Pathways to Professional Development

Building Foundations in Infant and Early Childhood Mental Health

The Impact of Stress and Trauma on Brain Systems, Relationships and Infant/Child Development/The ACE Studies

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Pathways to Professional Development: Building Foundations in Infant and Early Childhood Mental Health

Pathways to Professional Development was developed to build workforce competence and to prepare professionals working in the perinatal and birth to 5 periods

- 21 webinars focused on the foundations of Infant and Early Childhood Mental Health.
  - Provided live virtually
  - Recorded for viewing as LMS modules
- Diagnostic Classification of Mental Health And Developmental Disorders of Infancy and Early Childhood (DC:0-5) offered virtually and in-person.
  - View all offerings here→ https://www.ctacny.org/special-initiatives/pathways-to-professional-development/

The aim is to develop a well prepared and competent workforce trained to **identify** and address mental health concerns early, to **promote** awareness of mental health, to **prevent** long-term problems and to **intervene** to help children stay on developmental track.

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Pathways to Professional Development Webinar Series

- **Module I:** Developmental and Psychodynamic Foundations of Infant and Early Childhood Mental Health – 6 Webinars
- **Module II:** Assessment, Diagnosis, Formulation and Professional Development – 4 Webinars
- **Module III:** Risk, Stress, Protection and Resilience – 2 Webinars
- **Module IV:** Through the Lens of Family, Community and Culture – 2 Webinars
- **Module V:** Specific Disorders: A Closer Look: 4 Webinars
- **Module VI:** Helping in Infant and Early Childhood Mental Health – 3 Webinars

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Learning Objectives

1. Identify the continuum of stress and the adverse effects of toxic stress.

2. Describe trauma and its effects on brain systems, and the interpersonal requirements for managing stress.

3. Describe the “Self-Reg” framework and the five domains of stress.

4. Understand the scientific evidence for unfavorable consequences of cumulative stress through the Adverse Childhood Experiences (ACE) studies.

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Who we are

These trainings are funded by the New York State Office of Mental Health (OMH) and provided by the New York Center for Child Development (NYCCD) in collaboration with CTAC.

- **New York Center for Child Development** (NYCCD) has been a major provider of early childhood mental health services in New York with a long history of providing system-level expertise to inform policy and support the field of Early Childhood Mental Health through training and direct practice.

- **NYU McSilver Institute for Poverty Policy and Research** houses the Community and Managed Care Technical Assistance Centers (CTAC & MCTAC), Peer TAC, and the Center for Workforce Excellence (CWE). These TA centers offer clinic, business, and system transformation supports statewide to all behavioral healthcare providers across NYS.

    - **NYCCD and McSilver** also run the **NYC Early Childhood Mental Health Training and Technical Assistance Center(TTAC)** which offers ongoing training and technical assistance for those working during the perinatal period to age 5

https://ttacny.org/

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Module 3 - Webinar 1: Overview
The Impact of Stress and Trauma on Brain Systems, Relationships and Infant/Child Development/The ACE Studies

Stress is unavoidable and not all stress is bad. This presentation will examine the types and levels of stress and explore the developing capacities for infants and young children to manage stress. We will explore the impact of negative stress and trauma on brain development and functioning, the hierarchy of the stress response, and its impact on relationships. The relationship between co-regulation and self-regulation will be described and the "Self-Reg" framework (Shanker) will be presented with 5 core domains of stress identified.

The evidence for the connection between cumulative stress and unfavorable health, social and mental health outcomes will be described through the Adverse Childhood Experiences (ACE) studies. Risk and protective factors will also be examined, and strategies for reducing stress will be presented.

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But First, A reminder from Webinar 1.1: Guiding Principle 6

The infant-parent relationship emerges within a unique set of cultural and economic factors, which provide an historical and practical context to the family and to the intervention.

Infant care, expression of affect, use of health care and relationships with interventionists are profoundly influenced by the culture and economic resources of the family.

The experience and expression of stress and the caregiver response to stress, are influenced by the same cultural forces that organize all development! We must always consider the cultural context and meaning of events through the eyes of the child and family!

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Infant Mental Health
A field of study

Infant Mental Health is an interdisciplinary field concerned with the optimal physical, social, emotional and cognitive development of the human infant within the context of his/her family. The infant is principally viewed within a primary relationship – often, but not always the mother - and this pair or *dyad* is the principal focus of infant mental health.

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Infant Mental Health
The emotional capacities

The capacity that infants and children develop to:

- Self regulate
- Experience the full range of human emotions
- Engage in loving, reciprocal relationships
- Represent the world in thought and language
- Engage in shared emotional thinking and relatedness
- Become intimate and care for others interdependently
- Engage in productive activities

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What We Plan to Cover

- The Continuum of Stress and the Brain
- The Effects of Trauma and the Interpersonal Needs for Managing Stress
- Allostatic Load
- The Self-Reg Framework: 5 Domains of Stress and 5 Steps to Help
- The Hierarchy of Stress and Connectiveness
- Cumulative Stress and the ACE Studies

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What is a stressor?

"A stressor is anything that requires us to burn energy in order to keep internal systems running smoothly."

"Stress can be positive or negative, overt or hidden, physiological or psychological, internal or external, self-imposed or forced upon us."

-Stuart Shanker

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What is a stressor?

- is a situation that imposes a special hardship,
- presents a challenge to our physical, emotional and spiritual resources,
- engenders a heightened state of physiological arousal that may help in the short term, but is depleting over the long term,
- can be felt directly by children, and indirectly through the child's primary relationships
- Anything that expends energy!

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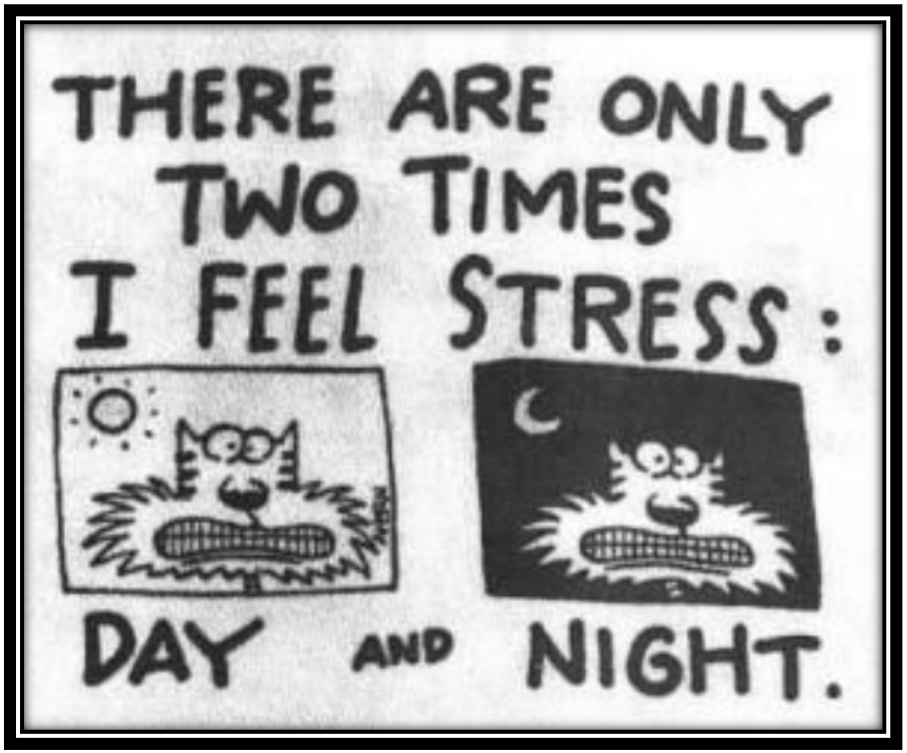
Thinking About Stress



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Three Categories of Stress

Stress is not always avoidable and is not always bad!!!

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Three Levels of Stress in Children

A continuum

Normal or "routine" stress

Tolerable but depleting stress

Toxic – Traumatic Stress

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Three Levels of Stress in Children

Positive Stress

Short, stressful events like meeting new people or starting the first day of school are healthy for brain development. They prepare the brain and body for stressful situations later in life.

Tolerable Stress

Tragic, unavoidable events like a natural disaster or losing a loved one aren't good for us. But if supportive caregivers are around to buffer the stress response, these events won't do lasting damage to the brain and body.

Toxic Stress

Ongoing, repeated exposure to abuse or neglect is bad for brain development. If no supportive adults are present to help buffer the stress response, stress hormones will damage developing structures in the child's brain. The result is an increased vulnerability to lifelong physical and mental health problems, including addiction.

Stress

Positive or Tolerable

- Predictable
- Moderate
- Controlled

Resilience

Toxic

- Unpredictable
- Severe
- Uncontrolled

Vulnerability

The presence of attuned, caring and co-regulating relationships to buffer the effects of stress are critical!

