

The Science of Trauma and Healing

2022 North Dakota Pediatric Health Care Access
Monthly ECHO



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Neurobiology
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DISCLOSURE

Speakers have No Commercial Interests and
No Conflicts of Interest

Caution

- Topics presented are for general *educational purposes only* - and are NOT a substitute for professional advice, diagnosis or treatment. Always seek the advice of your healthcare team.
- This material is designed as a supplement to formal healthcare education. Clinicians should practice in accordance with their professional training.

Notice of Traumatic Content

Trauma is personal for everyone.

This lecture includes discussion of Child Neglect - Deprivation, Abuse, Racial Trauma and Discrimination

Our lecture includes scientific concepts often omitted in Medical Training

This content may be distressing.

We invite you to visit [thecenter.org](https://www.thecenter.org) sections on Secondary Trauma and suggestions for Self Care.



1. Check-in and Regulatory Practice
2. Core Concepts
3. Application Strategies
4. Cases

Let's
Check in:

How Are
You
Feeling?



Learning Objectives

1. Define Trauma
2. Describe impact of Trauma on Health
3. Identify Positive Experiences which affect health
4. Name 2 Regulatory Activities to include in Patient Care



Big Questions



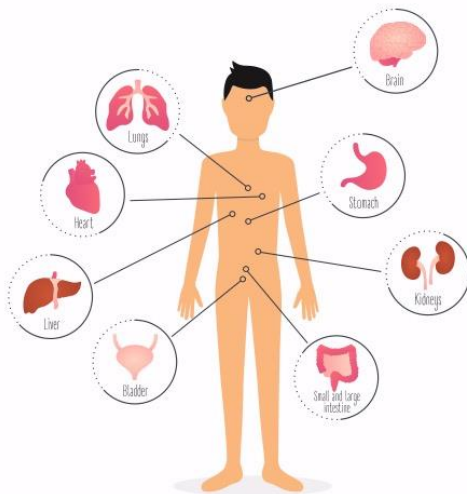
How does Trauma
affect Health ?



What can Clinicians
do ?



What are the skills
Clinicians need ?

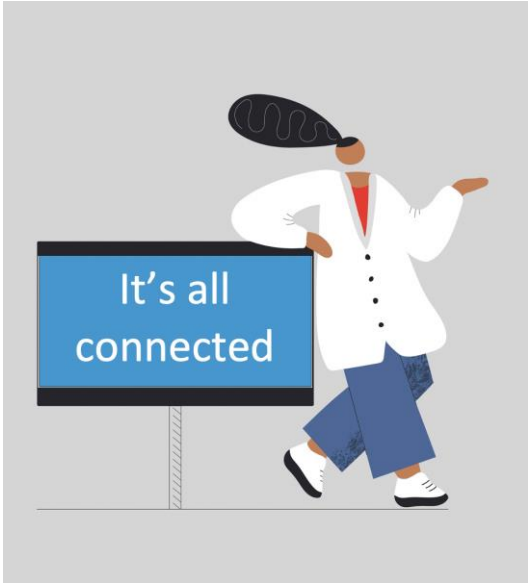


The Body is seen as a
collection of Organ Systems

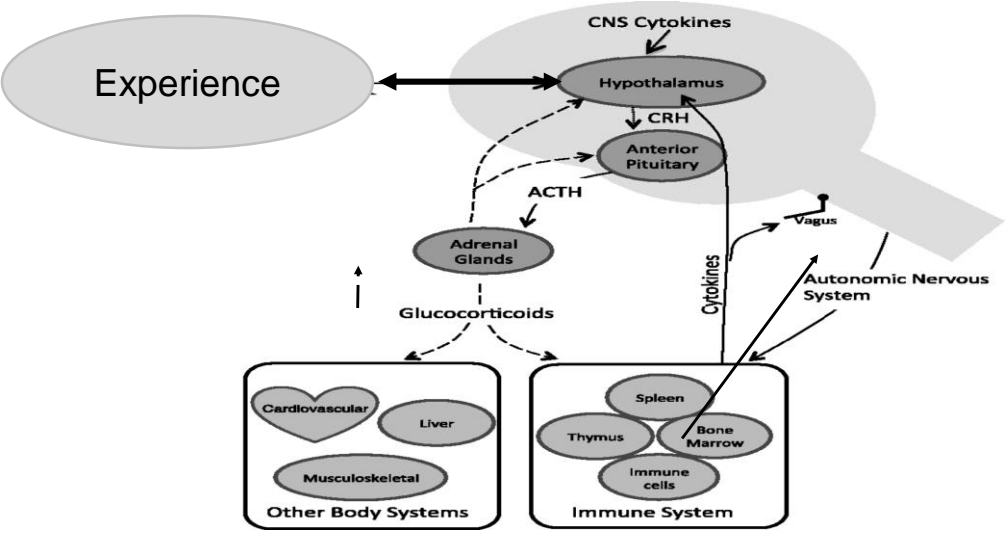
Key Problem:

Our scientific
MODEL of Health
is fragmented
And unscientific

Better
 Medical Model
 ———
 Brain-Body as a
 unified system

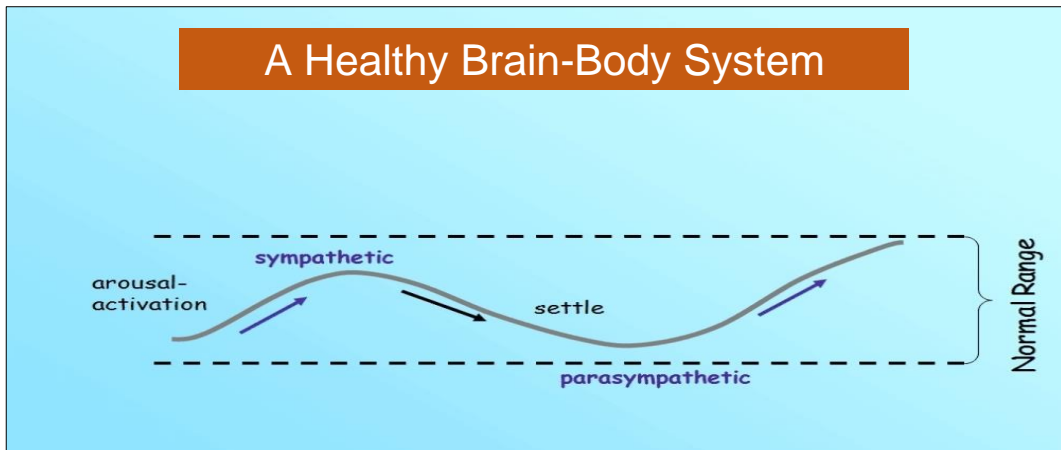


Unified Brain-Body-World Interrelationship



Adapted from Johnson SB, Riley AW, Granger DA, Riis J. The science of early life toxic stress for pediatric practice and advocacy. *Pediatrics*. 2013;131(2):319-327. doi:10.1542/peds.2012-0469

Brain and Autonomic Nervous System Coordinate Physiologic Balance/Regulation

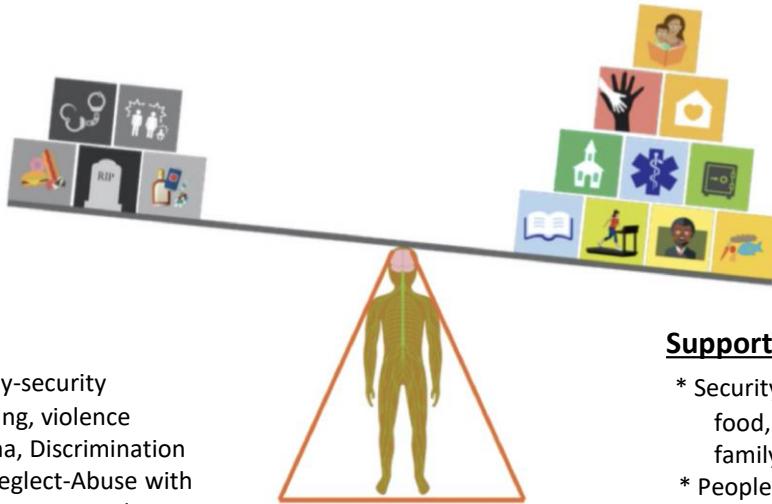


Cycle of Arousal-Activation – and – Calming-Settling

What does Brain-Body Regulation Look Like?

Awakening	Wake feeling rested, refreshed, optimistic
Body sensations	Aware and in touch with one's body. No major pain. Good breathing, digestion, activity.
Emotional Balance	Feel positive, able to feel and balance one's emotions.
Attention Concentration	Clear thinking and focus, learn new things.
Relationships Co-Regulation	Act calmly, positively with others, resolve differences.
Memory	Can remember memories and remain balanced
Sleep	Fall asleep easily, sleep for 6-8 hours

Experience: it all counts!



