

# **And Are We Yet Alive: Trauma, Its Effects, And What We Can Do About It**

**Dr. Joy Kreider Ph.D.**



***I come to you wearing many hats:***

A follower of Jesus with Mennonite, Anglican, Episcopalian and Presbyterian roots

A neuroscientist deeply engaged with how trauma impacts the brain and impacts our world (U of Iowa, U of Colorado HSC Denver, U of Texas Austin)

A missionary among the poor working and living among gang affiliated youth in CA and then among poor taxi drivers in Phnom Penh Cambodia (2009-2021)

A trauma recovery coach who walks with trauma survivors (training through the IOATRC)

A trauma trainer and community builder (Training through EMU: the STAR program, Graduate Certificate in Conflict Transformation, and a First Aid Arts Facilitator Seattle, WA)

A Conflict mediator (trained at EMU and The Fairfield Center)

An adult survivor of CSA on my own journey out of darkness into light

# Overview

Trauma's Presence Among Us

Defining Trauma

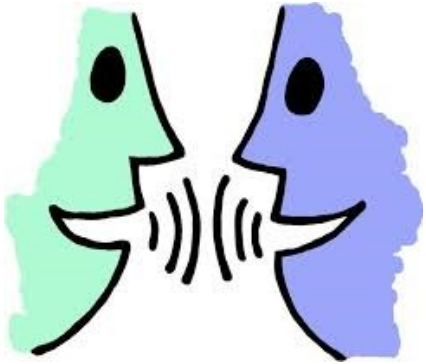
Brain Areas Impacted by Trauma:

- Amygdala
- Prefrontal Cortex

A Meaningful Response—Returning  
to Our Window of Tolerance

Pair and share

**Trauma is like...**  
In a Sentence  
what is trauma like?



Pair and Share With Your Neighbor 5-7 minutes  
And Then Come Back Together Ready To Share

**Many  
lenses!**

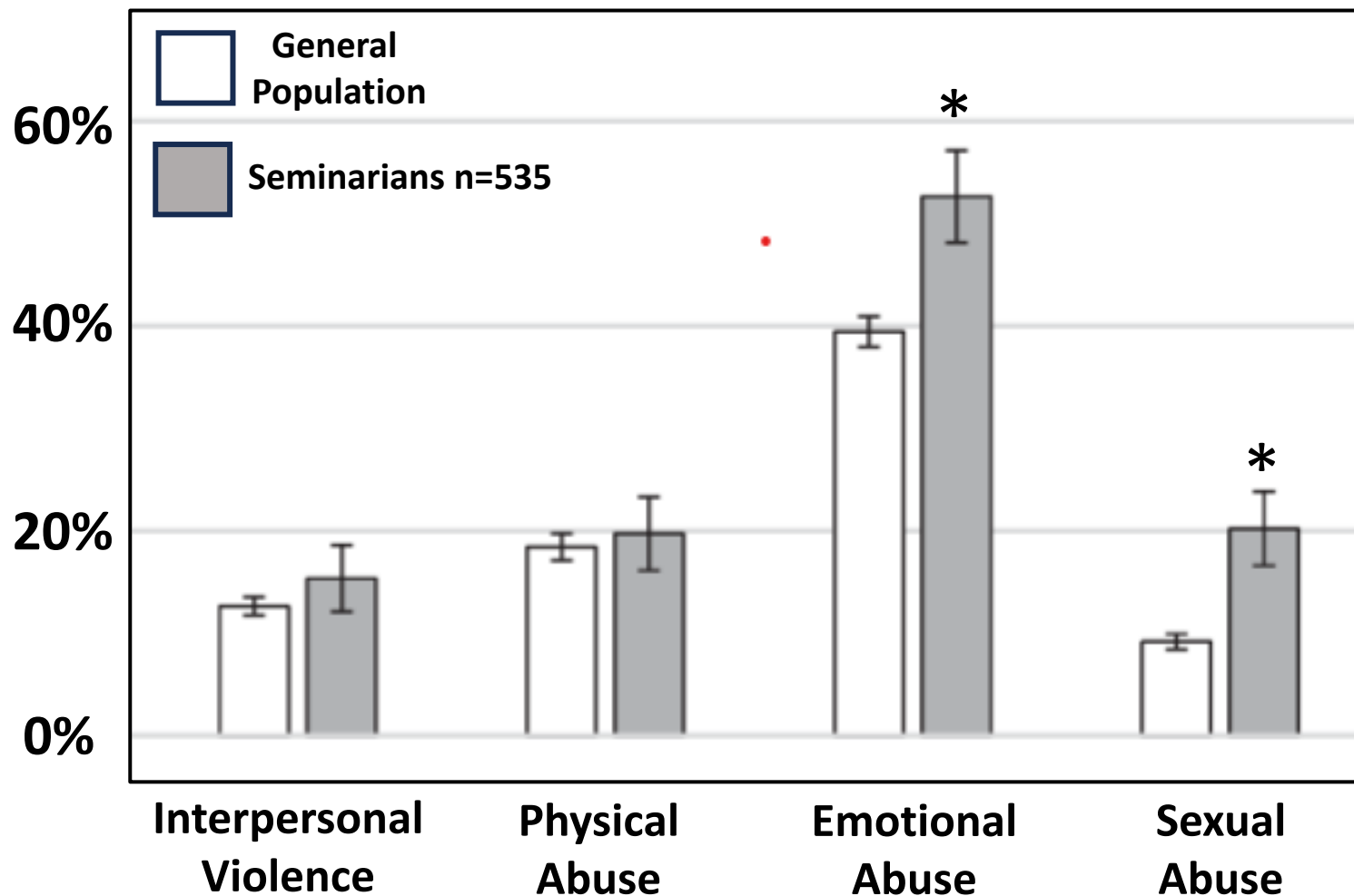
# Studying Traumatic Patterns In Seminarians: Aversive Childhood Experiences