THE PHYSIOLOGY OF GOOD STRESS

- Stress allows us to perform better – it alerts us to the need to flight, fight, freeze or faint
- Stress produces cortisol, which improves memory and enhances immune function
- Stress increases the level of adrenaline in the body, which increases strength and endurance
- Stress provides a spike on blood pressure, flooding our muscles and brain with oxygen

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THE PHYSIOLOGY OF BAD STRESS

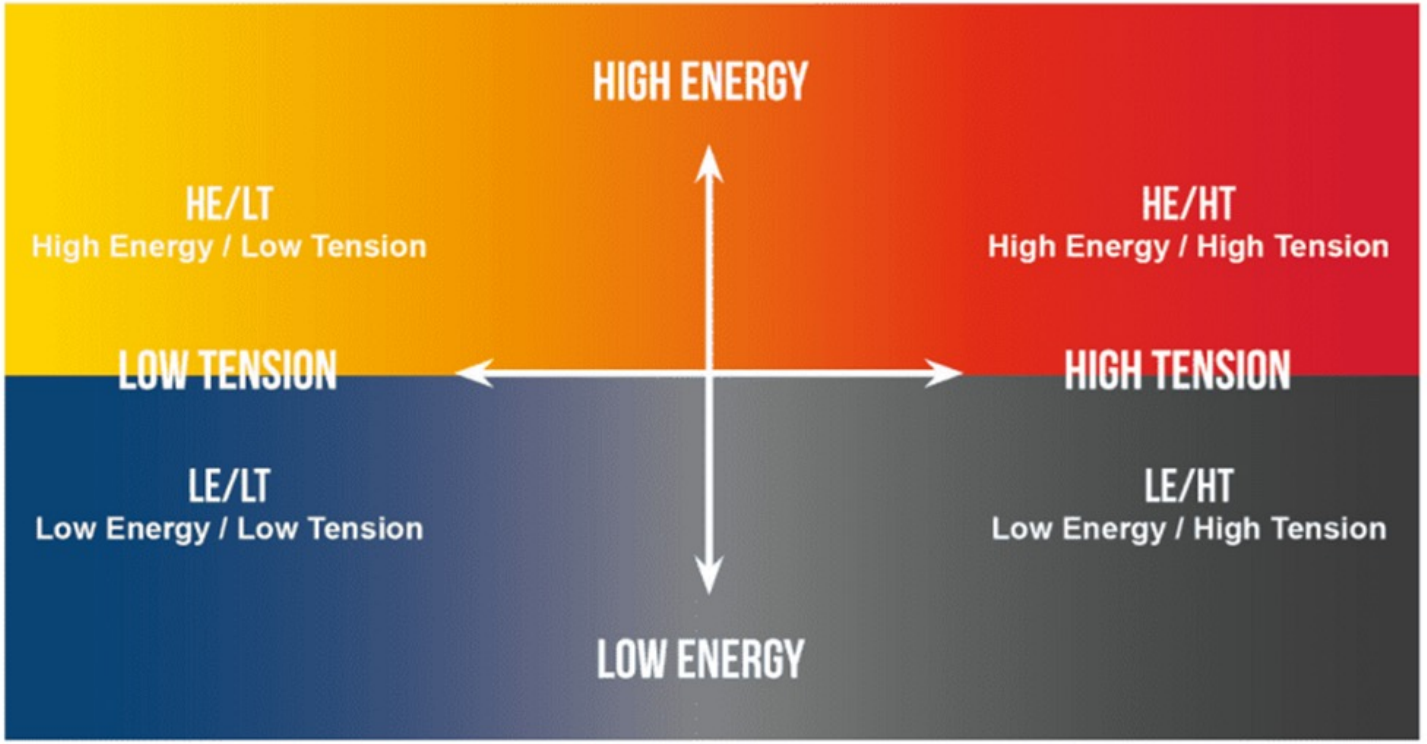
- The allostatic system (controls hormones that mediate the effects of stress –especially on the cardiovascular system) becomes too charged with no chance to vent the buildup of energy
- Increases in cortisol, endorphins, adrenaline, and other hormones can become harmful
- The overload can damage memory, hurt your immune system, and enlarge your stomach.

The Thayer Matrix

Source: https://self-reg.ca/thayer-matrix/

Alert and Optimistic

Calm and Relaxed



Motivated Flow

Irritable, Anxious

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The Thayer Matrix

Source: https://self-reg.ca/thayer-matrix/

- Based on the work of psychologist Robert Thayer, this matrix helps us understand the relationships among **stress, energy and tension.**

- Every day our brains and bodies are subject to constantly shifting arousal states, which Thayer classified in terms of energy/tension:
- Low tension//low energy: **calm, relaxed**
- Low tension/ high energy: **alert, optimistic**
- High tension/high energy: **motivated, flow**
- High tension/low energy: **irritable, anxious**

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The Thayer Matrix

Source: https://self-reg.ca/thayer-matrix/

Some Possible Scenarios

- **Low energy/low tension**: good for sleep and relaxation
- **High energy/high tension**: good for physical and mental challenges (sports, getting away from threats, major mental challenges)
- **High energy/low tension**: alert, yet relaxed state ideal for most daily activities
- **Low energy/high tension**: feeling stressed out: irritable, distractible, and lack of energy for doing the tasks at hand

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Allostatic Load

McEwen and Stellar (1993)

Refers to the "the wear and tear on the body" and mind that occurs when the individual encounters repeated or chronic stress.

It represents the physiological and psychological consequences of heightened neurological and hormonal responses resulting from repeated stress.

The ability to predict stress and the availability of attuned and cco-regulating caregivers for young children to buffer stress, are essential requirements to reduce the load.

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Stuck in Stress Reactivity

- Hyper-arousal can become permanent – the new "normal" ☹
- Tense and anxious all the time
  - Chronic muscle tension (shoulders, face, forehead, jaws, hands, back)
  - Elevated heart rate/ blood pressure
  - Stomachaches/ indigestion
  - Sleep disorders

Reminders from Webinar 1.3 on Brain Development

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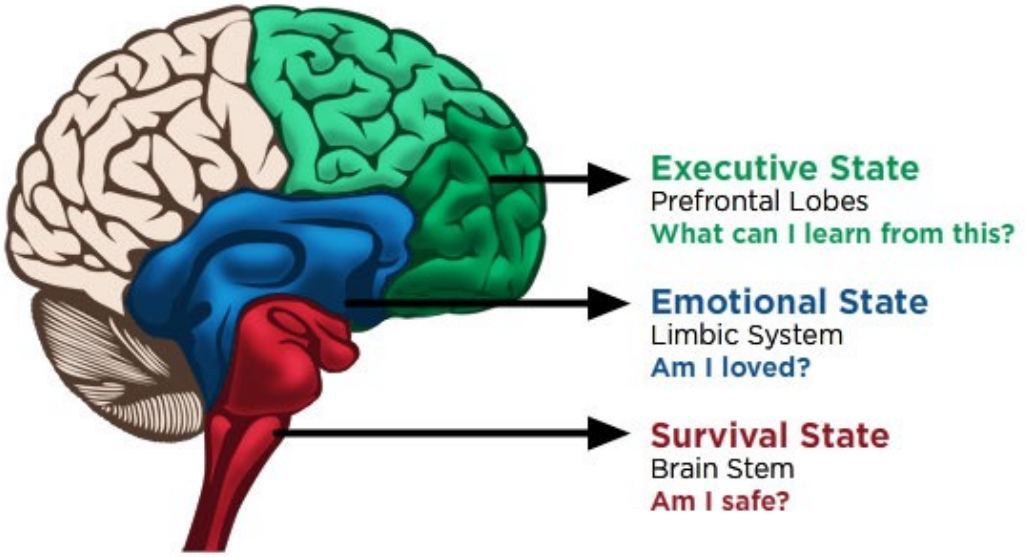
So lets talk a bit about what is going on in the infant brain(and ours) when we are stressed.

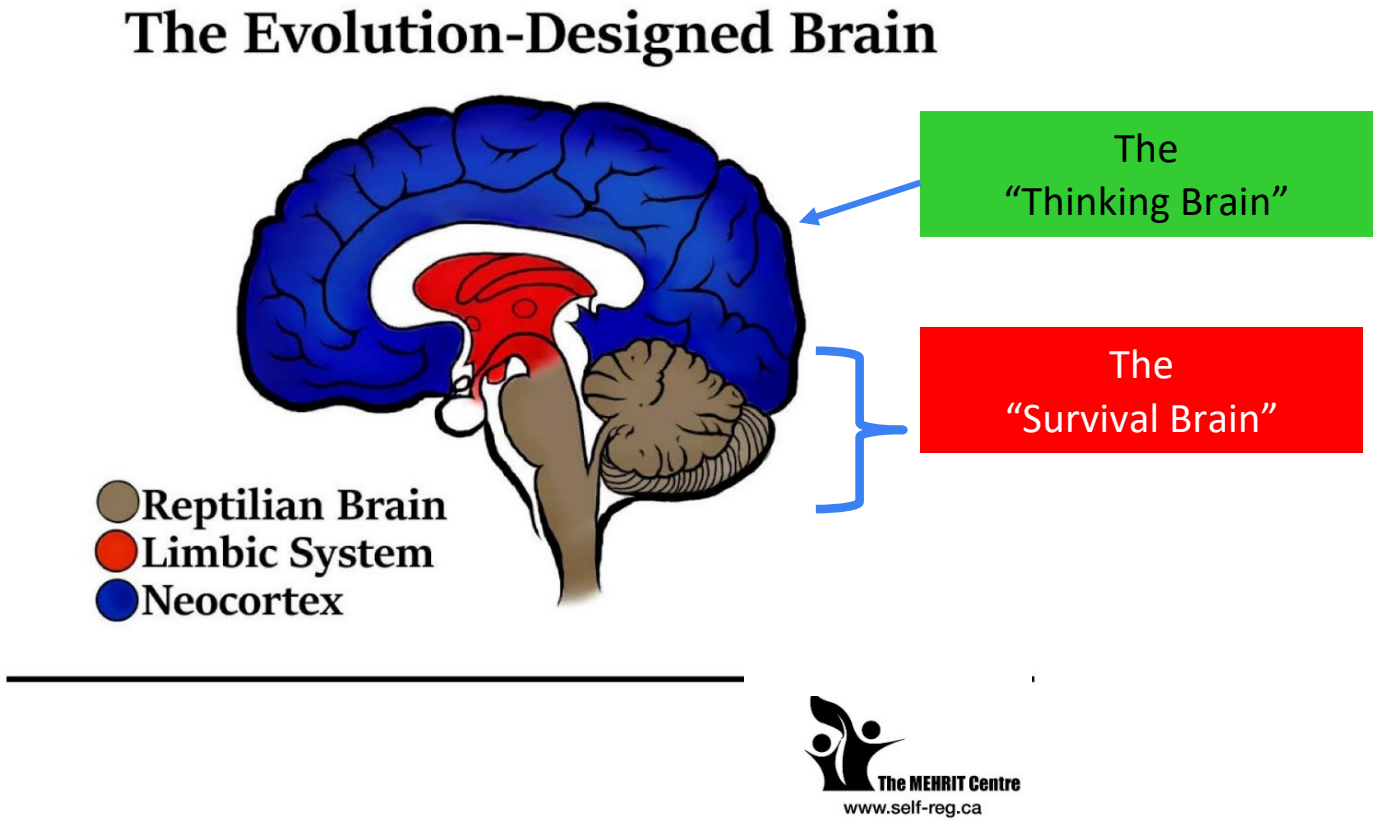
Remember the TRIUNE BRAIN – From Webinar 1.3

