



Fundamental Trauma Principles

October 23, 2023

Goals

Today we will inspire you to become a life-long student of trauma as we provide information on:

- Why this information is important
- LGI Iceberg | LGI Trauma Iceberg
- Brain basics
- ACEs research
- Trauma
- Perry's 3 R's
- Co-regulation
- Reasons for hope



Why this information is important

- There is clear evidence that trauma plays a major role in the physical and mental health of people of all ages, cultures, races, socio-economic status.
- Having a better understanding of trauma and its impact can increase compassion and improve the quality-of-care professionals provide to clients.
- *"Scientists are calling the correlation between childhood trauma, brain architecture and adult well-being the new psychological 'theory of everything.'"* (Donna Jackson Jakazawa)

Predictions, Acknowledgment and Disclaimers (PADs)

- Trauma is a complex subject.
- There is no one right way to approach a study in trauma.
- Participants may wish more information could be included.
- Some information may be a review.
- Participants may be frustrated with time constraints.
- Some participants have their own trauma-related needs.
- We cannot meet all the needs participants may have in becoming more trauma-informed.

Personal Self-Care Plan

A Self-Care Plan is a list of simple external and internal activities that a person can choose to use when feeling triggered or overwhelmed.

There is no universal self-care plan. Each person needs to consider what contributes to feeling safe.

- Internal self-care plans are plans that focus on what a person can do mentally to remain calm.
- External self-care plans are plans that focus on what a person can physically do.

Please make a mental note or write down a personal self-care plan as it may be helpful during this presentation.

Reflection

- Bring someone to mind that you know or suspect has experienced significant trauma
- Think about what you have observed in this individual:
 - Typical behaviors
 - Challenges
 - Concerns
- Write down the person's name and throughout the workshop note ways you can relate the information presented to this individual.

Iceberg Analogy

Real power is
below the surface
where emotional
and relational
health lies
unseen.

Outward Behavior
(the part you can see)

Emotional Health
*(self-esteem, moral character,
self confidence, self image)*

Relational Health
*(love, fairness,
trust &
trustworthiness,
power)*

The strength of
the layers under
the water
determines the
real strength of
the iceberg.

Trauma Iceberg

Outward Behaviors

Dissociative
Unpredictable Social Behaviors
Hyper-Aroused
Reenactments

Hyper-Aggressive
Lack of Concentration

Emotional Health

Associations
Sensations
Emotions
Flashbacks

Hopelessness
Lack of Power
Self-Regulation

Generalizations
Unresolved Grief
Triggers

Attachment
Fear
Shame

Relational Health

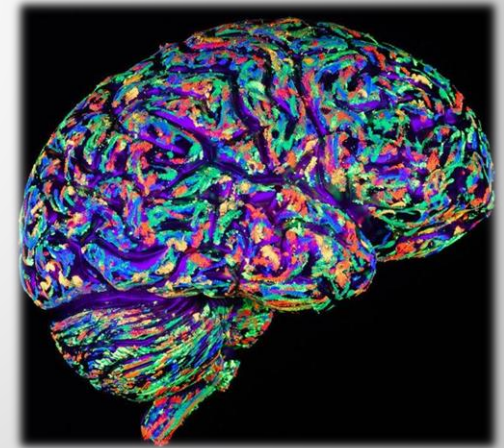
Safety
Attachment
Openness

Connection
Security
Trust

Fairness
Ethical Dimension of Relationships

Key Brain Basics

- The human brain consists of about 80-100 billion neurons.
- Each neuron forms about 1,000 connections.
- The total number of connections is 10,000 trillion.
- The brain is use-dependent. The way it is used determines how it grows. Experience becomes biology.
- There is a direct connection between a child's healthy attachment to significant others and the health of the wiring processes.
- The brain is malleable and some parts are more malleable than others.



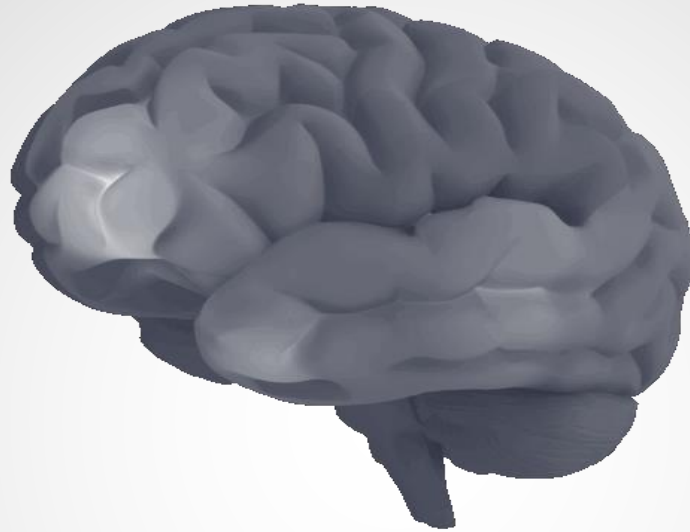
Source: Dr. Bruce Perry • April 20, 2015



Brain Facts

- Multiplying 100 billion neurons [brain cells] times 40,000 synapses [connections in the spaces between neurons] is equivalent to the **brain** having more **connections** in it than there are **stars in the universe**.
- A piece of **brain** tissue the size of a grain of sand contains 100,000 neurons and 1 billion synapses, all communicating with one another.