**ACEs:** Dr. Felitti and then also Dr. Ananda noticed that weight gain, drug and alcohol addiction, and early death correlated strongly with childhood adversity like abuse, violence and factors like parental incarceration and mental illness

Holleman, Upenieks and Eagle (2023) compared rates of ACEs in seminary students and the general US population. Data was collected from 2019-2022

Sample Size: 535 in each group  
Matched Ratios for gender, age, ethnicity

What are the implications of these data?  
That pastoral staff need to be trauma-aware for themselves and those they serve!



# Trauma Is All Around Us

## Likelihood of Experiencing At Least One Traumatic Event In The US

- 60% of children (43 million people)
- 70% Adults (146 million people)
- 6% of the population has PTSD
- You don't need to be diagnosed to live with the impact of trauma

**And Resilience Is All Around Us Too!**

# Defining and Studying the Experience of Trauma:

An experience or series of experiences that is/are:

- Unexpected
- Unavoidable
- Out of Our Control
- Overwhelming

What Are Trauma's Risk Factors?

- Do I experience support?
- How vulnerable am I? (child/adult for example)
- How severe is the threat?
- Have I ever been traumatized before?

This experience...

- Profoundly threatens our sense of safety
- Is beyond our cognitive capacity to process
- The world is no longer safe
- There is no going back—it's the new normal
- Alters our ability to self-regulate our own emotions

We can be traumatized by

- Direct Experience
- Witnessing someone else's experience  
(Secondary trauma)
- Hearing about other's experiences  
(Vicarious Trauma)

## A. What Can Cause Trauma?

Living/Working In The Presence Of Ongoing Conflict

Living/Working In The Presence Of Ongoing Control (Bullying, Oppression, Emotional Abuse)

Verbal Threats And Verbal Indignities Of All Kinds (Someone's Integrity Or Worth Is Consistently Devalued)

Forced Sexual Interactions (Children Or Adults):

--Forced Sexualized Conversation

--Forced Sexualized Touch

--Forced Exposure To Sexually Explicit Imagery (Printed Or Video)

--Forced Observation Of Sexual Activities

--Forced Intercourse/Rape

Parental Neglect: Withholding Food Or Water, Failing To Bathe A Child, Failure To Offer Children Clean Clothing, Refusal To Respond To Child's Requests For Care, Behaving As If The Child Is Not There

Spiritual Abuse: Religious Or Spiritual Beliefs/Teachings that Are Used To Hurt, Scare, Invalidate Or Control Someone

All Forms Of Physical Harm: Hitting, Kicking, Biting, Beating, Scratching

All Forms Of Violence: War, Street Violence, Domestic Violence, Including Threats Of Violence

Torture: Harm Threatened Or Done To Extract Some Form Of Information From Another Person Against Their Will



## **B. What Can Cause Trauma?**

Forced Displacement From Home, Community, Nation

Racism, Sexism, Terrorism And Other –isms

Incarceration

Poverty: Limited Or No Access To Equitable Wages, Schooling, Safe Housing, Sound Medical Care

The Death Of Someone Close To You

Vicarious Trauma: Watching Someone Else Being Harmed

Secondary Trauma: Listening To Someone Else's Stories About Harm

Betrayal Trauma: When People Or Institutions One Depends On Violate That Person's Trust And Well-being