The evolution-designed brain

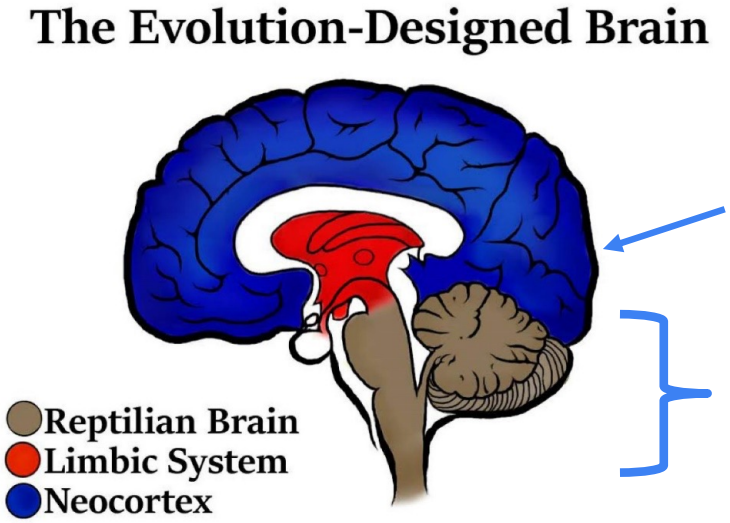


(Porges, 2009; Siegel & Bryson, 2012; Shanker, 2012;)

The Triune Brain



An Artificial but Helpful Distinction



Learning

This is derailed

Developmental Foundations

When this is disrupted

The MEHRIT Centre
www.self-reg.ca

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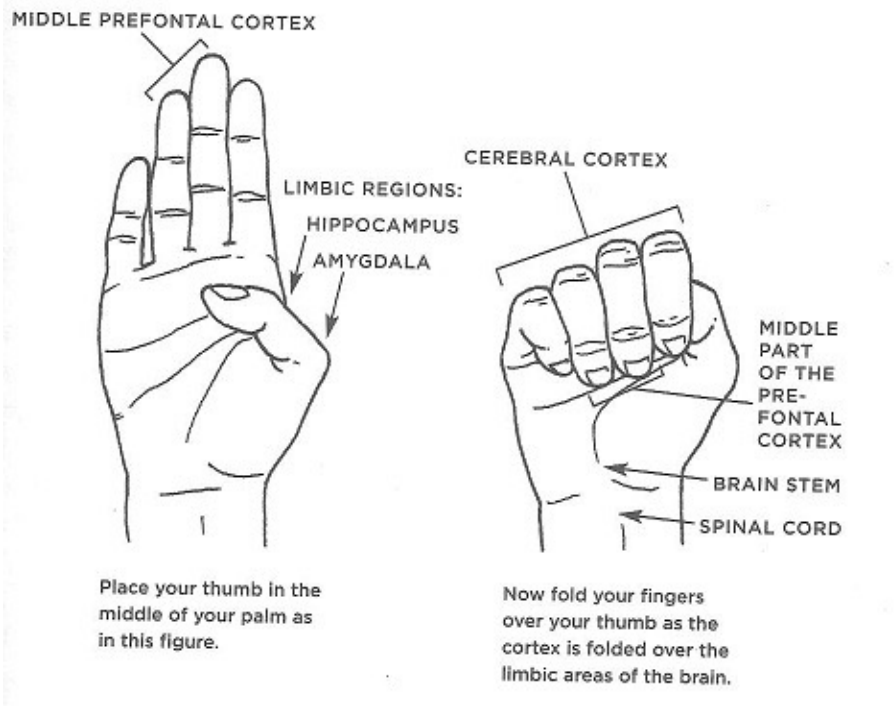
MIDDLE PREFONTAL CORTEX
LIMBIC REGIONS:
HIPPOCAMPUS
AMYGDALA
Place your thumb in the middle of your palm as in this figure.
CEREBRAL CORTEX
MIDDLE PART OF THE PRE-FONTAL CORTEX
BRAIN STEM
SPINAL CORD
Now fold your fingers over your thumb as the cortex is folded over the limbic areas of the brain.

Daniel Siegel
The "Hand Model of the Brain"

"....Lift up your fingers and you'll have an image of how we 'flip our lids' and head down the 'low road' in our interaction with others."

Mindsight (2010), p. 22

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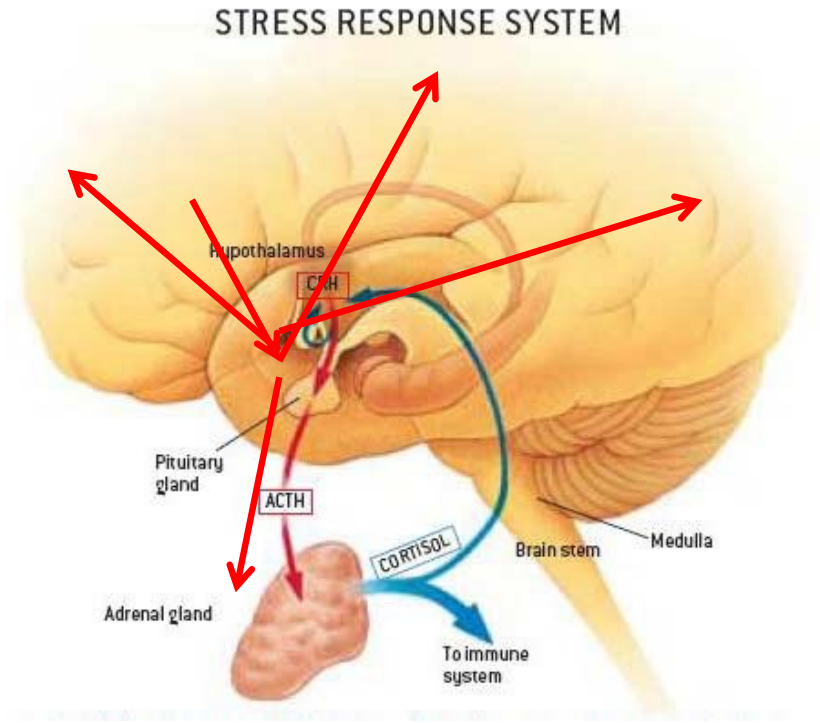
Unlike Las Vegas….

*What happens in the amygdala does **NOT** stay in the amygdala!*



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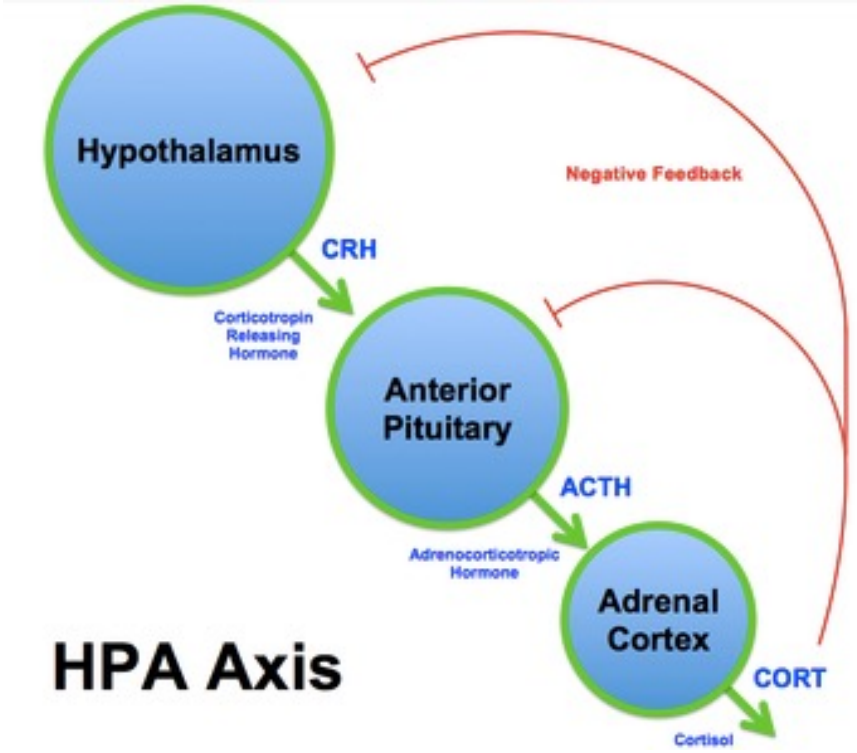
Hypothalamic-Pituitary Adrenal (HPA) Axis

Fear
Trauma
Danger



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What suffers from too much stress?

- **Executive functioning** suffers because regions of the brain which control planning, memory, learning, and behavior can be negatively impacted by toxic stress.

- **Emotional regulation** suffers because there can be an increase in neural connections related to fear, anxiety, and impulsive responses.

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Consider the Effects of Child Maltreatment to be covered in Webinar 3.2.

- Child maltreatment and well-intentioned interventions are stressful events that alter brain chemistry and affect the *child's and adult's* allostatic load.
- IECMH-considerations can reduce the adverse effects, including the unintended consequences ("iatrogenic effects") of intervention.

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The Hierarchy of the

Stress Response

They may have a fight or flight response to a “stressful” situation.


Freeze

They might just withdraw and shut down.

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They may try to engage with someone familiar to help them feel safe and calm.

They may try to calm and soothe themselves.

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Social Engagement

How Children Succeed (2012)
Paul Tough

The “firehouse” effect!

The result of a chronic activation of the HPA system, and the **prefrontal cortex** is most affected!