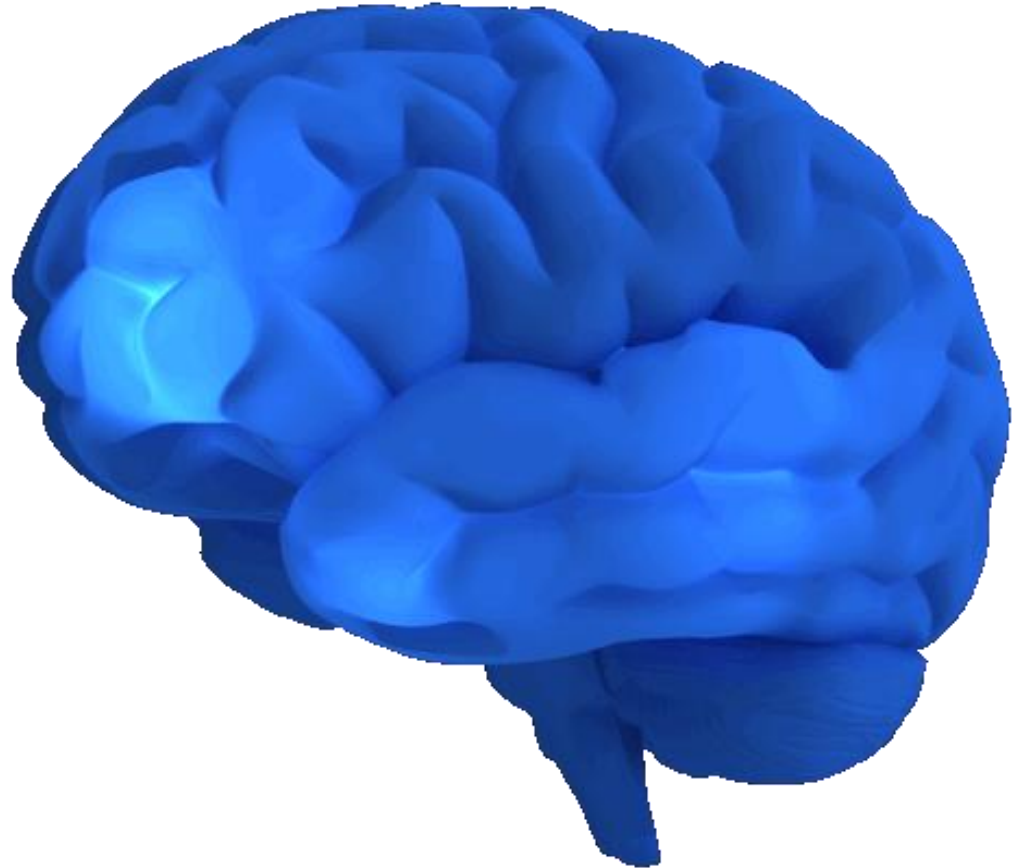
Neurons: How They Work



- How many neurons (brain cells) are there in the human brain?
- How many neurons would fit on the head of a pin?
- How many connections can each neuron make?
- How thick is the cortex?
- What percentage of neurons is in the cortex?

Take a Guess

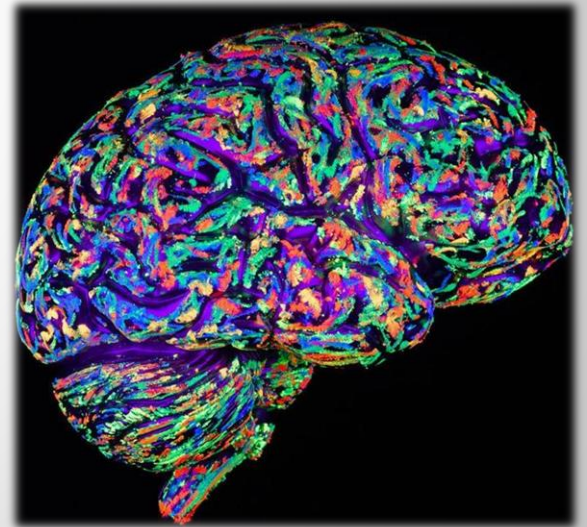
- How many electrical “conversations” – interactions – among neurons are there in your brain every minute?