Systemic Harms Or Oppression

Serious Accidents

Medical Emergencies

Living With Chronic Illnesses Like Heart Disease or Multiple Sclerosis

Natural Disasters: Flooding, Fire, Drought, Fire

Extreme levels of shame

# What Does Post Traumatic Stress Disorder Look Like?

- 1) The Experience of a Major Threat (to me, to someone I witnessed, to someone who told me)
- 2) Unwanted reminders and reexperiencing of event (nightmares, flash backs, exposure responses)
- 3) Active Avoidance of trauma-related thoughts or feelings
- 4) Negative alterations in mood (self blame, depression, sense of isolation)
- 5) Changes in arousal and reactivity (irritable, hypervigilance, difficulty sleeping)
- 6) Symptoms longer than a month
- 7) Functional Significance

**A diagnosis is not necessary for us to carry Trauma's marks and impact!! When we face threatening things we may feel many of the things that people with the diagnosis feel but not for a long period of time**

# Sources of Stress Among Pastoral Staff During The Last Several Years (COVID and Disaffiliation):

The Ongoing Weight of Decision Making

Conflict over how pastoral care and services should be offered during a pandemic

Interpretation, and enforcement of mandated health protocols

Learning to communicate, counsel and preach on line

Loss of face-to-face pastoral care and feeling less in touch with congregation members

Witnessing higher than normal levels of suffering in the congregation

The Loss of colleagues and congregations due to disaffiliation

Decision fatigue that can give rise to pushback, accusations, criticism and second guessing from congregants

An increased need for counseling for anxiety, depression, and grief

Managing one's own fear/anxiety about contagion

Profound ambiguity about unknow outcomes...when will this be over? Who will be left standing?

# About the Brain: Our Autonomic Nervous System...Two Parts

## Gas Pedal

Sympathetic:  
“fight or flight”



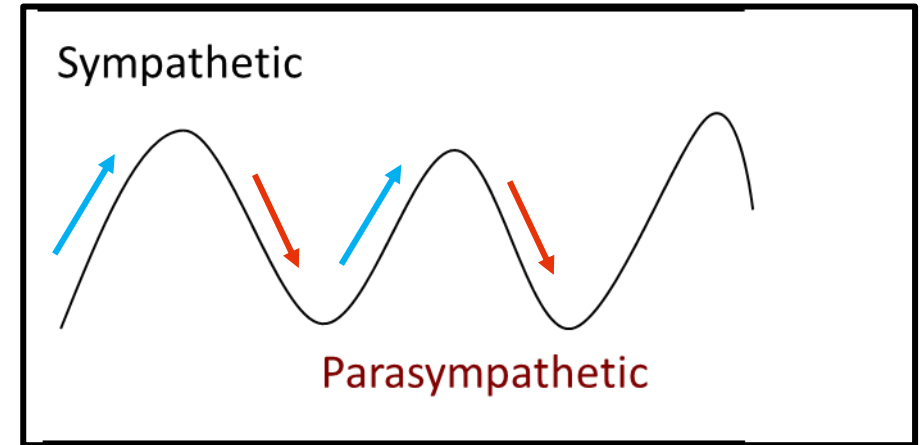
Cortisol Peak  
and Nadir

## Brake Pedal

Parasympathetic:  
“rest and digest”



THROUGH OUT OUR DAYS

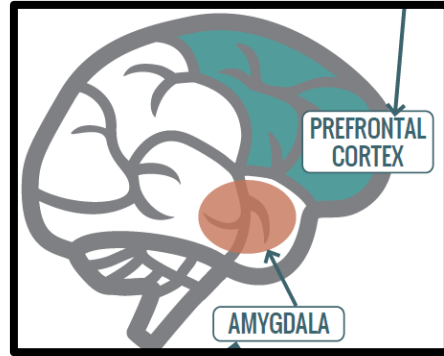


We move back and forth  
between these poles of  
neural, emotional and  
behavioral regulation

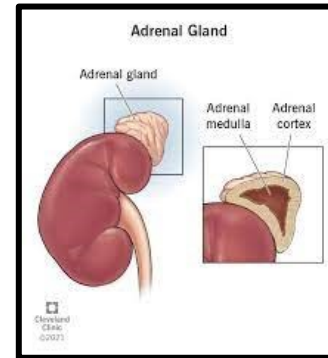
And, We are Constantly  
Monitoring  
The Possibility of Harm

# Who Is Monitoring for Harm and What Happens when Threat Arises?

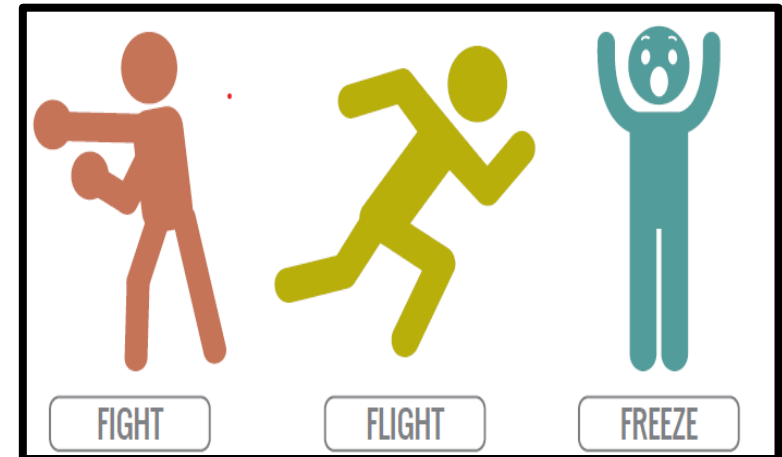
- 1) Our Amygdala (and other structures) detects threat and activates the hypothalamus