- What suffers? Executive Functioning!
- What happens? The “air-traffic” control system of our brain is derailed.(Shonkoff)

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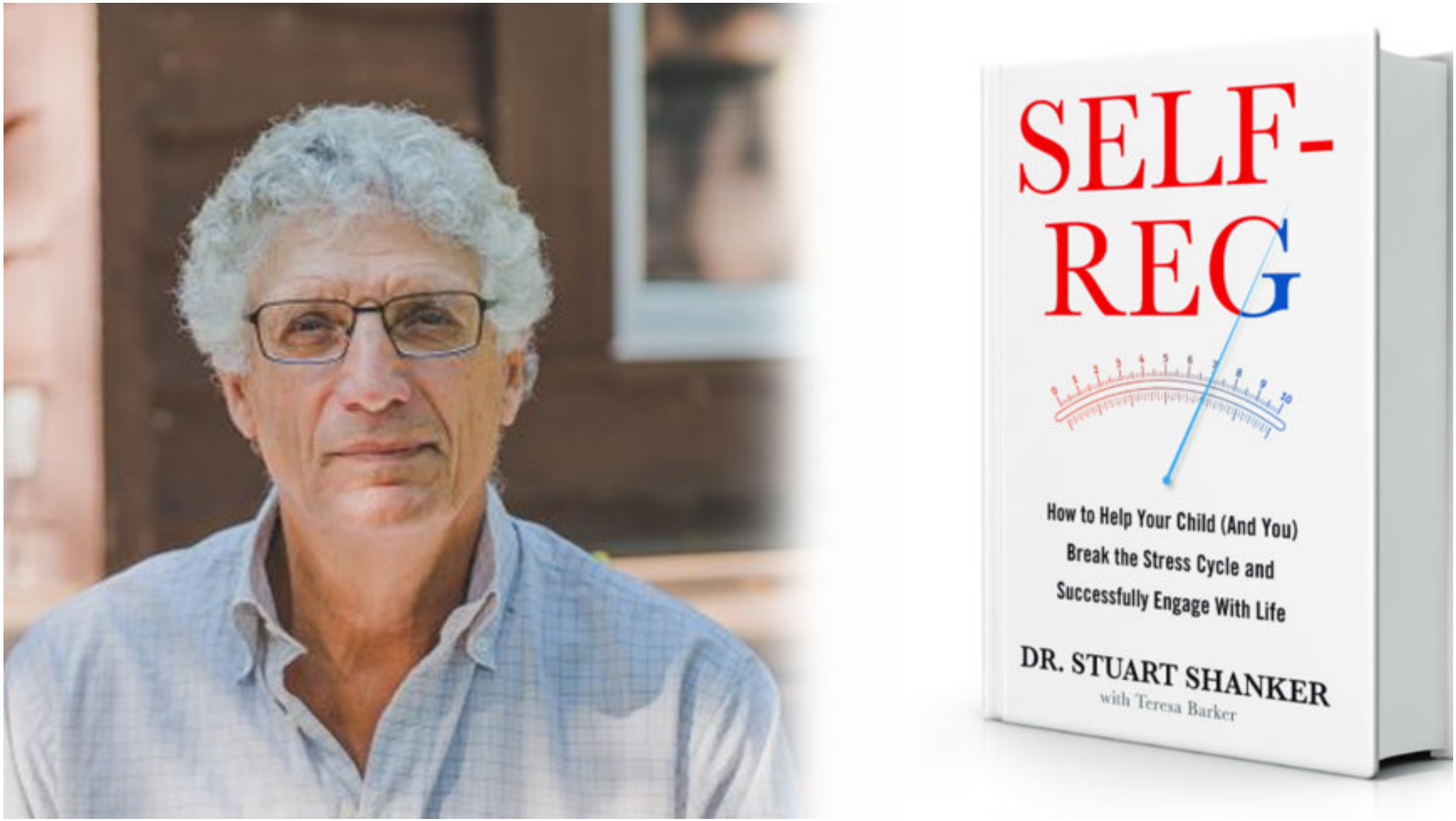
SELF-
REG
How to Help Your Child (And You)
Break the Stress Cycle and
Successfully Engage With Life
DR. STUART SHANKER
with Teresa Barker

THANKS

Dr. Stuart Shanker
Dr. Susan Hopkins

The MEHRIT Centre
Canada

The Self-Regulation Framework

- Self-regulation is concerned with the manner in which an individual deals with stress, in all
  its many forms, and then recovers from the energy expended.
- An individual (be they a child, parent or educator) exposed to too much stress in the
  early years, may develop a “kindled alarm system,” in which even relatively minor stressors can send them into fight-or-flight or freeze.

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The Self-Regulation Framework

- There are five domains in the Self-Reg Framework: biological, emotional, cognitive, social and prosocial
- The Self-Reg Framework is not a program— it is a practical paradigm through which parents and teachers can better understand a child or student and others.
- Self-Reg is a five-step method to enhance self-regulation in children, youth, young adults,
  and adults:

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Self-Regulation

DEFINITION

how efficiently and effectively an individual deals with a *stressor* and then recovers (Porges, 2011; Lillas & Turnbull, 2008; McEwen, 2007).

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Why are we talking about self-regulation?

- Scientific research indicates that how well students do in school can be determined by how well they are able to self-regulate.
- Some researchers believe that self-regulation should be considered a more important indicator of educational performance than IQ.

Blair & Diamon, 2008: Duckworth & Seligman, 2005; Shonkoff & Phillips, 2000.

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Recognize the Stressors

What could be stressing a child (and you)?

Dr. Stuart Shanker organized this into

5 Domains that we can wonder about…

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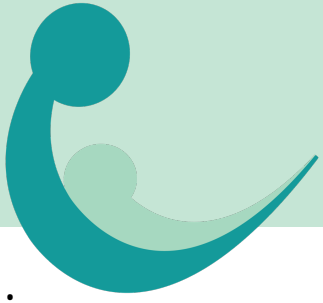
Being a Stress Detective

Biological Domain

The Biological Domain



- When stress is from our biological domain, we may have challenges with:
  - Physical health
    - A compromised immune system
  - Sufficient energy waking up
    - Maintaining energy throughout the day
  - Recouping energy after difficult experiences
  - Remaining calm amid distracting visual and auditory stimuli
  - Engaging in (and enjoying) physical activities
    - Enabled by well functioning motor systems

Being a Stress Detective

Emotional Domain

The Emotional Domain

- When stress is from our emotional domain, we may have challenges with:
  - Modulating strong emotions
  - Emotional resiliency
    - Recovering from disappointment, challenging situations, embarrassment, etc.
    - Moving forward confidently and positively

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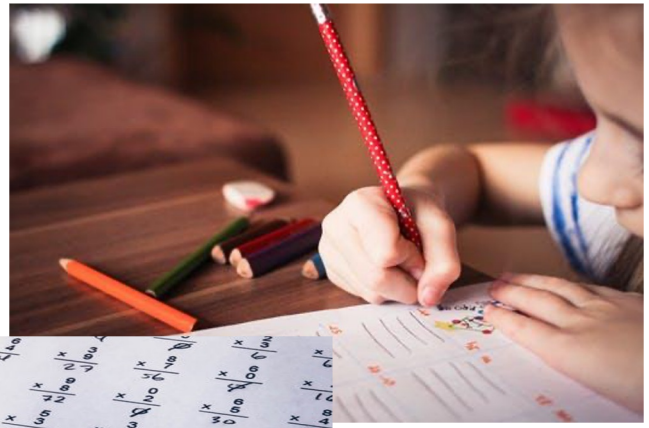
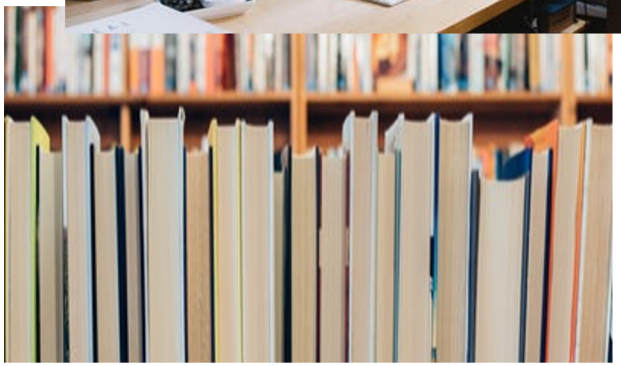
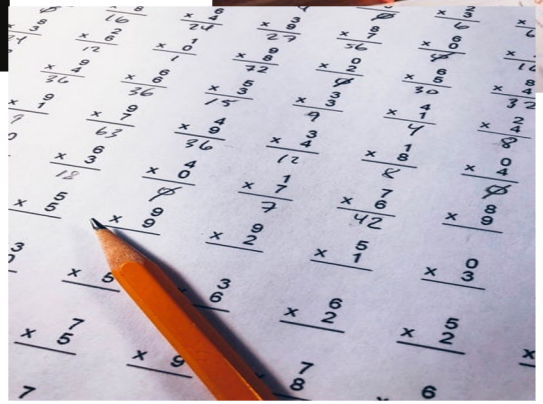
Being a Stress Detective

Cognitive Domain







The Cognitive Domain

- When stress is from our cognitive domain, we may have challenges with:
  - Focusing, and switching focus, as required
  - Considering perspectives other than our own
  - Planning and executing several steps in a row
  - Understanding cause and effect
  - Thinking logically
  - Recognizing patterns (math & reading)

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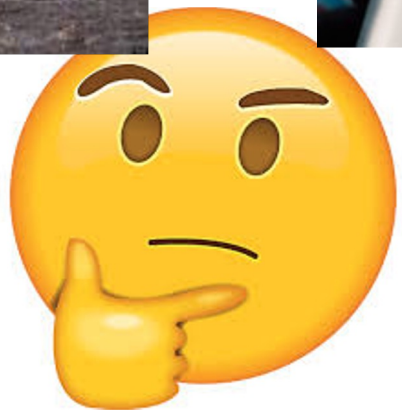
Being a Stress Detective

Social Domain



The Social Domain

- When stress is from our social domain, we may have challenges with:
  - Understanding our own feelings and intentions
  - Understanding the feelings and intentions of others
  - Responding to the feelings and intentions of others appropriately
    - Verbally and nonverbally
  - Monitoring the effects of our own responses on others
  - Communicating effectively
    - As listener and speaker
  - Demonstrating a good sense of humor that does not rely on ridicule
  - Recovering from and repairing breakdowns in interactions with others

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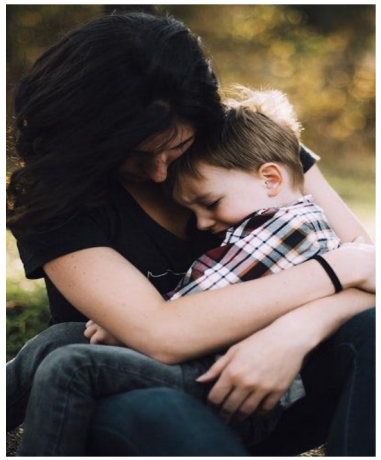
Being a Stress Detective

Pro-Social Domain

"It is the hardest thing in the world to go on being aware of someone else's pain."

