




Your Brain on Trauma


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The BIG WHY!!!!



- Toxic stress is a **MEDIATOR** between early childhood adversity and less than optimal outcomes in learning, behavior and health that span a lifetime
- Understanding the underlying **BIOLOGY** supports the strong need for **prevention and early intervention in policy**



Toxic Stress and Trauma


It's not the traumatic event itself, but how the stress response system reacts that determines the impact.



Impact is greater and longer lasting with young children because of their developing state



Adverse Childhood Experience Study

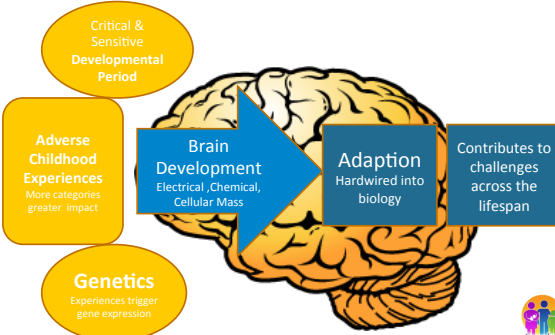



Vincent J. Felitti, MD

- Collaboration between the Centers for Disease Control and Prevention and Kaiser Permanente
- Dr. Robert Anda (CDC) and Dr. Vincent Felitti (Kaiser Permanente)
- Initial phase 1995-1997
- Spawned over 70 scientific articles
- Replicated in over 32 states



ACEs & Brain Development Overall Picture



Critical & Sensitive Developmental Period


Adverse Childhood Experiences
More categories greater impact

Genetics
Experiences trigger gene expression

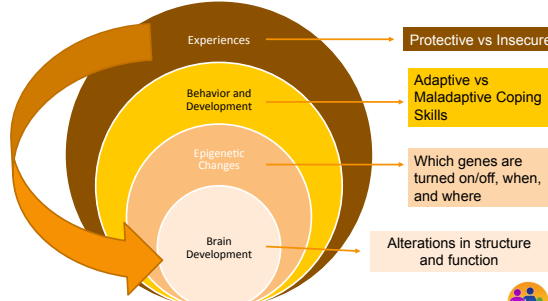
Brain Development
Electrical, Chemical, Cellular Mass

Adaption
Hardwired into biology

Contributes to challenges across the lifespan



Development is a Dance Between Nurture and Nature




Experiences → Protective vs Insecure

Behavior and Development → Adaptive vs Maladaptive Coping Skills

Epigenetic Changes → Which genes are turned on/off, when, and where

Brain Development → Alterations in structure and function

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First 1000 Days Are Crucial

- Born with 100 billion neurons - Continuous process of forming new connection/pruning
- Eighty percent of brain growth occurs in first 3 years
- Brain develops in the context of it's environment



Relationships are the active ingredient that sets the foundation



Development is Relationship Dependent



Babies are not born with the ability to regulate emotions.

Regulatory system develops when the baby's signals are understood and responded to by the caregiver – serve and return*.




Experiences Build Brains

Three Core Concepts in Early Development

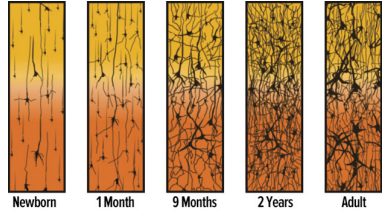
1 Experiences Build Brain Architecture

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The Foundation: Brain Architecture

In the first few years of life, 700 to 1,000 new neural connections form every second.




Genes and experience work together to construct brain architecture




Stress Impacts Brain Development

Persistent Stress Changes Brain Architecture

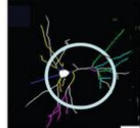
Normal



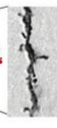
Typical neuron – many connections




Toxic Stress

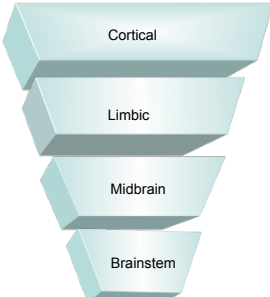


Damaged neuron – fewer connections





Brain Development Hierarchical



Cortical

Abstract Thought
Problem Solving
Affiliation/Socialization
"Attachment"
Memory

Limbic


Emotional Reactivity
Motor Control
"Arousal"