Stressors:

- * Lack of safety-security
food, housing, violence
- * Racial Trauma, Discrimination
- * Childhood Neglect-Abuse with
dysregulated Brain Networks

Supports:

- * Security-safety-justice
food, housing, schools,
family income
- * People you can count on
- * Healthcare you trust

Positive Experiences Enhance Regulation/Health

Positive - Tolerable

- Predictable
- Moderate
- Controlled
- Matches abilities



Regulation/Resilience/Health

Traumatic

- Unpredictable
- Severe or Frequent
- Uncontrolled
- Overwhelms abilities



Dysregulation/Vulnerability/Disease

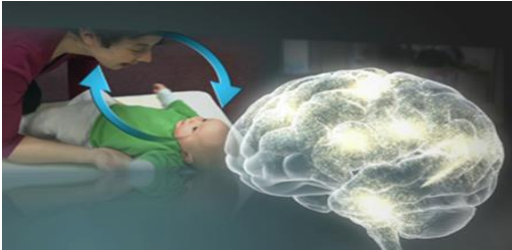
Source: Bruce D. Perry, MD PhD

The Roots of Regulation and Health: Child-Caregiver Attachment and Attunement



Rees C. Children's attachments. Paediatrics and Child Health. 2008;18(5):219-226. doi:10.1016/j.paed.2008.02.009

Attachment and Attunement Support Regulation Across the Lifespan



Processes and Activities can Support Brain-Body Regulation

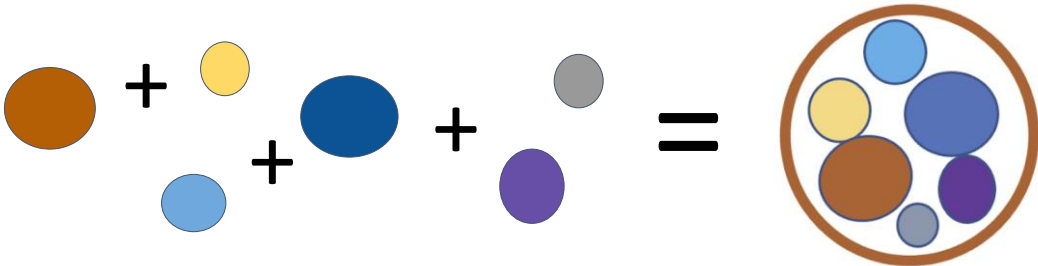
Inborn Regulation

- SLEEP
- Daily Routine
- Movement-Exercise
- Relationships
 especially Parent-Child

Regulatory Activities

- Sports
- Expressive Arts
- Mindfulness
- Yoga
- Fun - Play
- Trauma Processing

Positive Childhood Experiences are Additive (Cumulative) and Protective



Example Positive Experiences			
	Secure Attachment		Able to practice community traditions
	Food/Housing Security		Connected to adults-peers
	Neighborhood Safety		Free to express feelings

What is Trauma?

Any Event that

- Is experienced as threatening or harmful to us or others
- Presents demands that overwhelm our resources
- Impairs multiple dimensions of our being over time



Regulation vs Dysregulation

SOURCE: Leitch. Action Steps using ACEs and trauma-informed care: a resilience model *Health and Justice* (2017) 5:5