-Pat Barker



The Prosocial Domain

- When stress is from our pro-social domain, we may have challenges with:
  - Empathy → caring about others' feelings and helping them deal with their emotions
  - Putting the needs and interests of others ahead of one's own

Dr. Susan Hopkins, Self-Reg/MEHRIT Center

"Empathy is an expensive emotion."

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Stress comes from many places and adds up!

- Remember, stress can come from any of these domains: the
  - Biological domain (feeling tired or being overwhelmed by sensory stimuli)
  - Emotional domain (having big emotions or being around others with big emotions)
  - Cognitive domain (tasks or activities that are unfamiliar or challenging).
  - Social domain (difficulty understanding one's own feelings and interacting with others)
- A person's sensitivity to any single stressor is variable and strongly influenced by his or her overall stress level.

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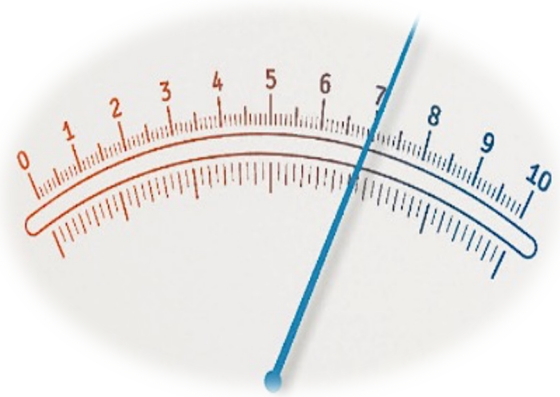
The 5 Steps of Self-Reg™

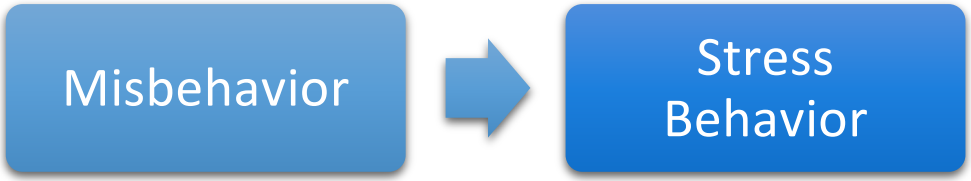
1. Reframe
2. Recognize the Stressors
3. Reduce the Stress
4. Reflect
5. Respond



Reframe the Behavior

Reframing your perception of your and a child's behavior

Shift your lens from…



- This helps you to be better able to pause and reflect rather than react automatically
- We are striving to understand, not manage behavior, so that we can work to change what is causing the behavior…the sources of stress.

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“See a child differently, you see a different child.”

-Stuart Shanker

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Co-regulation

- **It is only by being regulated that the child develops the capacity to self regulate**
- Adults around children need to be regulated themselves
- ***Calm yourself first***

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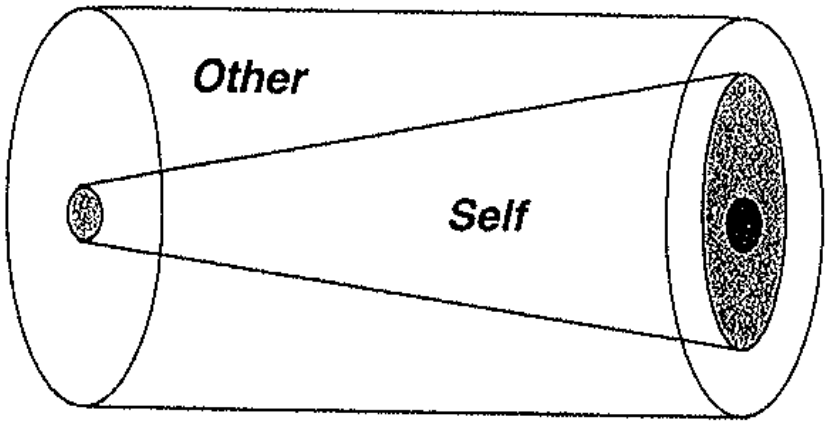
Samaroff (2004)
Co-regulation to Self-Regulation

- Your regulatory state changes the regulatory state of the other, and the other's state, changes yours!
- Over time, through these repeated relationship experiences, the capacity for "self-regulation" grows and becomes internalized.
- BUT
- When stress becomes unmanageable, we still need others to help us become regulated!



The Changing balance between other-regulation and self-regulation as a child develops into an adult

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Self-Regulation and Self-Control

- What is the difference between self-regulation and self-control?

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Self-Regulation and Self-Control

- **Self-regulation is governed by the hypothalamus.**
- *The hypothalamus is a brain structure at the base of the limbic area that regulates body functions in response to internal and external stimuli*
- **Self-control taps into the prefrontal cortex.**
- *The prefrontal cortex is a part of the brain that dominates the frontal lobe; executive functioning, planning complex cognitive behavior, personality expression, decision making and moderating correct social behavior.*

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When does our capacity for empathy become more difficult?

- When all is well, empathy may come easy.

But

- ***What happens when there is danger, crisis, violence, fear, overwhelming experiences – when WE AS THE ADULTS struggle?***

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French dad and son – 11/15 Paris Attacks

https://www.youtube.com/watch?v=xkM-SDNoI_8

Aces:
Adverse Childhood Experiences

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ADVERSE CHILDHOOD EXPERIENCES STUDY (ACES)

- Study conducted between 1995-1997, published in 1998 by Kaiser Permanente and the Centers for Disease Control (CDC)
- Baseline data collected 1995-97 and followed for 15+ years
- Original study used over 17,000 participants (mostly white 75%, middleclass, college-educated 74%, women 54%)
- Examined effects of trauma, stress, and risk factors during childhood on later adult health
- Retrospective report about 10 adverse childhood experiences

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ABUSE

Physical

Emotional

Sexual

NEGLECT

Physical

Emotional

HOUSEHOLD DYSFUNCTION

Mental Illness

Incarcerated Relative

Mother treated violently

Substance Abuse

Divorce

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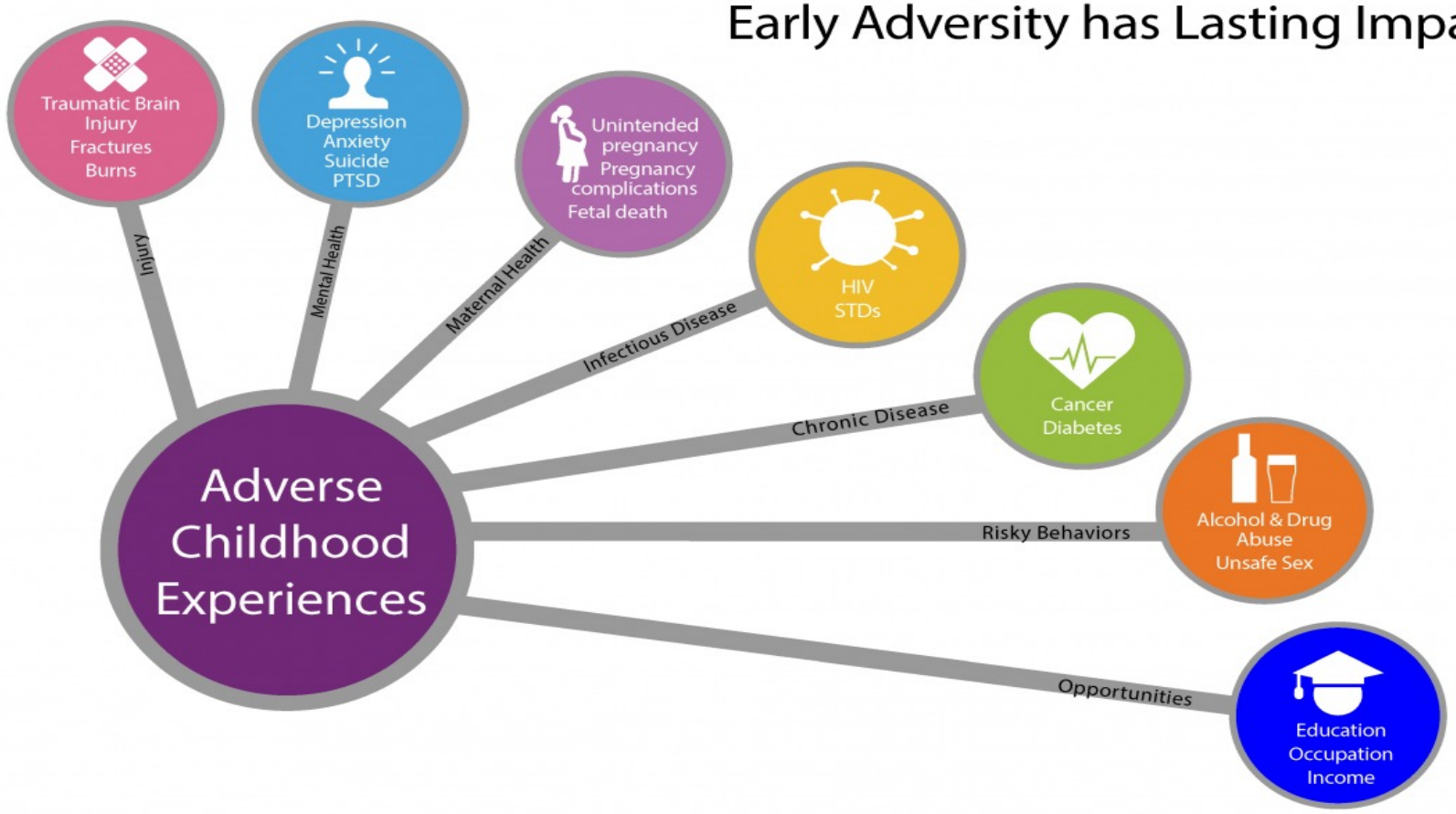
Early Adversity has Lasting Impacts