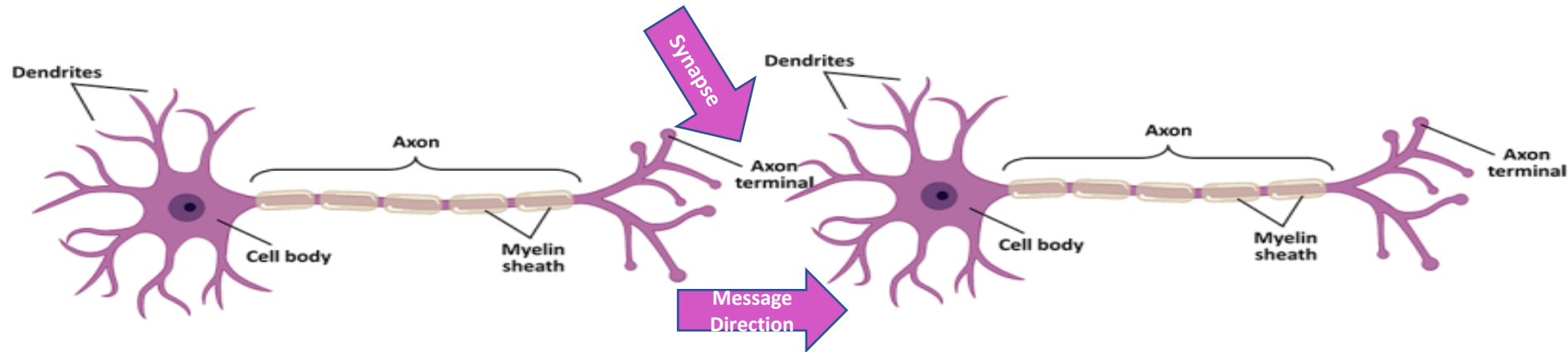
- 2) Our Hypothalamus activates the adrenal glands in the periphery and the pituitary gland which is a cortisol regulator (in the brain) and the adrenals which make adrenaline and cortisol.



- 3) Increased adrenaline and cortisol activate energy release into the blood stream and oxygenated blood, and also shuts down PFC as moves us into fight/flight or freeze