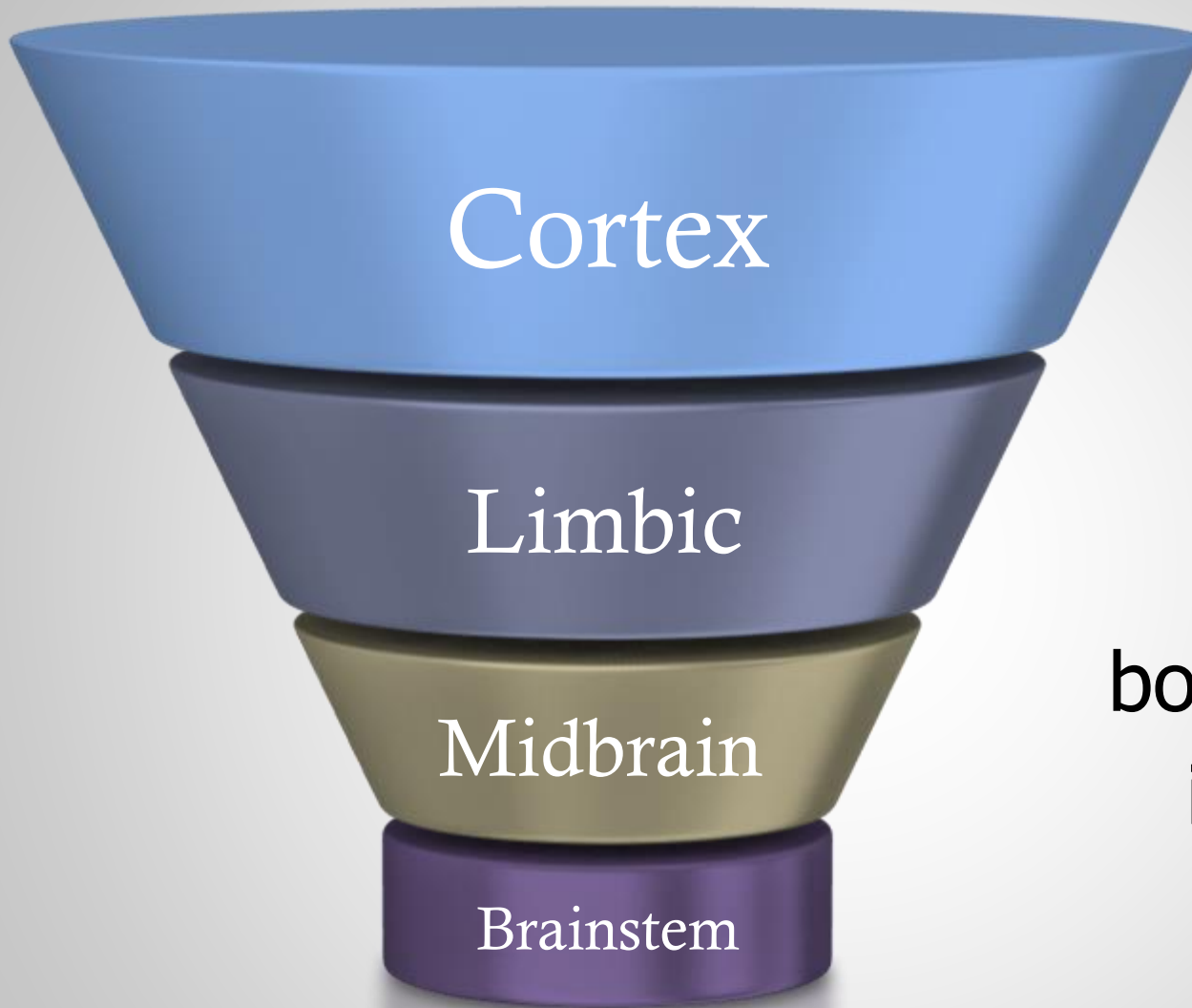


The Answer

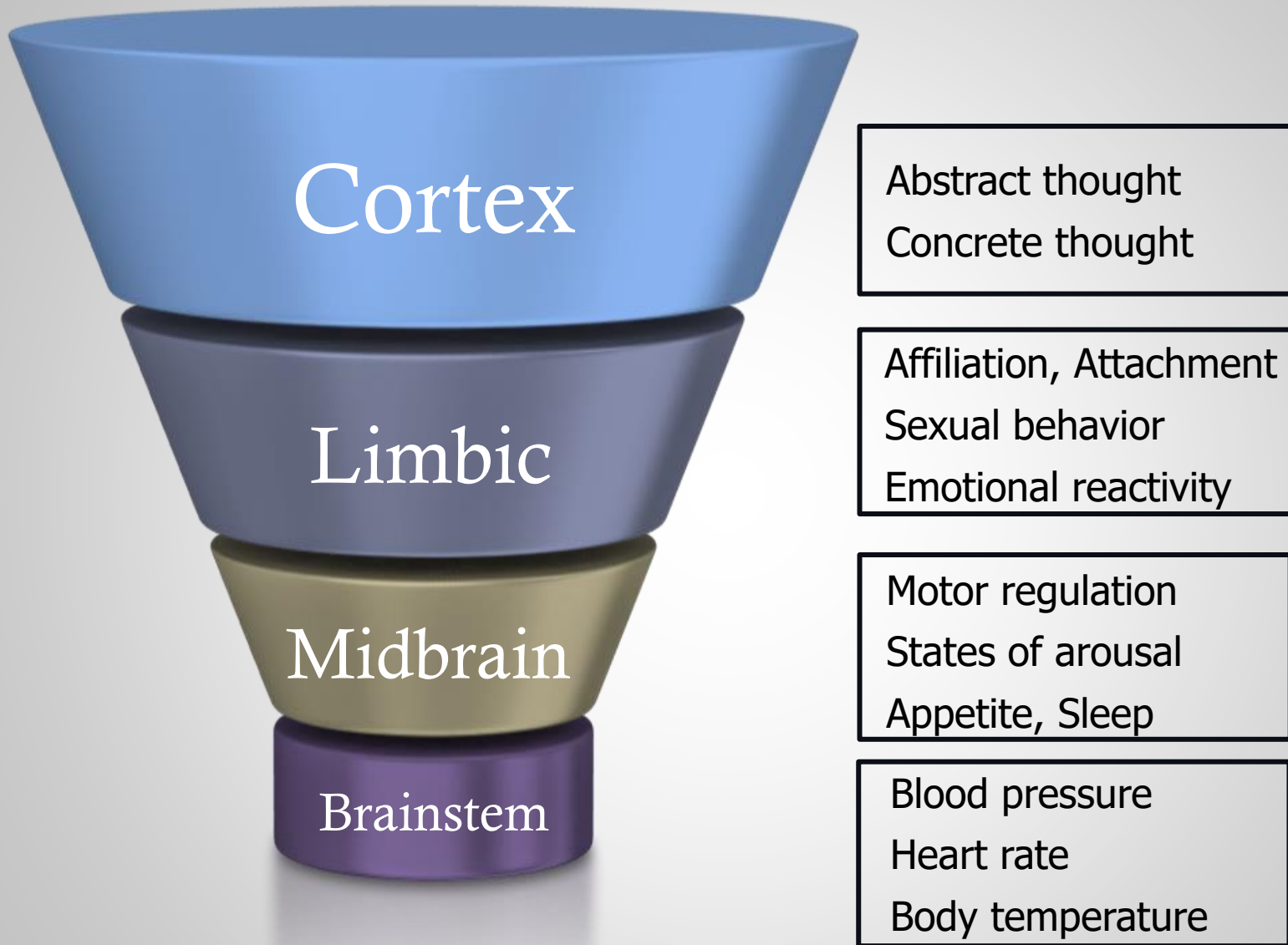
- 2.5 quadrillion neuronal/brain cell interactions (electrical conversations) per minute.

Source: Dr. Bruce Perry • April 20, 2015



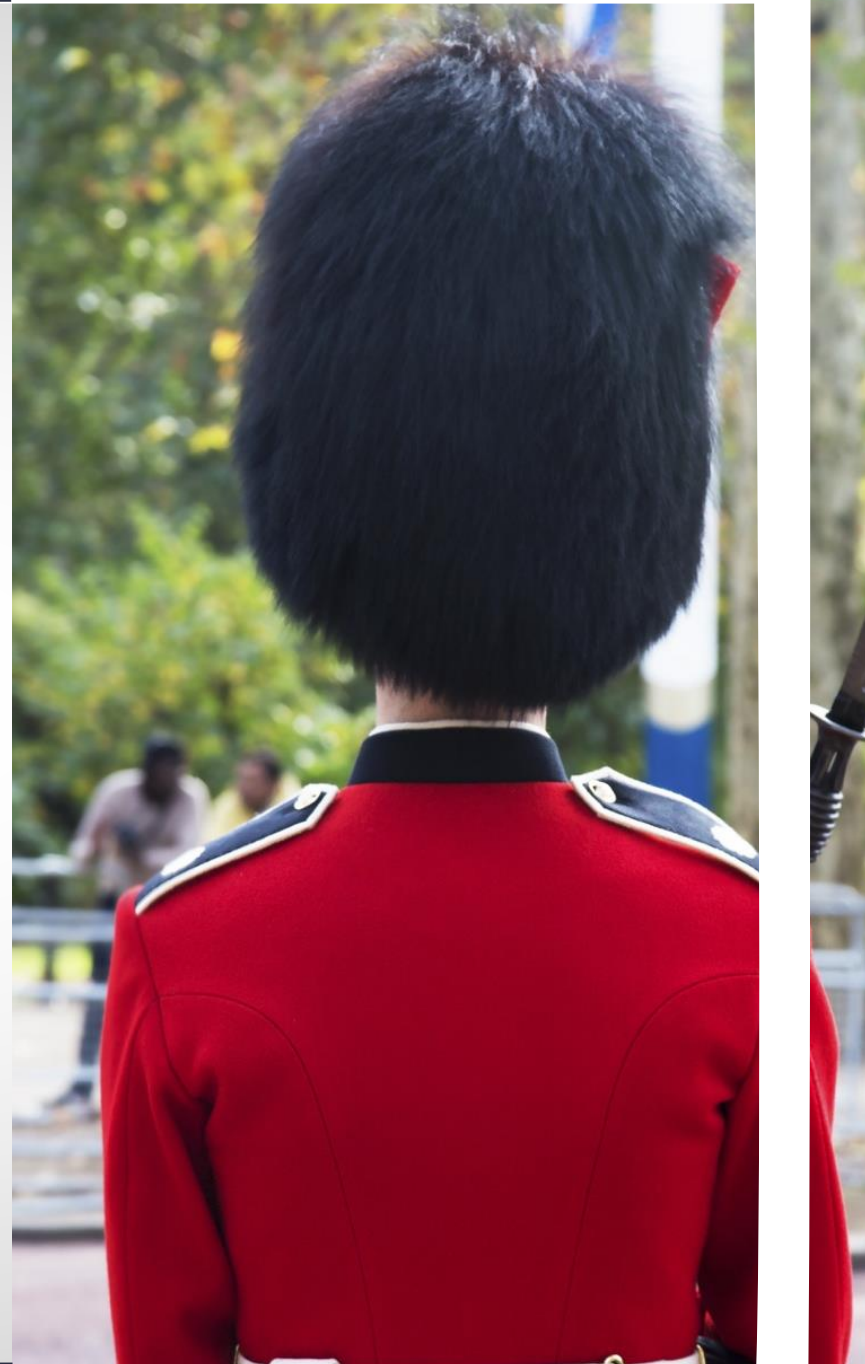


The brain develops from the bottom up and inside out.