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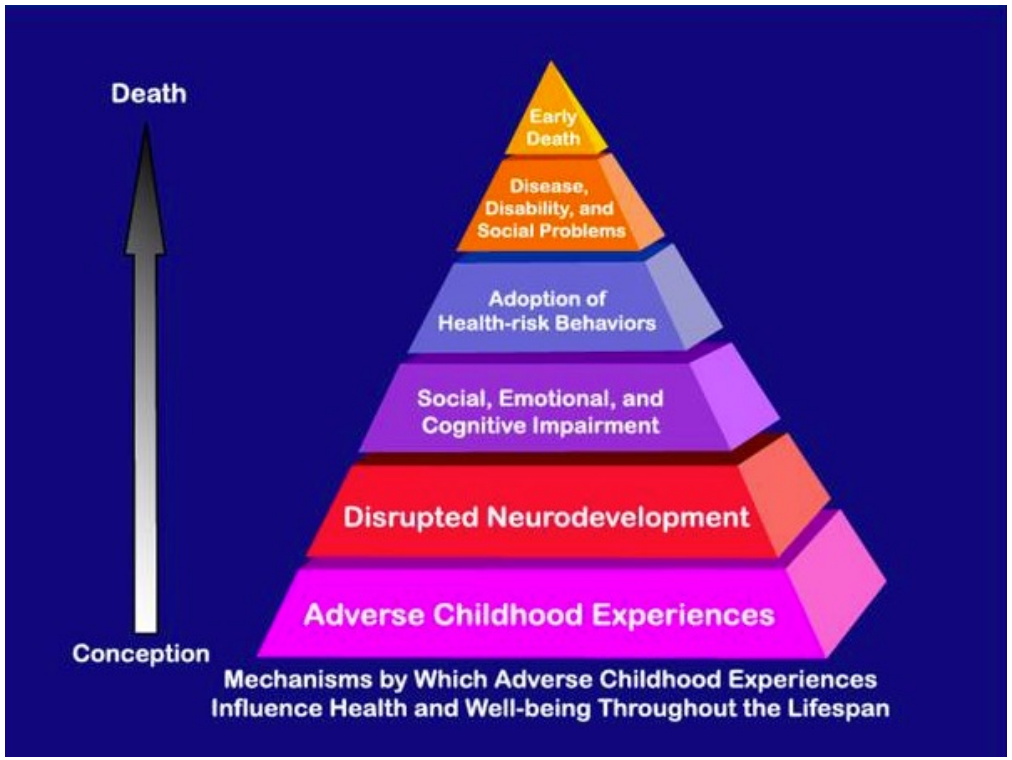
ADVERSE CHILDHOOD EXPERIENCES STUDIES



Traumatic and stressful childhood experiences can build up and have a negative impact on an individual's wellbeing throughout their life, including early death, chronic illness, physical conditions, mental illness, substance abuse, etc.

That is why prevention is so important

- Awareness
- Support systems
- Co-regulation

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Prevalence of ACES

- Almost half of children in the US have experienced at least one ACE.
- The most cited aces are economic hardship and divorce or separation of a parent or guardian
- Black non-hispanic children experience aces at a rate 20% higher than white children.
- Hispanic children experience aces at a rate 10% higher than white children.
- The prevalence of aces is lowest among Asian non-hispanic children.

(Sacks & Murphey, 2018)

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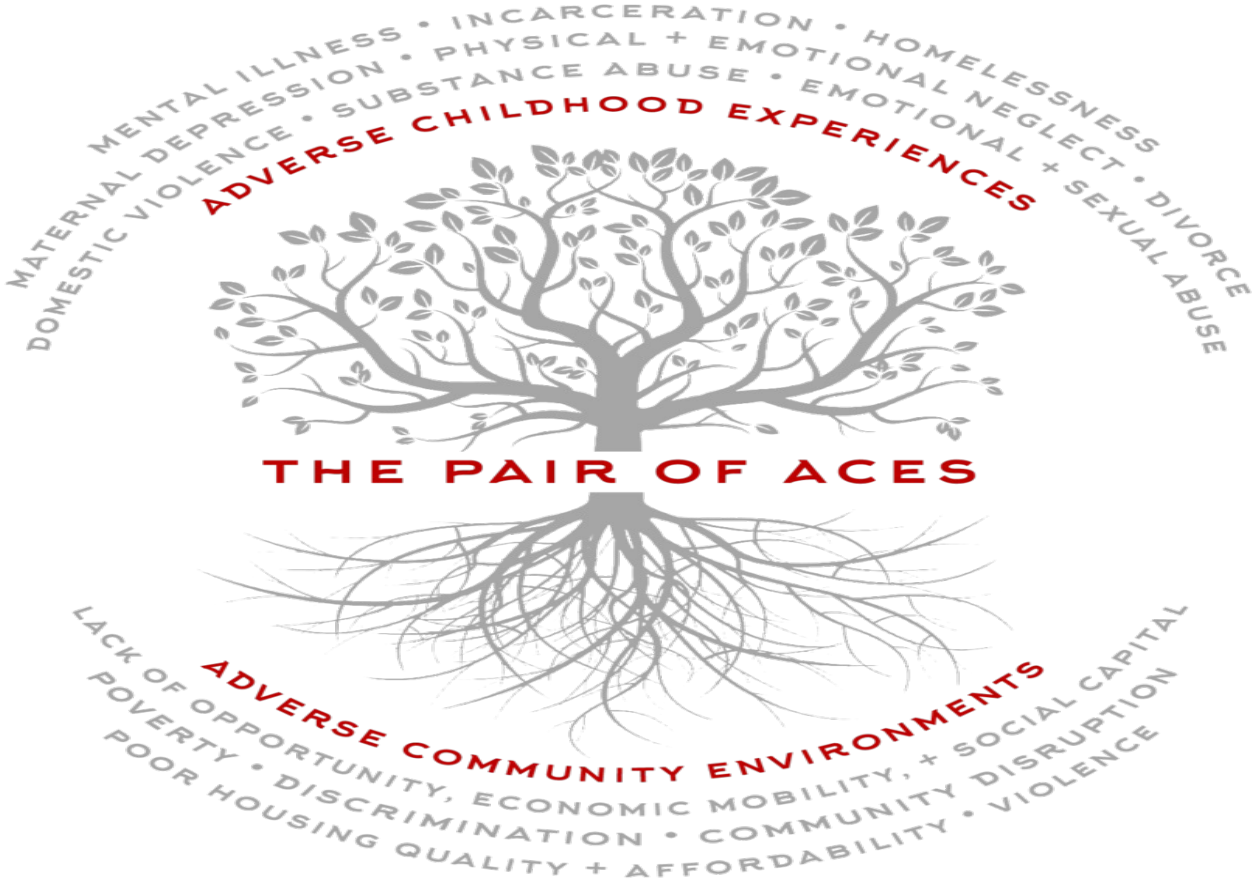
ADVERSE CHILDHOOD EXPERIENCES
MENTAL ILLNESS • INCARCERATION • HOMELESSNESS
MATERNAL DEPRESSION • PHYSICAL + EMOTIONAL NEGLECT • DIVORCE
DOMESTIC VIOLENCE • SUBSTANCE ABUSE • EMOTIONAL + SEXUAL ABUSE
THE PAIR OF ACES
ADVERSE COMMUNITY ENVIRONMENTS
LACK OF OPPORTUNITY, ECONOMIC MOBILITY, + SOCIAL CAPITAL
POVERTY • DISCRIMINATION • COMMUNITY DISRUPTION
POOR HOUSING QUALITY + AFFORDABILITY • VIOLENCE

3 Realms of ACEs

Adverse childhood and community experiences (ACEs) can occur in the household, the community, or in the environment and cause toxic stress. Left unaddressed, toxic stress from ACEs harms children and families, organizations, systems and communities, and reduces the ability of individuals and entities to respond to stressful events with resiliency. Research has shown that there are many ways to reduce and heal from toxic stress and build healthy, caring communities.

Thanks to **Building Community Resilience Collaborative and Networks** and the **International Transformational Resilience Coalition** for inspiration and guidance.
Please visit **ACEsConnection.com** to learn more about the science of ACEs and join the movement to prevent ACEs, heal trauma and build resilience.

