#)

[Neurobiological and Systemic Effects of Chronic Stress - PMC \(nih.gov\)](#)

[Understanding the stress response - Harvard Health](#)

[Stress symptoms: Effects on your body and behavior - Mayo Clinic](#)

[What are emotions? Neuroscientific research on animals may finally settle the debate - Big Think](#)

[Lesson of the Day: 'A Poem \(and a Painting\) About the Suffering That Hides in Plain Sight' - The New York Times \(nytimes.com\)](#)

[People with ADHD have an increased likelihood of suffering from hoarding, study finds \(psypost.org\)](#)

[L-Tyrosine Benefits for Boosting Your Mood and Memory | Well+Good \(wellandgood.com\)](#)

[Breakthrough Discovery Sheds Light on the Mysteries of Memory - Neuroscience News](#)

Resources 13:

[Childhood Emotional Trauma Linked to Heightened Multiple Sclerosis Risk Among Women - Neuroscience News](#)

[One Way to Become Less Motivated by Impulses | Psychology Today](#)

[Genetic Link Between Childhood and Adult Anxiety and Depression - Neuroscience News](#)

[5 Ways To Regulate Your Nervous System, According to a Neuroscientist | Well+Good \(wellandgood.com\)](#)

[Being In Nature: Good for Mind, Body and Nutrition - Neuroscience News](#)

[The Power of Play | Gaia](#)

[Rudy Ruettiger, The Real Notre Dame Legend Behind 'Rudy' \(allthatsinteresting.com\)](#) Inspirational story of overcoming many obstacles not limited to dysfunction, poverty, homelessness, learning disabilities, addiction and more.

[Daniel Kish | Speaker | TED](#) Another inspirational story using another sense, self taught, lack of resources yet found a way.

[Best Types of Therapy for Trauma: PTSD, Childhood Trauma, and More \(psychcentral.com\)](#)

[Emotional Healing & Overcoming Trauma | Gaia](#)

Resources 14:

https://www.childwelfare.gov/pubPDFs/brain_development.pdf Understanding the Effects of Maltreatment on Brain Development (Really Important!!!)

[How Does the Brain Learn? - Neuroscience News](#) Neuro Plasticity

[Eye Movements Could Be the Missing Link in Our Understanding of Memory - Neuroscience News](#) *“Replay of a sequence of eye movements helps boost memory reconstruction.”* **THINK IN TERMS OF REMEMBERING FUNCTIONAL, HEALTHY, HAPPY ETC. I.E., TAKING SELF BACK OR REWIRING SELF.**

[The Central Nervous System in Your Body \(verywellmind.com\)](#)

[Migraines - Brain, Spinal Cord, and Nerve Disorders - MSD Manual Consumer Version \(msdmanuals.com\)](#) Often can be due to damages due to chronic stress impacts upon the brain, spinal cord and nerves.

[Pathophysiological links between traumatic brain injury and post-traumatic headaches - PMC \(nih.gov\)](#)

[Why emotional abuse in childhood may lead to migraines in adulthood \(theconversation.com\)](#)

[Structural and Functional Brain Changes in Migraine | SpringerLink](#)

[Post-Traumatic Headache | American Migraine Foundation](#)

Resources 15:

[The brain of migraine sufferers is hyper-excitabile – ScienceDaily](#) “Have a hyper-excitabile visual cortex”

[Dissociation may indicate a high risk of worse mental health outcomes after trauma \(news-medical.net\)](#)

[How the Fight-or-Flight Response Works \(verywellmind.com\)](#) Health Psychology “In response to [acute stress](#), the body's sympathetic nervous system is activated by the sudden release of hormones. The sympathetic nervous system then stimulates the [adrenal glands](#), triggering the release of catecholamines (including adrenaline and noradrenaline).”