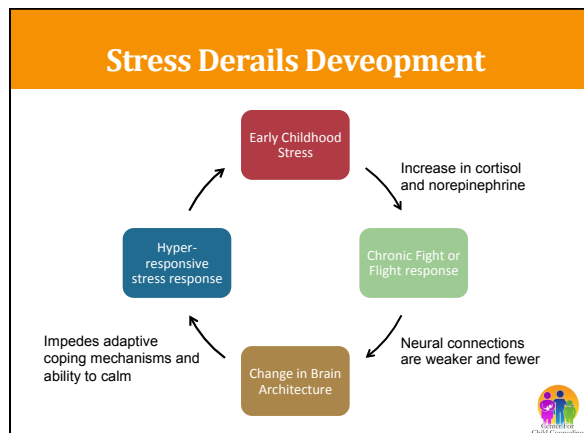
Midbrain

Appetite/Satiety
Sleep-Wake Cycle

Brainstem

Blood Pressure
Heart Rate/Breathing
Body Temperature





Toxic Stress and the Developing Brain

Three Core Concepts in Early Development

3 Toxic Stress Derails Healthy Development

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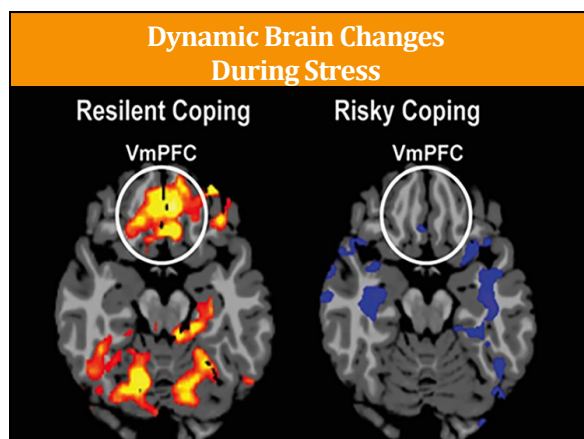
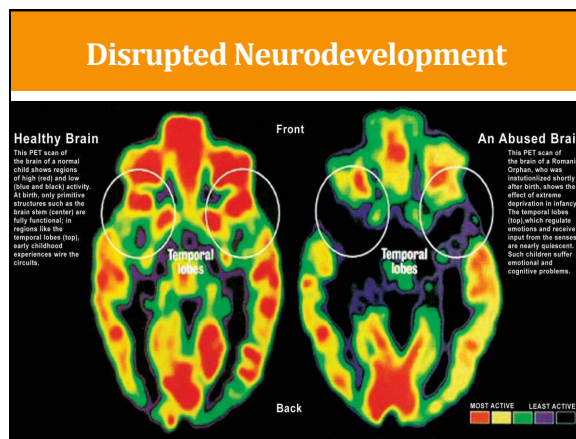
Survival Trumps Learning

Executive Center – Handles logic, empathy, compassion, creativity, self-regulation and self awareness, sequential thought, planning, problem-solving and attention

Emotional Center – Processes memory, emotions, response to stress, nurturing, caring, separation anxiety, fear, rage, social bonding and hormone control

Survival Center – Regulates autonomic functions, breathing, digestion, heart rate, sleep, hunger, instinctual behaviors, functions that sustain life including flight fight freeze response

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Chronic/Toxic Stress

HOW CHRONIC STRESS AFFECTS YOUR BRAIN

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Root of a Multitude of Societal Problems

Academics Maltreatment Mental Health Addictions Disease Crime

Early Adverse Experiences

What Can We Do?

- The good news is the plasticity of the brain, and the body wants to heal.
- The brain is continually changing in response to the environment.
- If the toxic stress stops and is replaced by practices that build resilience, the brain can slowly undo many of the stress-induced changes.

Healthy Relationships Buffer the Impact

- Trauma Informed Communities
- Foster nurturing and responsive relationships
- Assessable evidence based trauma assessment and interventions to support

ACEs Aware and Trauma Informed

SHIFT IN THINKING
FROM "What's wrong with you?"

TO "What happened to you?"

"It's easier to build strong children than repair broken men" ~ Fredrick Douglas

Our Challenge

Translate what we know in neuroscience and the impact of ACEs ..

..into effective policies and practices for families w/ children to

..improve education, health and lifelong productivity

Trauma Lens Across Our Community

Children and families that have experienced trauma

Trauma Informed Schools

Trauma Informed Justice Systems

Trauma Informed Communities

Trauma Informed Medicine

THANK YOU!

To learn about Center for Child Counseling's ACEs work in Palm Beach County, visit: www.centerforchildcounseling.org/fightingaces

Watch Palm Beach County leaders discussing the importance of this issue: <http://bit.ly/PBCACE>

Join in the conversation at: www.facebook.com/centerforchildcounseling

Get Online Training in Play Therapy and ACEs with WeLearnPlay: <http://www.centerforchildcounseling.org/welearnplay/>

For more information, email: info@centerforchildcounseling.org