AMYGDALA

- Small almond-sized structure
- Part of the limbic system
- Acts as smoke detector, sentry and router
- All incoming data received by the brainstem alerts the amygdala to instantaneously override upper brain function
- “The amygdala has emerged as the key brain region in the processing, interpreting and integration of emotional functioning.” (Dr. Bruce Perry)



A Short Story

Can you remember the name of the animal?

Can you remember where the animal goes?





HIPPOCAMPUS

- Like a computer chip, it stores images and facts so that when something happens it triggers the memories it has stored
- Encodes environmental context
- Transfers information into memory and stores memory
- Amygdala and hippocampus communicate with each other

Brain States	Brain Part	Thinking	Sense of Time
Calm	Prefrontal Cortex	Abstract/ Creative	Future
Aroused	Subcortex	Concrete	Week/Day
Alarmed	Limbic	Emotional	Hours/ Minutes
Fearful	Midbrain	Reactive	Minutes/ Seconds
Terror	Brainstem	Reflexive	Loss of Sense of Time

Brain Area & States Exercise

- Consider in which brain area and brain state each baby or child might be.
- Also consider how each child's brain might be functioning if he or she has unresolved trauma.

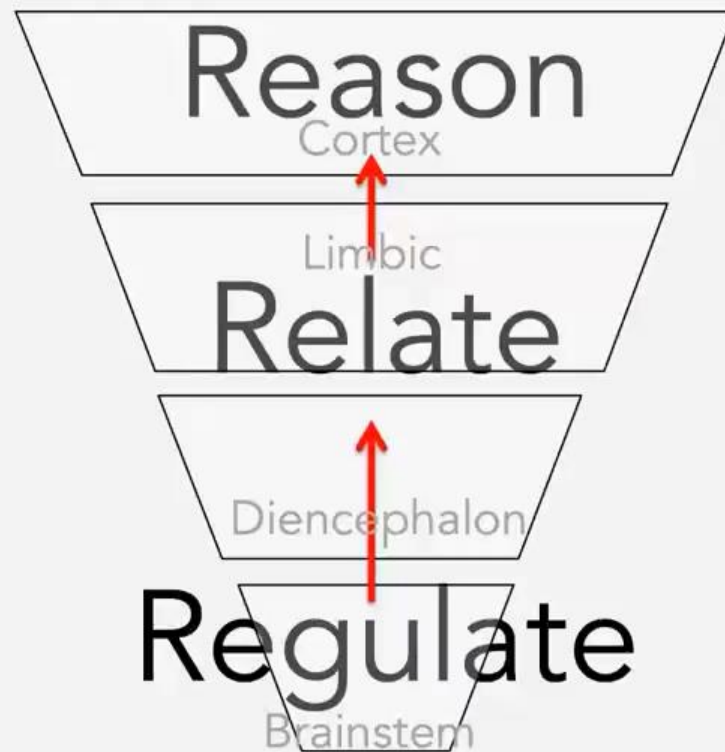






Dr. Bruce Perry: 3 R's

Sequence of Engagement





Regulation | Dysregulation

"Regulation is the ability to modify emotions and respond to situations with balance, calm, and control."

"Dysregulation happens when an individual doesn't feel safe. Their ability to function is compromised, and they cannot meet the demands of the external environment."

Source: Regulation and Co-Regulation: Accessible Neuroscience and Connection Strategies that Bring Calm into the Classroom by Ginger Healy, National Center for Youth Issues, 2023, p.6

Why Trauma- Impacted People Can Struggle with Breathing Exercises

“... traumatized people are terrified of what’s going on inside of them. Asking them to focus on their breath may precipitate a panic reaction; simply requesting that they keep still often only increases their agitation....”

[Bessel van der Kolk](#)

Co-Regulation

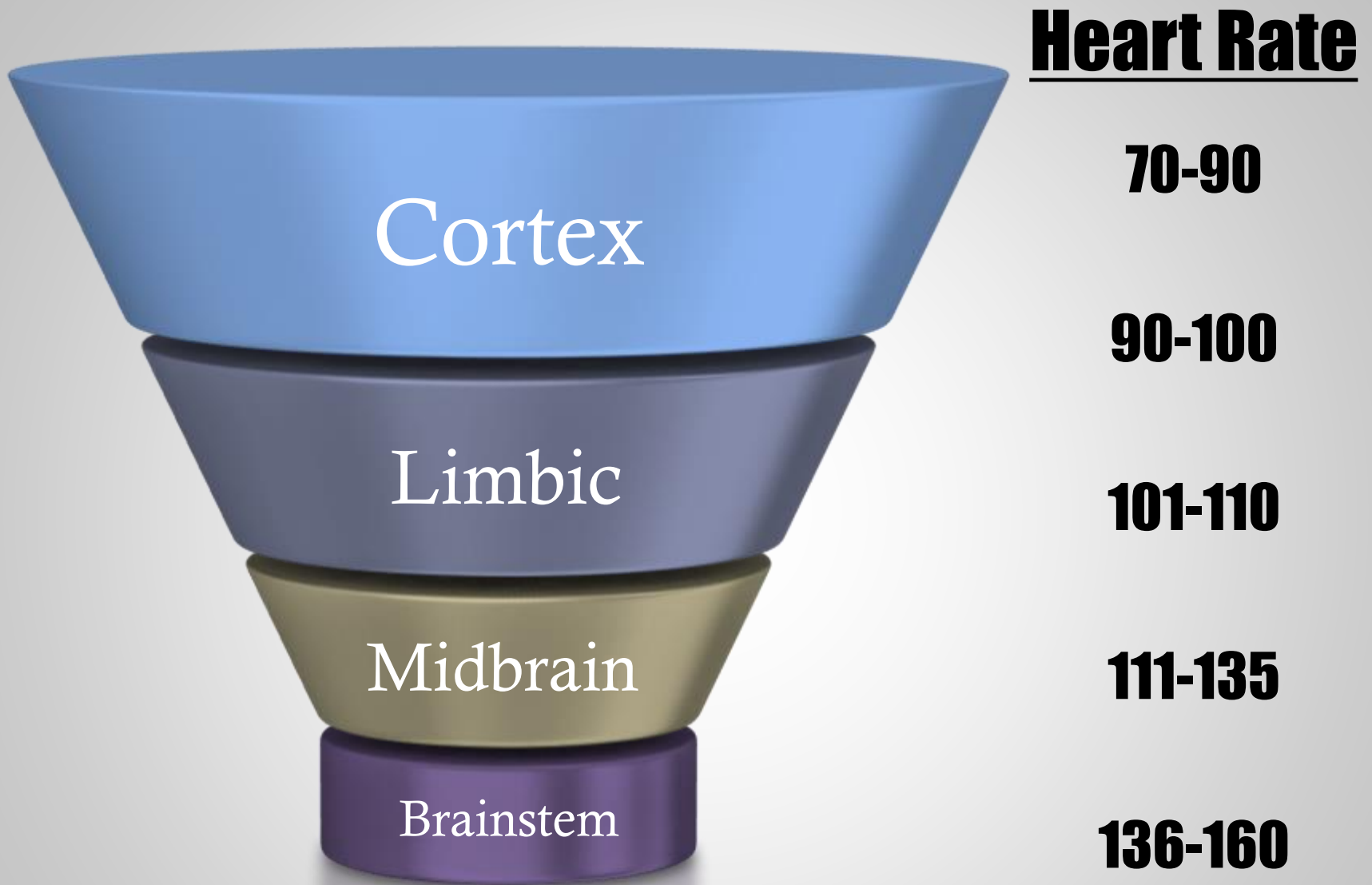
Co-regulation is when a child and a nurturing, reliable caregiver share a sense of safety and engage in warm and responsive interactions to learn how to soothe and manage distressing emotions.