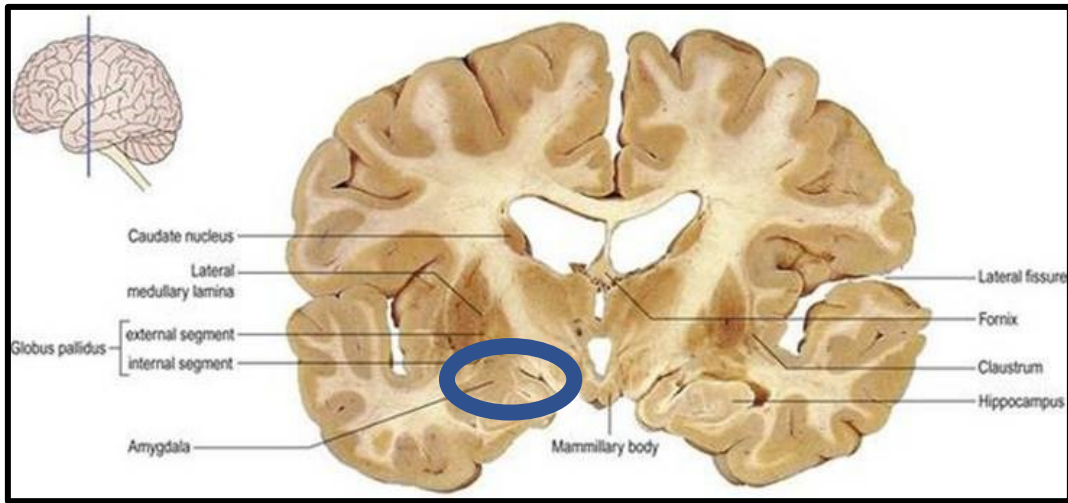


# Neurons, Synapses and Plasticity

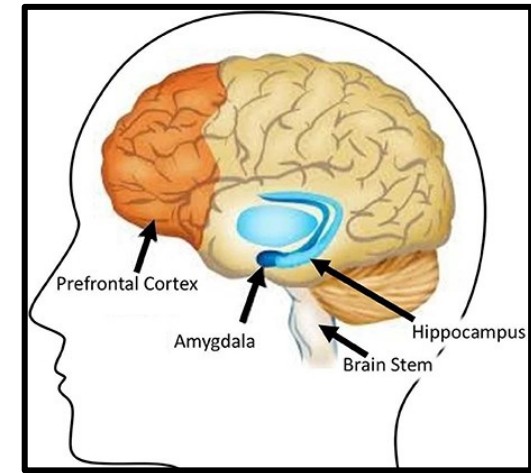


## Neurons Are The Information Processing Unit Of The Brain

- Pass electrochemical messages from one to another
- These messages can be excitatory or inhibitory
- Our experiences and memories and new learning or forgetting are tied to structural change between neurons



# The Amygdala Our Danger Monitor



## Amygdala Function In A Normal Brain

- Our rapid threat detector—always scanning for danger
- Activates Fight/Flight/Freeze as needed
- Helps us form, retain and recall emotionally laden memories

## Effects of High Levels of Cortisol

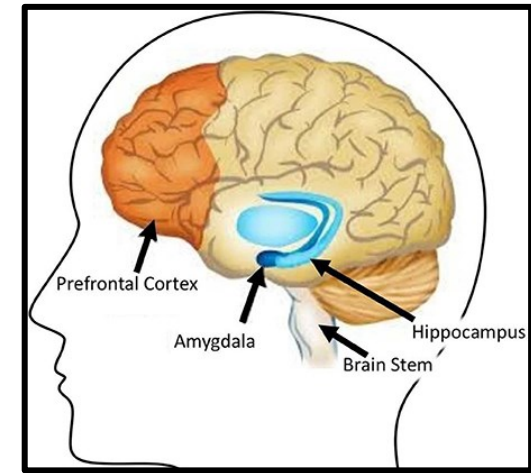
Prefrontal to amygdala connections are reduced via cortisol-driven plasticity and...

- Amygdala becomes stronger and less inhibited (longer dendrites and stronger synapses)
- Traumatic memories are difficult to extinguish and the past bleeds into the now

# Prefrontal Cortex Our Adaptable Integrator

## Prefrontal Cortex

- Emotional Regulation (not too high or low)
- Knowing I am fully present in my mind and body (body/mind integration)—PFC receives thousands of inputs from all over the body and the rest of the brain
- Plan and make flexible choices
- Helps us determine if new stimuli are as dangerous as things we have experienced in the past
- Helps reduce stress response when danger has past
- Holds amygdala in check



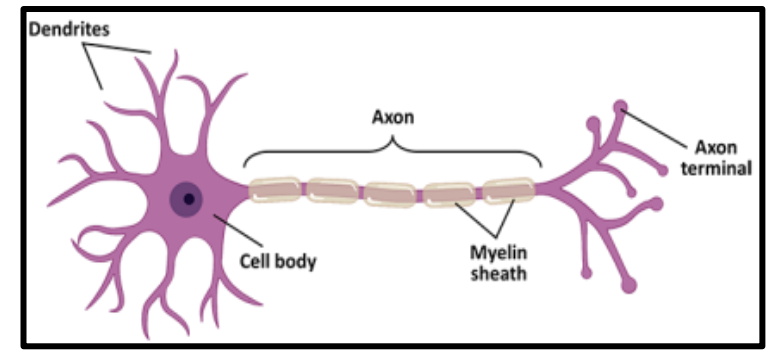
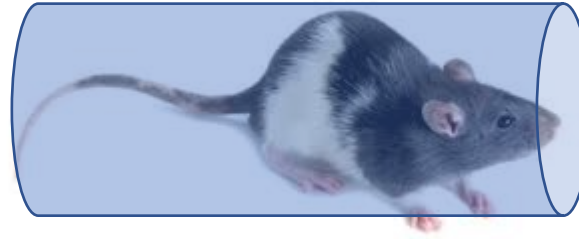
## Effects of High Levels of Stress or Trauma

- High stress-induced cortisol suppresses PFC function
- Easily enter Fight/Flight/Freeze—our brake pedal is weaker, our gas pedal is stronger
- Fails to shut down Fight/Flight/Freeze
- We become disconnected from our whole selves—this slows down any sort of effective self care or self soothing.