[Understanding the stress response - Harvard Health](#) “*Chronic activation of this survival mechanism impairs health*”

[Physiology, Stress Reaction - StatPearls - NCBI Bookshelf \(nih.gov\)](#) Note: What chemicals are good for – prolonged, stuck in FFFF mode is the opposite & causes what issues (depending on if “flight, fight, freeze or fawn” they’re stuck in due to prolonged exposure to stressors).

[Subcortical structures: Anatomy and function | Kenhub](#)

[Fight or Flight | HowStuffWorks](#)

[Experiment: Activate your Sympathetic Nervous System \(backyardbrains.com\)](#)

Resources 16:

[Biopsychology Revision Notes for A-level | Simply Psychology](#)

https://www.youtube.com/watch?v=LN9s9ruzoTml&feature=share&fbclid=IwAR2dBvbBjk0E-gi273rs_qXjCfxS8mqlj6g4oq5iIPtvzLI90pI6itRQGI 2-Minute Neuroscience: Limbic System

[Nervous System: Explore the Nerves with Interactive Anatomy Pictures \(innerbody.com\)](#)

[The Link Between Stress and Inflammation | Everyday Health](#) “**Depression** Pro-inflammatory cytokines, those chemical messengers released in response to physical or psychological stress, can trigger depressive symptoms in some people, leading to lowered mood, fatigue, and lack of normal enjoyment of life. “Inflammation can lead to symptoms that look like depression, and in people who already have depression, inflammation can worsen the symptoms,” says Dr. Trivedi. In a [study published in January 2018 in the journal *Biological Psychiatry*](#), researchers subjected mice to stressful conditions while monitoring signs of brain immune cell activation. In this study, anxiety and depression-like activity was associated with activation of the immune cells. This suggests that exposure to stress triggers immune cells in the brain, leading to the rewiring of neural circuits and setting off of mood symptoms.”

[The Conscious & Unconscious Nervous System - Biology Online Tutorial](#)

[There Are Conscious and Unconscious Agendas in the Brain and Both Are Important—Our Will Can Be Conscious as Well as Unconscious - PMC \(nih.gov\)](#)

Resources 17:

[Panic, Stress Response, and Broken Heart Syndrome | Judi L. Nath, Ph.D. \(judinath.com\)](#)

[Brain study debunks a common explanation for what causes a 'broken heart' \(inverse.com\)](#)

[Fight, Flight, or Freeze: How We Respond to Threats \(healthline.com\)](#) “Increasing Endorphins” – EXERCISE to reduce stress programming.

[Adrenal Glands | Johns Hopkins Medicine](#)

[Adrenaline Rush: Symptoms, Activities, Causes, at Night, and Anxiety \(healthline.com\)](#)

[Leaky gut: What is it, and what does it mean for you? - Harvard Health](#) Can be associated with mental illness.

[Leaky Gut Syndrome Part 2: The Physiology Behind Gut Psychology - Nourish Medicine](#) “Your brain and your gut are connected by the gut-brain-axis—picture it like a super-highway of neurons, hormones, and chemical messengers that runs from your esophagus to your anus.

This gut-brain information highway is constantly flowing with information related to feelings such as hunger, mood, and stress.

The minute your brain senses stress or danger, your gut gets the message.

And [mental or emotional stress or trauma increases gut permeability causing leaky gut.](#)”