ACEs Connection

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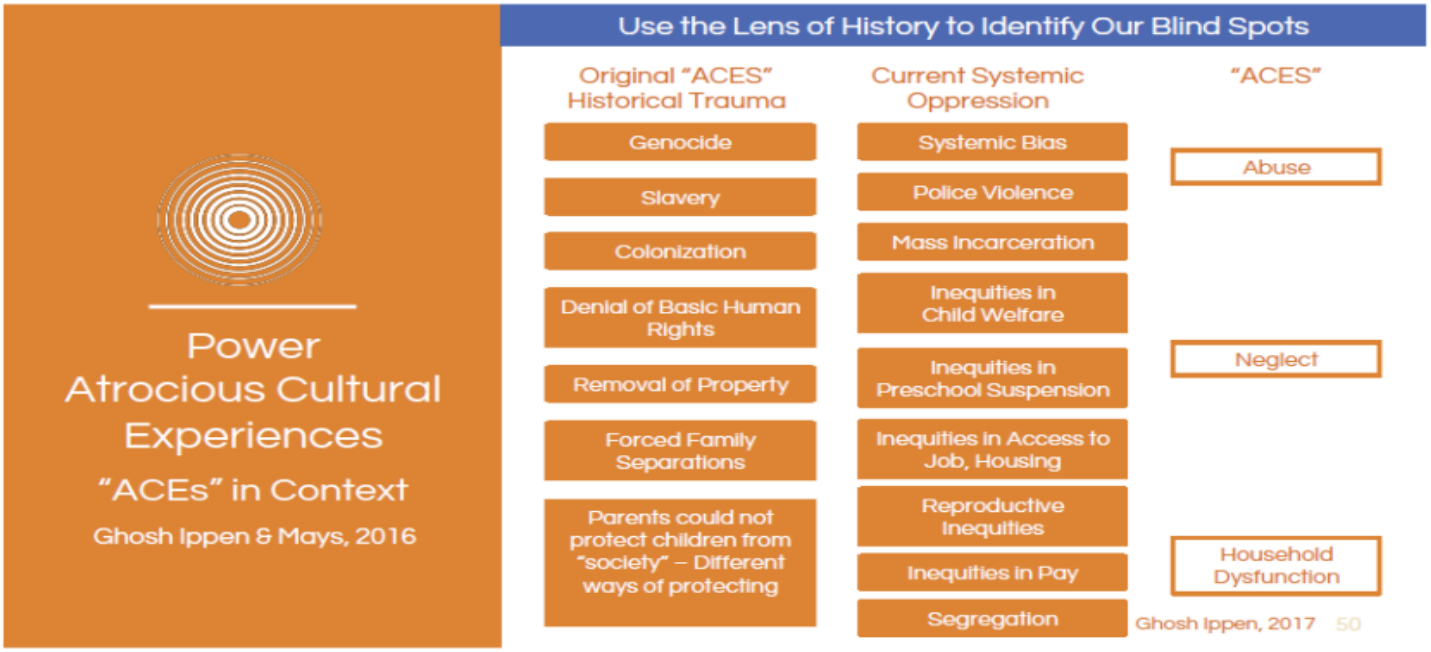

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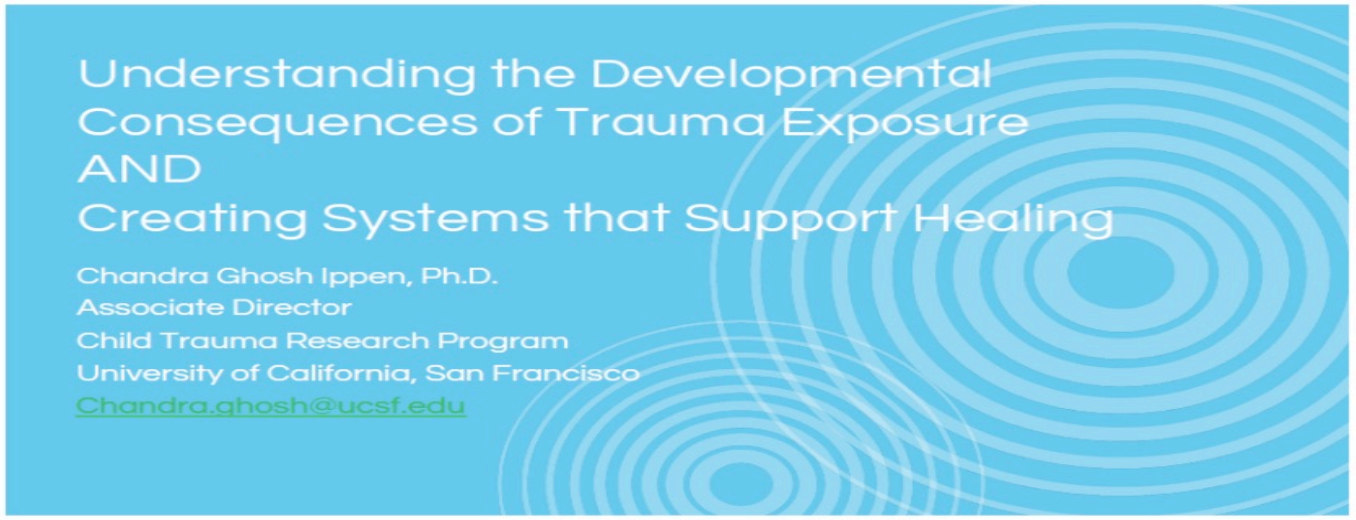
Thanks to Chandra Ghosh Ippen, Ph.D.



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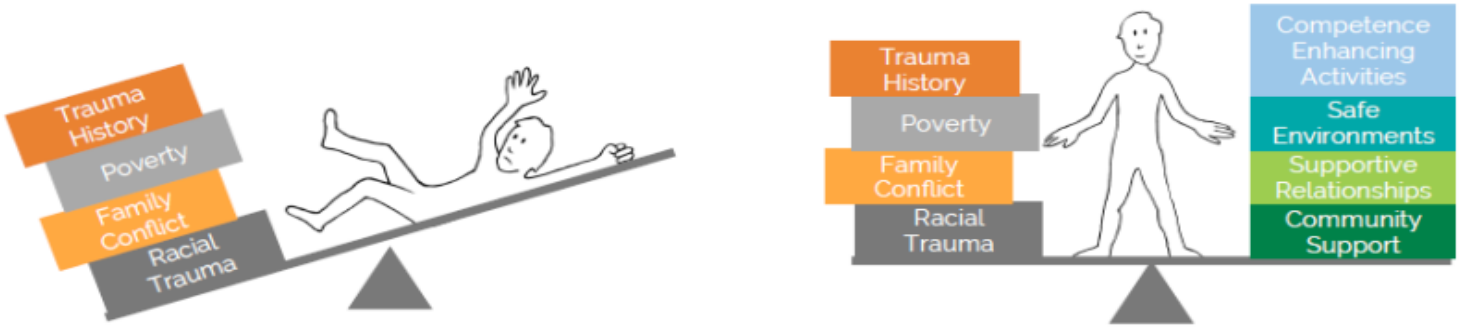
Benevolent Childhood Experiences (BCEs)

Gabriel

- Loving caregivers – services for dad
- Strong extended family
- Religious values
- Supportive preschool
- Sports – body-based activities
- Trauma-informed services in the community
- Support in the kindergarten transition

Positive Experiences Matter



Gerard Costa, Ph.D. - 2024

Imagining the world through the eyes of the child.

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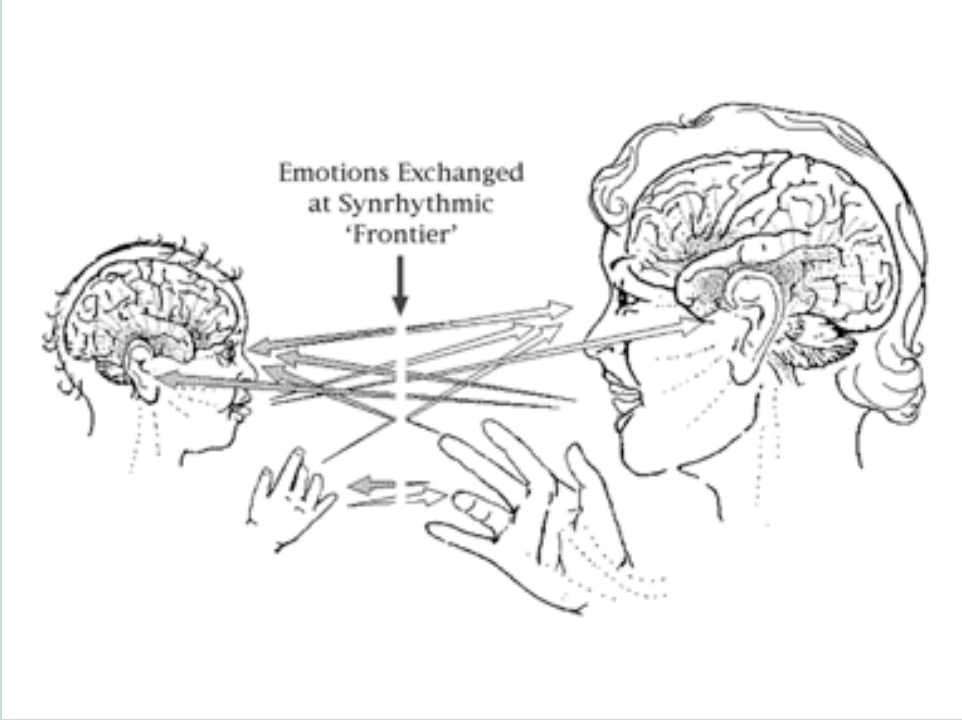
Emotions Exchanged
at Synrhythmic
'Frontier'