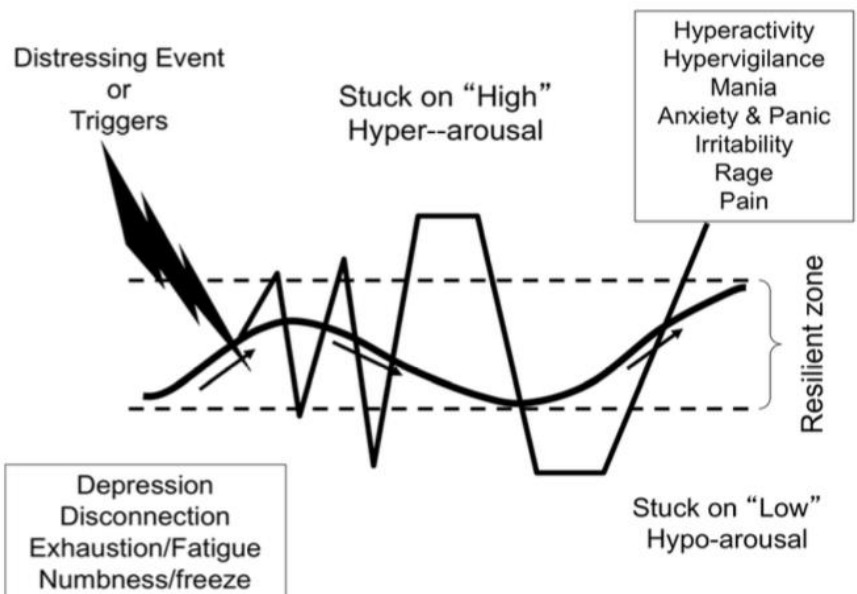


Fig. 2 ANS Rhythm Outside the Resilient Zone

Traumatic Experiences Impair Regulation/Health

Positive - Tolerable

- Predictable
- Moderate
- Controlled
- Matches abilities



Regulation/Resilience/Health

Traumatic

- Unpredictable
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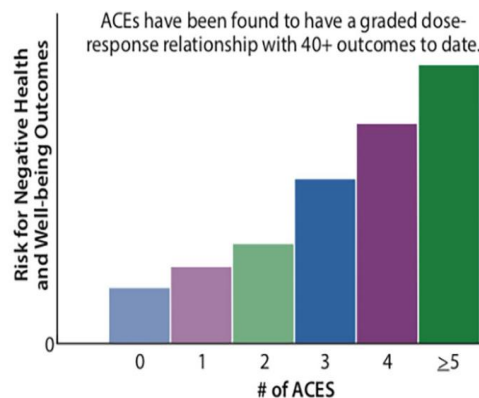


Dysregulation/Vulnerability/Disease

Source: Bruce D. Perry, MD PhD

Conditions linked to Childhood Adversity and Trauma

- Preterm and LBW Birth
- Maternal and fetal death
- Over and underutilization
- Difficulty adhering to Rx
- Unexplained symptoms
- Disordered Sleep/Eating
- School Problems
- Chronic Disease
- Chronic Pain
- Autoimmune Disease
- Mental Health/Behavior Problems
- Addiction
- Poorer Surgical Outcomes
- Injuries and Disability
- Perpetrating and Experiencing Violence
- More

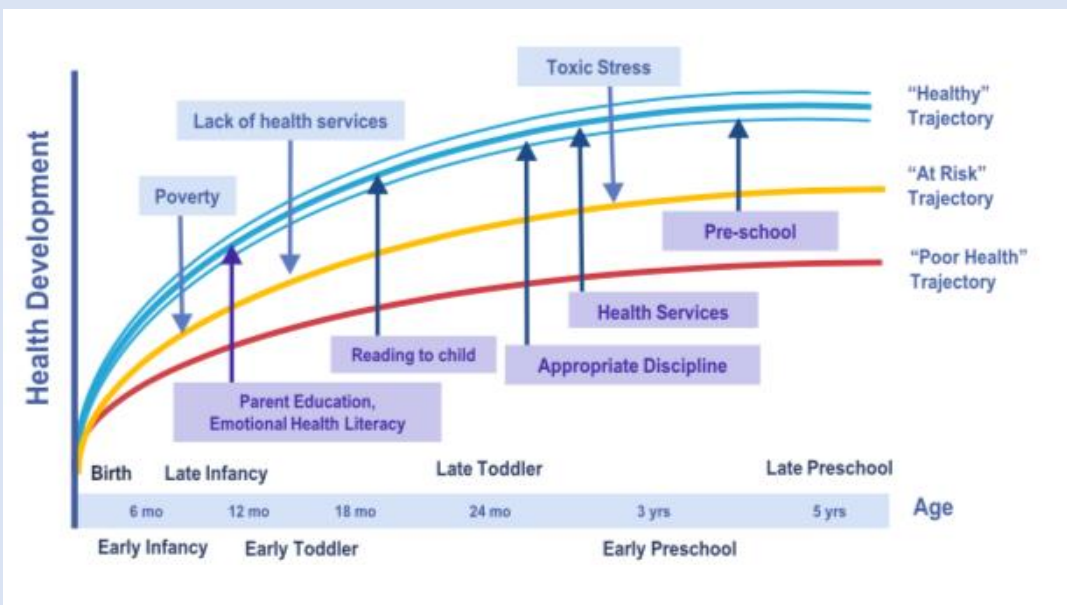


*This pattern holds for the 40+ outcomes, but the exact risk values vary depending on the outcome.