The adult provides intentional modeling of the regulated state, and the child learn self-regulation.

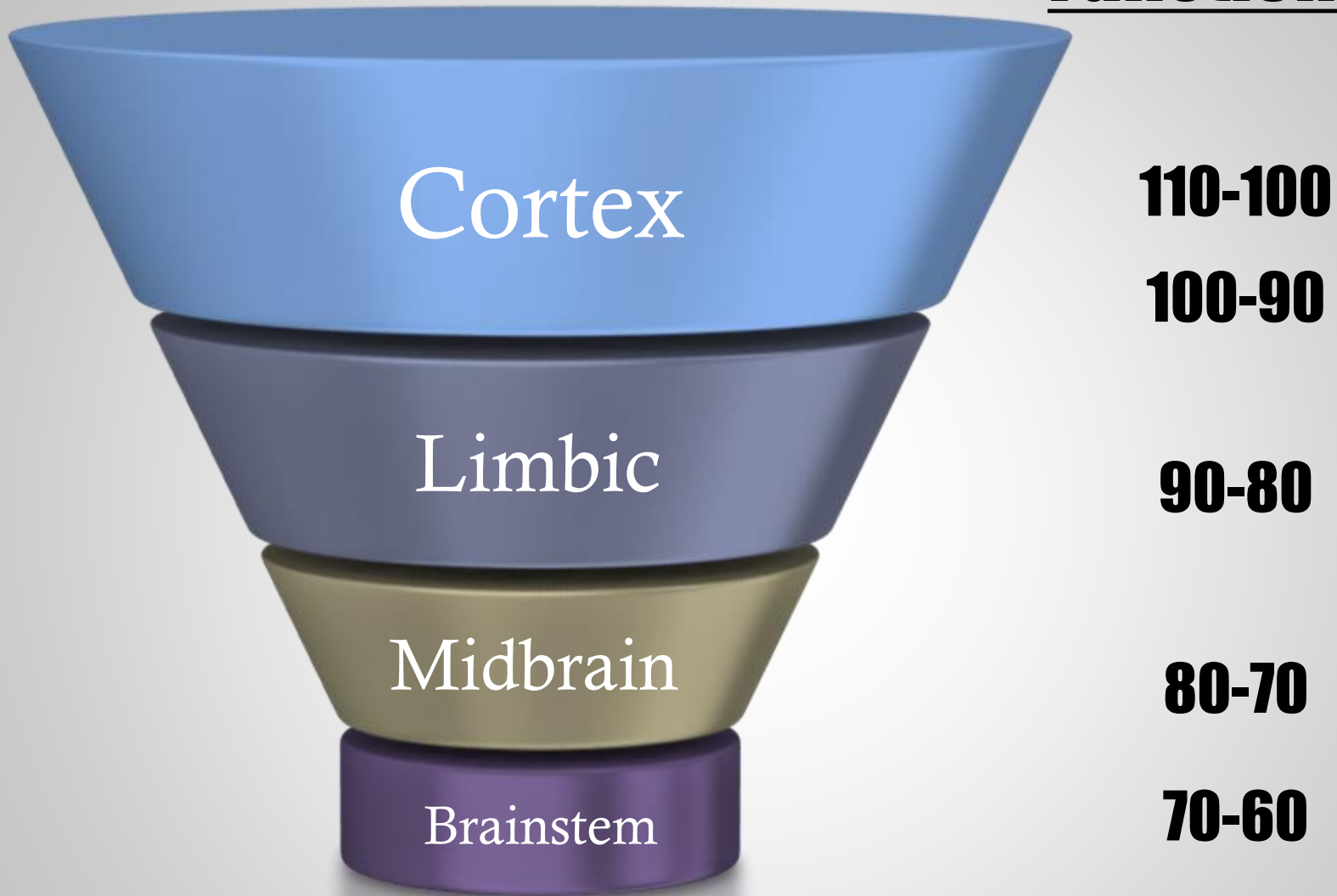
It helps the child understand their feelings, thoughts, and subsequent behavior.

Co-regulation is a dyad of attunement. Attunement is an intentional effort to connect and pay attention to what a child's verbal and nonverbal cues are telling us they need. When you meet that need, it gives the child a quick dose of felt safety.