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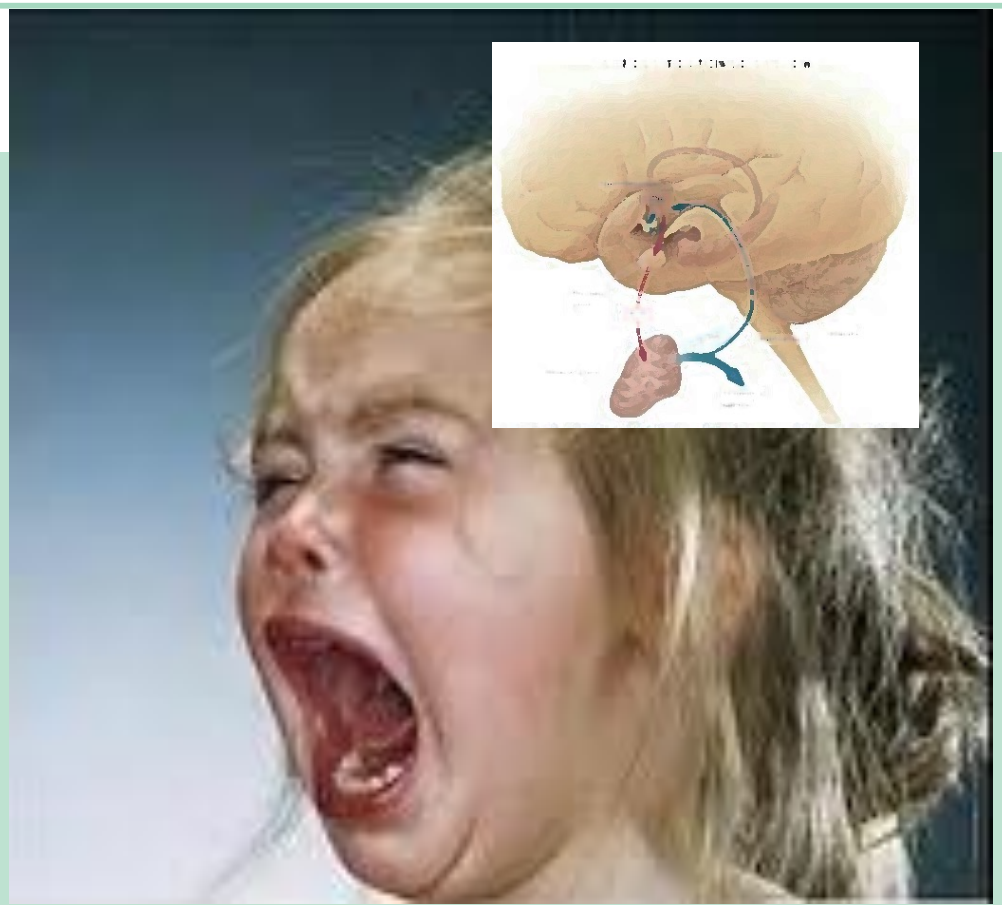
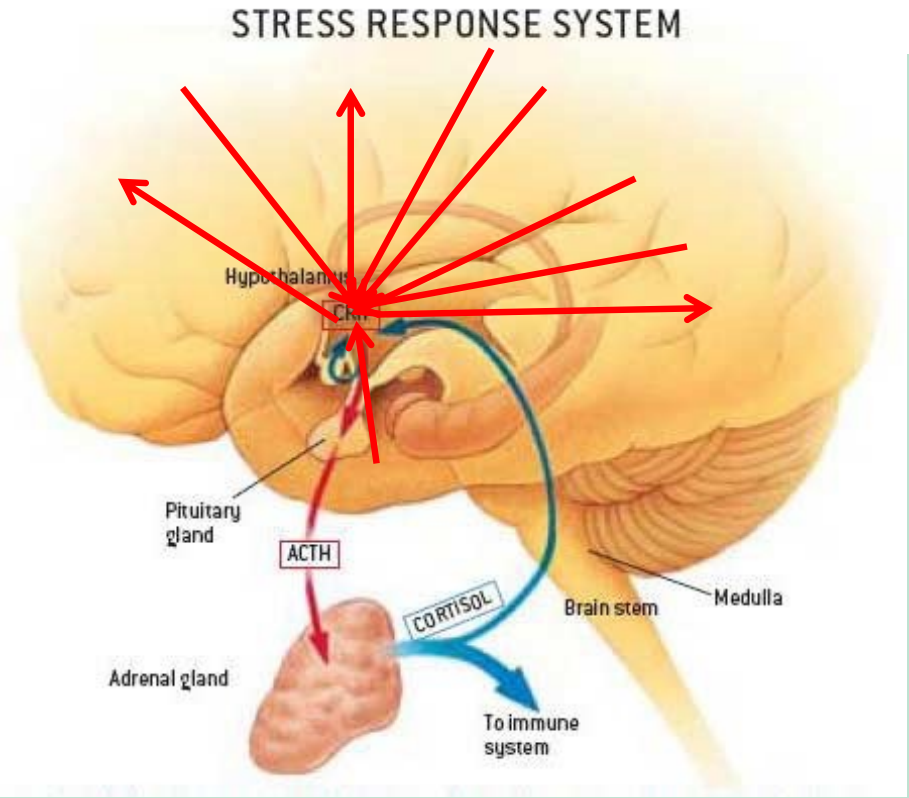
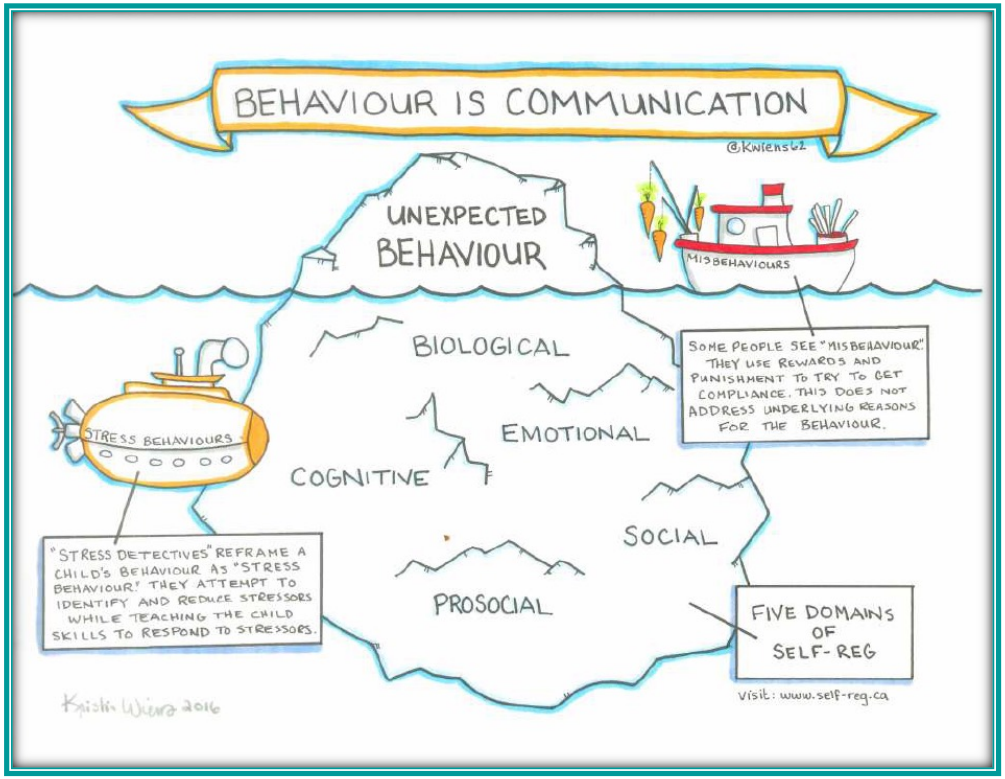



STRESS RESPONSE SYSTEM
Hypothalamus
CRH
Pituitary gland
ACTH
CORTISOL
Brain stem
Medulla
Adrenal gland
To immune system

Impact on child.....

- Child internalizes a core of negative affect, distrusts the caregiver and his/her own actions as effective.
- Child less interactive with people and objects
- Gender effects: boys receive more negative affect and appear to need more regulatory input

Seeking Relief from Stressors Through Relationship



from The Mehrit Center:
https://self-reg.ca/resource-library/

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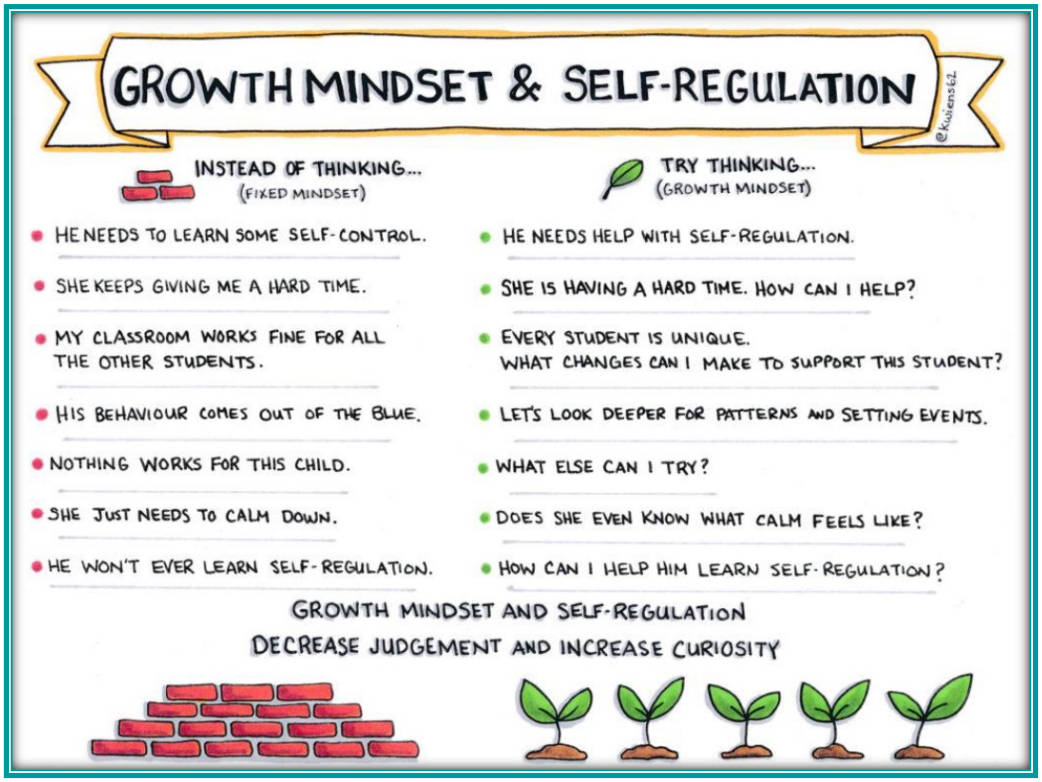
Reducing Stress Through Relationship



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REMEMBER!


CO-REGULATE
A Affect expression
G Gesture movements
I Intonation voice
L Latency pacing
E Engagement
LEND YOUR CALM.
Gerard Costa, Ph.D., 2018

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Thank you!

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