# Studying Trauma in Non-Human Subjects

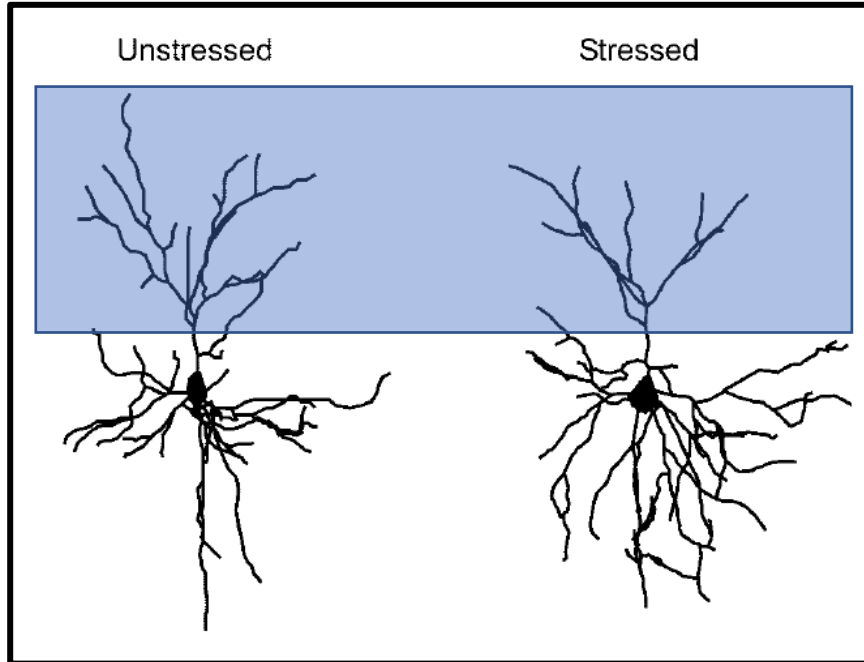
Rats have the same brain areas that mediate fight/flight/freeze response



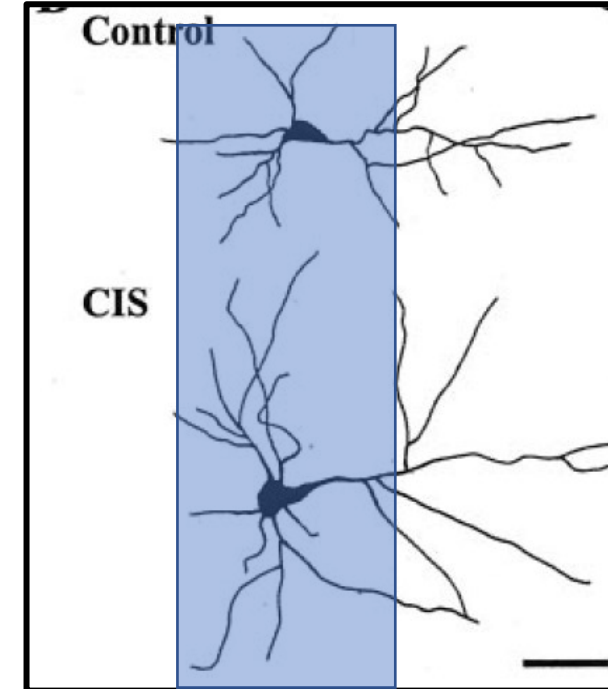
Chronic restraint stress highly activates the HPA axis in rodents and across time weakens inhibitory connections between the PFC and the amygdala and strengthens the amygdala

When rats are allowed to rest, after restraint stress, neuronal structure moves back towards normal

A similar levels of plasticity is seen in humans as well



**Prefrontal Cortex and HP Neuronal Dendrites Shrink\***



**Amygdala Dendrites and Synapses Grow\*\***

\*Cook and Wellman (2003).

\*\*Vyas, Mitra, Shankaranarayana & Sumantra (2002).

# Some Signs of Unresolved Trauma Across The Spheres Of Our Lives

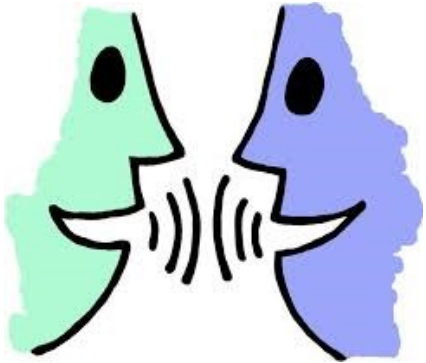
<b>Emotional</b>	<b>Cognitive</b>	<b>Behavioral</b>	<b>Physical</b>	<b>Spiritual</b>
<b>Fear/Terror</b>	<b>Confusion</b>	<b>Social Withdrawal</b>	<b>Dry mouth</b>	<b>Emptiness</b>
<b>Anxiety</b>	<b>Hypervigilance</b>	<b>Self Harm</b>	<b>Twitches/Tremors</b>	<b>Loss of meaning</b>
<b>Panic/Paranoia</b>	<b>Suspiciousness</b>	<b>Violence toward others</b>	<b>Weakness</b>	<b>Doubt</b>
<b>Anger/Rage</b>	<b>Flash backs</b>	<b>Increased substance use/abuse</b>	<b>Nausea/Vomiting</b>	<b>Looking quick fixes</b>
<b>Depression</b>	<b>Difficulty Focusing</b>	<b>Loss of/or increase of appetite</b>	<b>Chest pain</b>	<b>I am being punished</b>
<b>Shame</b>	<b>Can't make decisions</b>	<b>Not able to sleep</b>	<b>Elevated BP</b>	<b>Loss of direction</b>
<b>Guilt</b>	<b>Memory changes</b>	<b>Always on Edge</b>	<b>Rapid Heart rate</b>	<b>Cynicism</b>
<b>Sadness</b>	<b>Overly critical</b>	<b>Aggravated Startle</b>	<b>Shallow Breathing</b>	<b>Bargaining With God</b>
<b>Numbness</b>	<b>Blaming others</b>	<b>Without Words</b>	<b>Diarrhea</b>	<b>A loss of trust in God</b>