Functional IQ



Reflection

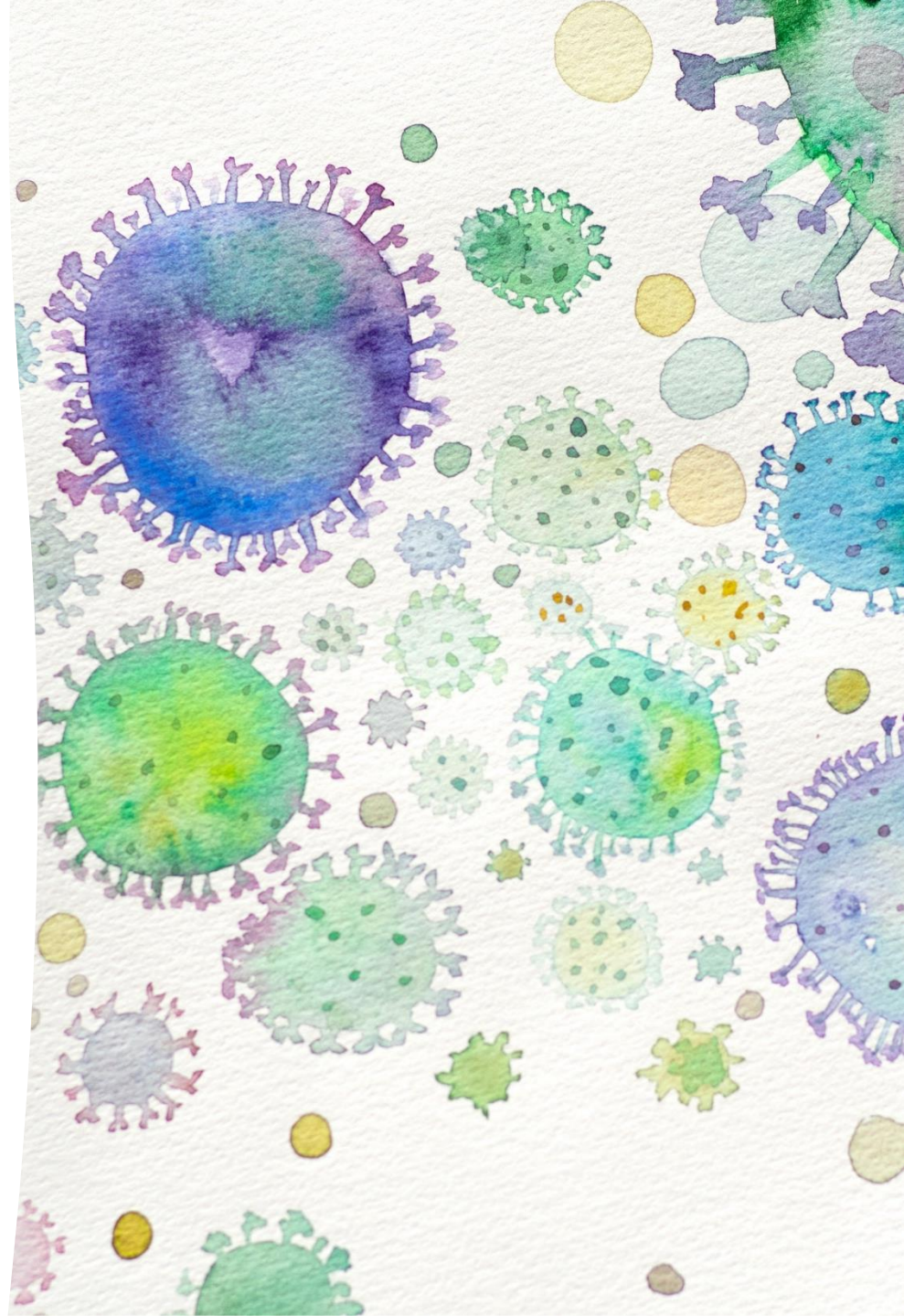
- Consider what brain state you might be in right now.
- Think about the person you identified earlier:
 - What behaviors do they exhibit that might indicate their brain state?
- How might you apply this knowledge about the brain to better understand this individual?

Have you.....

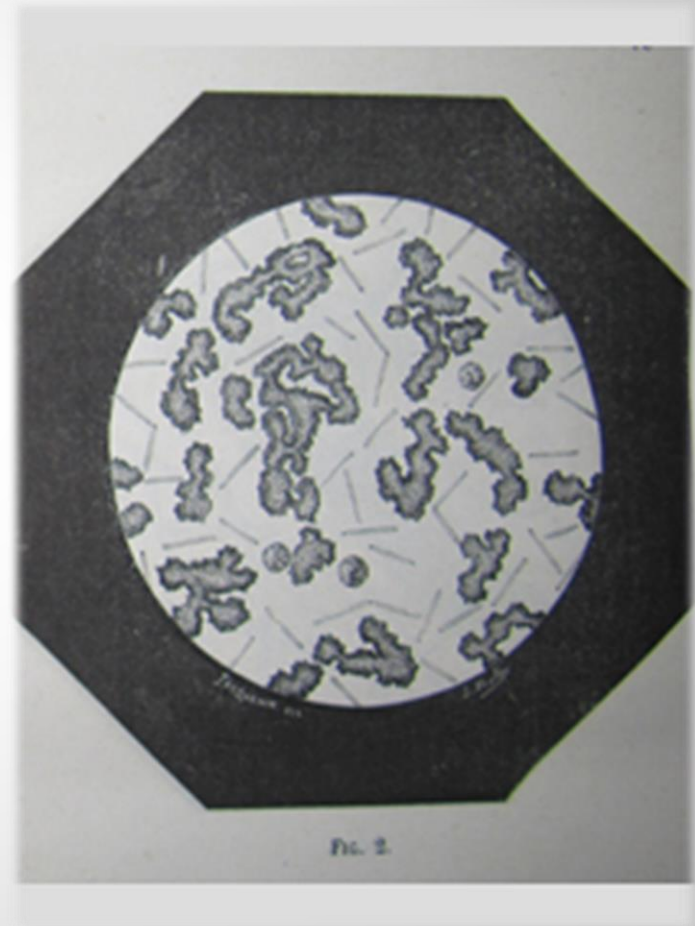
- Recently washed your hands?
- Had a flu shot?
- Used Neosporin?
- Taken an antibiotic?
- Had a medical procedure and were confident the instruments used had been sterilized?

- Why?

- How would you feel about becoming pregnant or having your significant other become pregnant, knowing she had a 50-50 chance of dying immediately after giving birth?



The Impact of Germ Theory



The Impact of Germ Theory

The impact of the information from neuroscience about the brain and the impact of trauma will be as significant as the impact of understanding germs. Both were revolutionary!



What is Trauma?