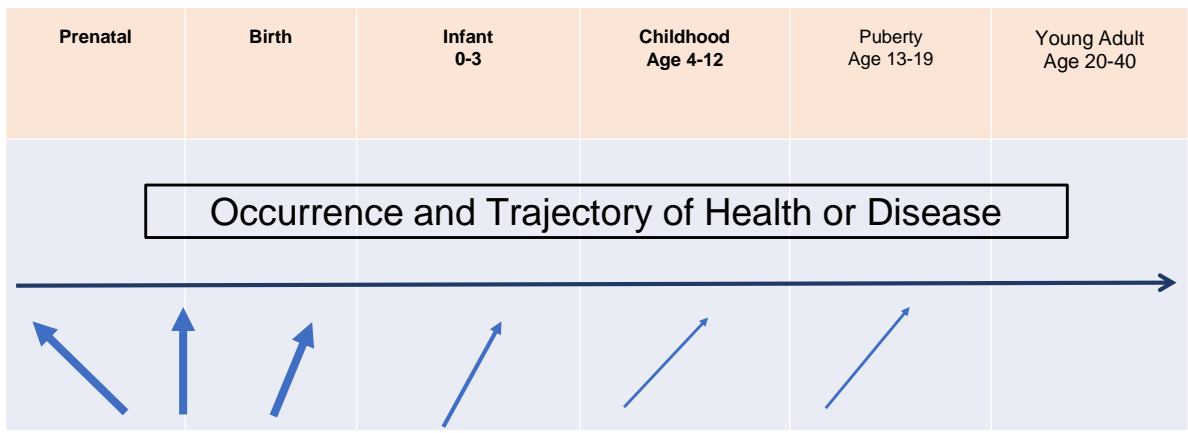
ACE_{≥6}: Lifespan **decreases** by 20 years

LIFE COURSE

(Source: Halfon 2013)

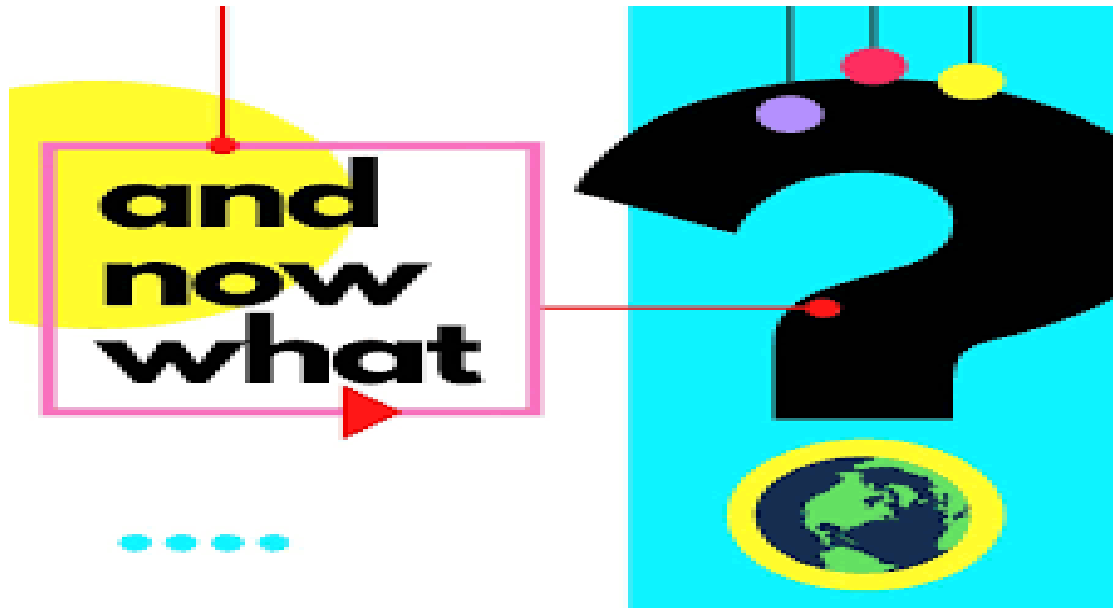


Visualize Patient History using a Life Course Chart



What happened here?

THEN. 2020



Apply the Science to Ourselves

Create right relationships with Ourselves, Others, and Nature

REGULATE -- Build RHYTHMS

- Daily Routines
- Affirmations
- Walk, swim, dance, sing, art
- Spend time in nature

RELATE -- Strengthen connections with self and others

- Reflect and Have Fun
- Notice where you are in the moment and share if it feels right
- Listen without judgment. Ask before offering advice
- Address the roots of trauma and injustice
- Acknowledge that each person is an expert of their own experience, body & needs
- Become aware of stigma, bias, and blind spots

REASON -- Find meaning and purpose

- Talk (or write) about Feelings and Experiences
- Support collective transformation



Apply the Science to Patient Care

1. Start with typical Problem List
2. Trace Personal History, paced by family/patient
(Ask: How was/is growing up?)
3. Re-evaluate Life Course & Disease Progress
using Developmental/Regulatory Approach
4. With Family/Patient, co-develop new Plan
emphasizing safety, regulation, and relationships

Questions?



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