**Emotional Regulation  
Problem solving  
Clear Thinking  
All Disrupted**

**Ties with myself and with others are disrupted**

**What about vicarious trauma—how do I know if I am being impacted by the stories of those I care for?**

**Resilience is like...**  
In 10 words or less  
what is resilience like?



Pair and Share With Your Neighbor 5-7 minutes  
And Then Come Back Together Ready To Share

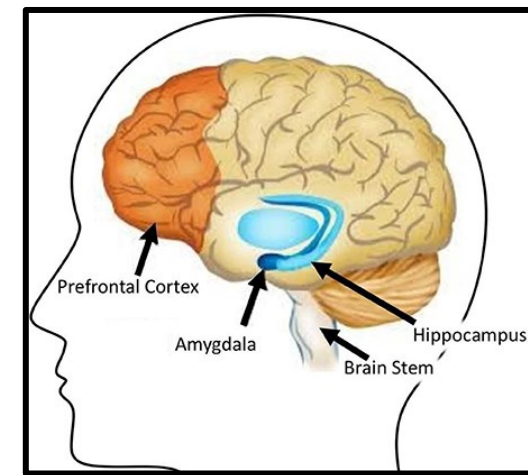
# Where Does Hope Lie For Us All?

The Brain IS FAR MORE PLASTIC (able to change) than we used to believe




Pressing the autonomic brake pedal is possible!

Rats who are removed from stressors and allowed to rest—synapses strengthen and the hippocampus and prefrontal cortex are able to resume more normal function—we believe the same to be true in humans

There are practical ways that survivors assist themselves with recovery...let's take a look at this data



# The Window of Tolerance And The Effects of Stress

HYPO-AROUSAL	WINDOW OF TOLERANCE	HYPER-AROUSAL
<p>Flat Affect Sleepy Foggy Brain Shut-down mode Not able to solve problems Not able to fully communicate needs, wants... Limited Body Awareness Numb Confused Faint Not able to Self Soothe</p>	<p>Calm Alert Able to Concentrate Focused Able to Problem Solve Able to Make Decisions Able to Communicate Needs, Wants... Aware of Whole Self Grounded Able to Self Soothe</p>	<p>Overwhelmed Anxious/Agitated/Panic Shaking Sweating Impulsive behaviors Breathing and Heart Rate Increases Angry Decisions are extreme! Not Able To Solve Problems Not able to fully communicate wants/needs Wanting to get out of my body</p>
 <p><small>This Photo by Unknown Author is licensed under CC BY-NC</small></p>	 <p><small>This Photo by Unknown Author is licensed under CC BY-NC</small></p>	 <p><small>This Photo by Unknown Author is licensed under CC BY-SA</small></p>

**Dr. Siegel** noticed that....

Notice that this section sounds like the PFC

Same Activities work for both extremes!

## The Window of Tolerance And The Effects of Stress



**Exploring Your Window of Tolerance.** It would be easy to spend an entire session digging into how we feel, how we become dysregulated and how we recover.... here are a few questions to get started.