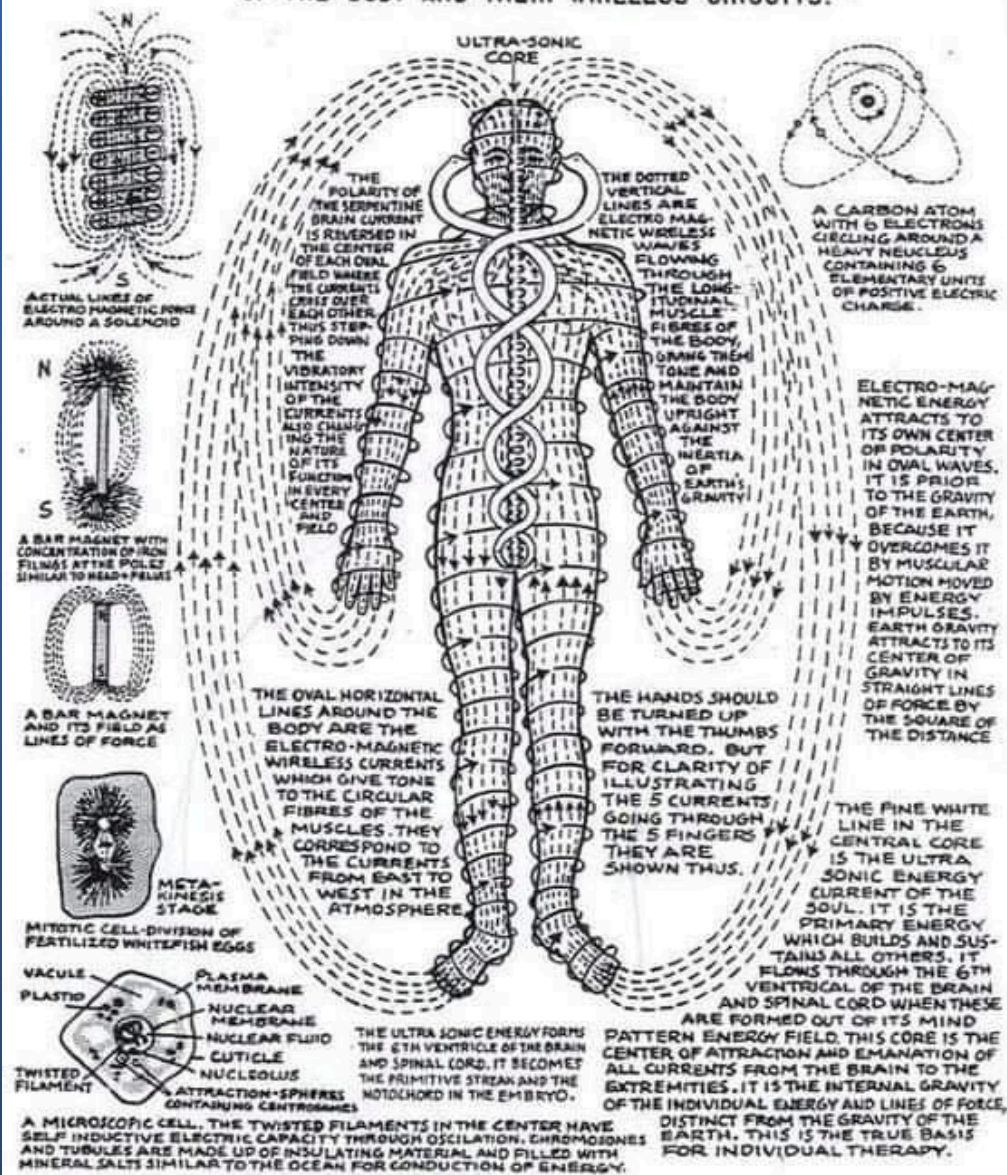
[How Stress Affects Gut Function & General Health \(stressresilientmind.co.uk\)](#)

Resources 18:

[Optimize & Control Your Brain Chemistry to Improve Health & Performance - Huberman Lab](#) “The four major neuromodulators—dopamine, epinephrine (aka adrenaline), serotonin, and acetylcholine—and describe how these neuromodulators impact a wide variety of mental states and behaviors, including focus, creativity, motivation, drive, learning, alertness, mood, relationships, and feelings of well-being. Then, with that foundational understanding in mind, I describe a potent toolkit of science-supported behavioral, nutrition, and supplementation tools that can be used to increase baseline levels of individual neuromodulators and that can be modified for specific goals.”

[What is Internal Family Systems? | IFS Institute \(ifs-institute.com\)](#)

COMPOSITE PICTURE OF THE PATTERN FORCES OF THE BODY AND THEIR WIRELESS CIRCUITS.



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