- An overriding emotional event involving deep distress, alarm, fear or terror
- “Neuro-electrical jolt”
- The event may be perceived as inescapable
- Sustained, toxic stress
- Powerful sensory memories are created which lead to a change in the neurological landscape through:

Fight
Flight
Freeze
Submit
Capitulation



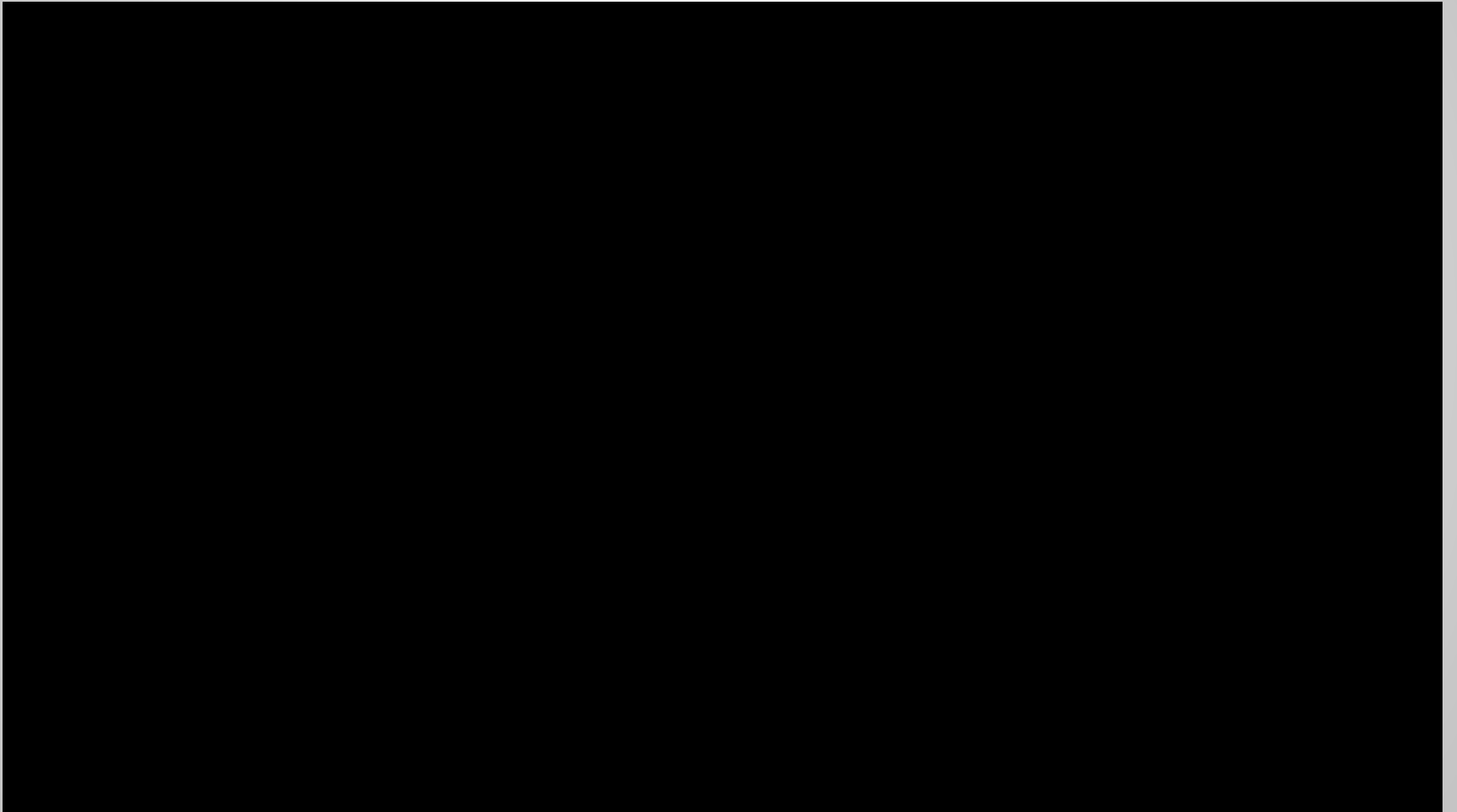
ACEs Research



How many of you know about the ACEs Research?

TedTalk presented by Nadine Burke Harris in 2022 for the Office of the Surgeon General. Dr. Burke Harris is a Canadian-American pediatrician who was the Surgeon General of California from 2019-2022. She is the first person appointed to that position. She is known for linking adverse childhood experiences and toxic stress with harmful effects to health later in life.

Dr. Nadine Burke-Harris



Kinds of Trauma

- Situational *OR* Relational
- Acute/Single Event
- Allostatic Load
- Attachment-Related Trauma
- Chronic Trauma
- Collective Trauma
- Complex unresolved grief
- Complex Trauma
- Chronic Toxic Stress
- Cultural/Political Trauma
- Developmental Trauma
- Immigration Trauma
- Transgenerational Trauma
- Community Traumas
- Medical Trauma
- Organizational Trauma
- Pandemic Trauma
- Racial Trauma
- Sexual Trauma
- War Trauma
- Vicarious Trauma
- Unprocessed Memories
- Adverse Childhood Experiences (ACEs)
- Occurred in the past vs currently being experienced

Principles of Trauma

- Everyone has different responses, depending on their history of trauma, support, degrees of resilience and temperament.
- The earlier in life trauma occurs, the greater its impact.
- Some trauma resolves on its own; some remains dormant until triggered.
- Post Traumatic Stress (PTS) – high degree of stress for several days or weeks after a significant trauma
- Post-Traumatic Stress Disorder (PTSD) – stress symptoms are present three months after event

Reflection

- Think about the person you identified earlier and consider how this information may relate to them or explain challenging behaviors.
- Notice your thoughts, feelings, sensations, and any memories that pop up for you.

Prevalence of Trauma

- Of 76 million children in the US, 46 million are exposed to violence, crime, abuse, and psychological trauma annually.
- That represents two out of every three children.



From Defending Childhood: The Attorney General's National Task Force on Children Exposed to Violence, December 2012

The Price of Trauma

ANNUAL COSTS ATTRIBUTABLE TO ACEs:
\$748 BILLION⁵

ADDRESSING AND PREVENTING ACEs COULD
**SAVE THE FEDERAL GOVERNMENT
\$217 BILLION PER YEAR⁶**
WHILE IMPROVING HEALTH AND WELLBEING **FOR US ALL**

Campaign for Trauma-Informed Policy & Practice
<https://traumacampaign.org/>

Designed and Prepared by Whitney L. Marris, as Supported by The Institute on Trauma and Trauma-Informed Care (2019)

1. Felitti et al. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *Am. J. Prev. Med.*, 14(4), 245-258.
2. Institute for Safe Families. (2013). *Findings from the Philadelphia Urban ACE Survey*. Retrieved from <https://tinyurl.com/PhilACEs>
3. Feuer-Edwards et al. (2016). *Trauma-Informed Philanthropy*. Retrieved from <https://tinyurl.com/TIphil>
4. Ellis, W. & Dietz, W. (2017). A new framework for addressing adverse childhood and community experiences: The building community resilience (BCR) model. *Academic Pediatrics*, 17(7S), S86-S93. doi: 10.1016/j.acap.2016.12.011
5. Bellis et al. (2019). Life course health consequences and associated annual costs of ACEs across Europe and N. America: A systematic review and meta-analysis. *Lancet Public Health*, 4(10), 517-528. doi: 10.1016/S2468-2667(19)30145-8
6. Based on Fed. Gov't covering 29% of healthcare expenditures, from source: Sisko, A. M., Keehan, S. P., Poisal, J. A., Cuckler, G. A., Smith, S. D., Madison, A. J., Rennie, K. E., & Hardesty, J. C. (2019). National health expenditure projections, 2018-27: Economic and demographic trends drive spending and enrollment growth. *Health Affairs*, 38(3), 491-501. doi: 10.1377/hlthaff.2018.05499