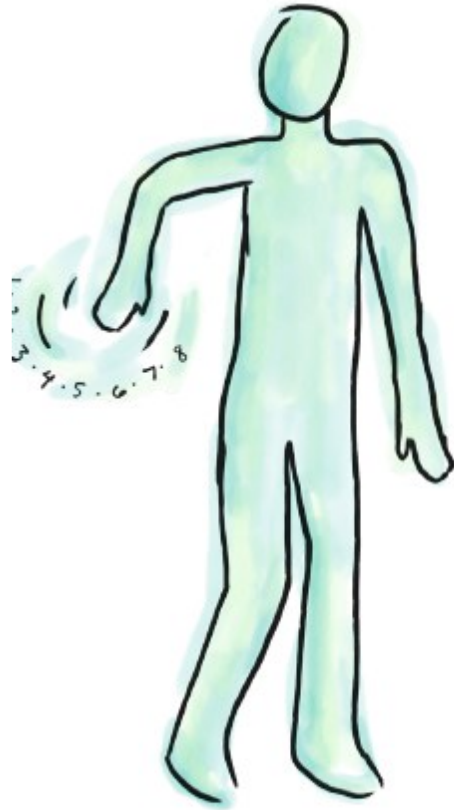
- 1) Think about times when you are very stressed or anxious write down several adjectives from the list that you experience.
- 2) When you are anxious, how does your body feel? Tight, numb, edgy...what other adjectives describe how you feel inside?
- 3) Think about the other side of agitated as you reach for a deeper sense of calm—what helps you to get out of hyper- or hypo-arousal?

Do you send yourself messages about calming down?

What might those be?

- 4) What does your body feel like when you come back towards your relational zone or window of tolerance?

# SHAKE IT OUT



FIRST AID ARTS ♥ MINI TOOLKIT

## Why This Works:

- Stress creates patterns of muscular tension and activates stress hormones that can build up in our body.
- Tension and stress can be released through vigorous shaking. Adrenalin may reduce this way
- Counting out loud while we do this engages our executive functioning (our thinking brain Prefrontal Cortex included), which helps to integrate our brain and body.

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Prepare...

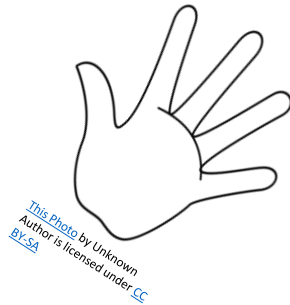
## Four Things Grounding Exercise



**Four things:** Ask yourself what are four things I can see and then name those four things. Take several deep breaths.



**Three Things:** Ask yourself—what are three things I can hear? Name those 3 things. Take several deep breaths.



**Two Things:** Ask yourself—what are two things I can touch? Name those 2 things. Take several deep breaths.



**One Thing:** Ask yourself—what is one thing I can smell? Name that thing. Take several deep breaths.



# Why Might Sensory Grounding Help?

- 1) Breathing slowly and intentionally can press the autonomic brake pedal and helps reduce anxiety
- 2) Choosing to come into present moment aware multiple sensations activates the PFC
- 3) Choosing to do this exercise with others can help us feel more connected to other people.
- 4) The PFC gets more sensory feedback from the body and feedback from the rest of the brain the most other brain areas. When we intentionally pay attention to our senses we are pushing back against and uninhibited amygdala

# Returning to the Window of Tolerance

<b>Singing</b>	<b>Sitting quietly and coloring</b>	<b>Working with clay</b>
<b>Breathing in on a count of 4 and breathing out on a count of 8 for 5 minutes</b>	<b>Listing my supports and happy places</b>	<b>Sitting quietly with others and slowly reading through a favorite psalm</b>
<b>Rocking in rocking chair while listening to calming music or while holding a child</b>	<b>When numb— eating crunchy and sweet foods</b>	<b>Any activity that helps us come fully into the present and fully aware of body and mind</b>
<b>Swinging on a swing</b>	<b>All forms of exercise</b>	<b>Using a stress ball</b>
<b>All handy-crafts</b>	<b>Grounding Techniques (5 Things)</b>	<b>Spending time with a friend</b>

Trauma pushes us away from mind/body integration. Experiences that help us reconnect with our bodies, help us sense that we are safe and that we are cared for can push back. These kind of techniques help us step on the brake pedal and regain control of a mind and body that may feel chaotic and always stressed.

# In Summary

## In Summary

Trauma distinctively impacts our brains. It can cause PFC synapses to weaken and amygdala synapses to strengthen and it often disrupts mind/body/I am here now connections. Additionally, traumatic experiences often leave us feeling like we are forever alone and yet still unsafe. These effects are consistent with how the, PFC and Amygdala change when stress levels and cortisol production is high.

Clinical medicine, body work therapies, and Neuroscience are demonstrating that there are practices that can help us apply the brake pedal by changing breathing patterns, exercise, and other experiences that recruit much of what makes us human...our senses, our emotions, our ability to move and to create—can help us reduce the effects of anxiety, panic, foggy brain and numbness.

On this journey, all trauma survivors need people who will listen to their story, not silence them, and who patiently stay on the journey with them. In the garden, Jesus asked his friends to stay awake and pray with him. Yes, this what we have to offer each other when harm has happened.

Rather than hopelessness, I hope you heard in this talk today, that it is possible to push back against the effects of trauma and find a new normal that includes good self-care, interactions with trusted loved ones, and other activities that help us reconnect to ourselves and others.