How Trauma Can Impact the Brain

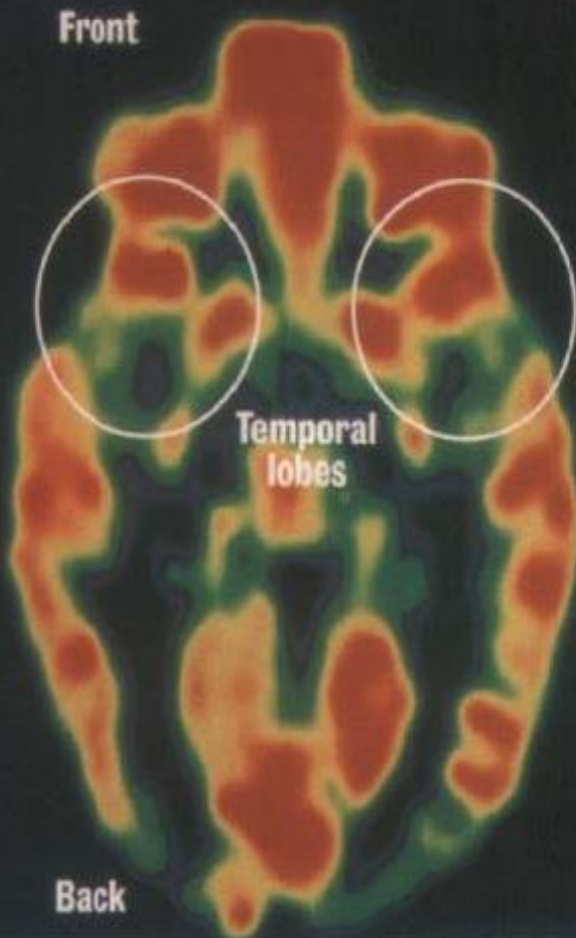
- Because of over-stimulation that leads to excess brain wiring, an infant or child who experiences chronic, complex trauma has greater density in his or her brainstem and mid-brain (Source: *Dr. Bruce Perry "Memories of Fear"*)
- Because the hippocampus shuts down during traumatic events and the amygdala stores the sensory memories without any sense of timing, the infant, child or adult cannot accurately remember or process traumatic memories or manage flashbacks.

How Trauma Can Impact the Brain

- Researchers estimate that 25% to more than 40% of children have been significantly impacted by trauma.
- In traumatized children there is less cortical modulation and in some traumatized children, a smaller cortical area.
- Children who experience trauma can become either dissociative or hyper-vigilant.
- The younger the child, the greater the impact and the more difficult it is to recover from trauma.
- Unresolved trauma can prevent an infant, child or adult from learning to regulate emotions and from being calm and focused enough to learn.

Healthy Brain

This PET scan of the brain of a normal child shows regions of high (red) and low (blue and black) activity. At birth, only primitive structures such as the brain stem (center) are fully functional; in regions like the temporal lobes (top), early childhood experiences wire the circuits.

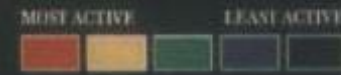


Front



An Abused Brain

This PET scan of the brain of a Romanian orphan, who was institutionalized shortly after birth, shows the effect of extreme deprivation in infancy. The temporal lobes (top), which regulate emotions and receive input from the senses, are nearly quiescent. Such children suffer emotional and cognitive problems.



CDC
CENTERS FOR DISEASE CONTROL
AND PREVENTION



**According to
Vincent J. Felletti
*Co-author of the
ACEs Study***

“Time does not heal all wounds. One does not ‘just get over something’— not even 50 years later. Instead, time conceals. In human beings convert traumatic emotional experiences in childhood into organic disease later in life.”



A Powerful Conclusion

Donna Nakazawa

“The child who faces Adverse Childhood Experiences will be more likely to develop depression, bipolar disorder, eating disorders, anxiety disorders, poor executive function in decision-making--many of which can lead to substance abuse. This may be why, statistically, so many young people first show signs of depression or bipolar disorders in high school, and in college--even kids who just a year or two earlier seemed absolutely fine.”



Trauma-Informed Care Framework

Systems & People Do Their PART

- **P**revention – building *protective factors*; parent education; afterschool programs; high quality early childhood education & beyond; arts; safe places to play outside; family sustaining jobs
- **A**void Triggers – being aware that the needs of a traumatized person involves creating *safety and connection*. Creating environments that promote regulation with activities that are calming to help kids access executive functioning
- **R**espond Appropriately when someone is triggered or becomes dis-regulated (*calm, attuned caregivers; personalized strategies*)
- **T**herapy – *evidenced-based intervention/therapy*; formal and informal; creating coherent narratives, receiving credit; giving back

Discover Reasons for HOPE





Hope

- Research is providing clearer information, provides scientific evidence of impact of trauma, violence, ACEs
- There are trauma-sensitive responses that can change outcomes for the better.
- The brain is capable of being changed

Hope



- The more trauma-aware, trauma-informed, trauma-sensitive and trauma-competent communities and the leadership within them are, the more there can be effective responses to those children, adults and families dealing with trauma-related issues and needs.
- And the more we can focus on prevention and helpful intervention/responses short and long term.
- There are a plethora of books, articles and websites, many workshops – the information is out there!

The Single Most Significant Component of Healing

...is experiencing healthy relationships.

According to Neurons to Neighborhoods: *"Human relationships, and the effects of relationships on relationships, are the building blocks of healthy development."*

"Relationships are the agents of change and the most powerful therapy is human love." (Dr. Bruce Perry)

"Healing takes place in the context of healthy relationships over time." (Diane Wagenhals)

Reframe

- Instead of asking, "*What's wrong with you?*"
- Trauma-informed people ask, "*What happened to you?*"

Joseph Foderaro
Psychoeducational Training Specialist
Drexel University College of Medicine



Resources

- **Lakeside Global Institute**
lakesideglobal.org
- **Diane's Blog**
www.dianewagenhals.com
- **Creating PRESENCE** (Dr. Sandra Bloom)
lauries@lakeside.net
- **PACEs Connection**
pacesconnection.com
- **Campaign for Trauma-Informed Policy and Practice (CTIPP)**
ctipp.org
- **Child Trauma Academy**
childtrauma.org