



Trauma, Learning and Development in Early Childhood

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Acknowledging

Kathleen Fitzgerald Rice and Betsy McAlister Groves
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Three Levels of Stress Response



Positive

Brief increases in heart rate,
mild elevations in stress hormone levels.

Tolerable

Serious, temporary stress responses,
buffered by supportive relationships.

Toxic

Prolonged activation of stress response systems
in the absence of protective relationships.

Stress and Trauma



Stress:

“a response to actual or perceived threats in the context of uncertainty about our capacity to manage the threat.”

(Gunnar & Davis, in press)

Traumatic event:

“an event involving actual or threatened death or serious injury or threat to the physical or psychological integrity of the child or another person.”

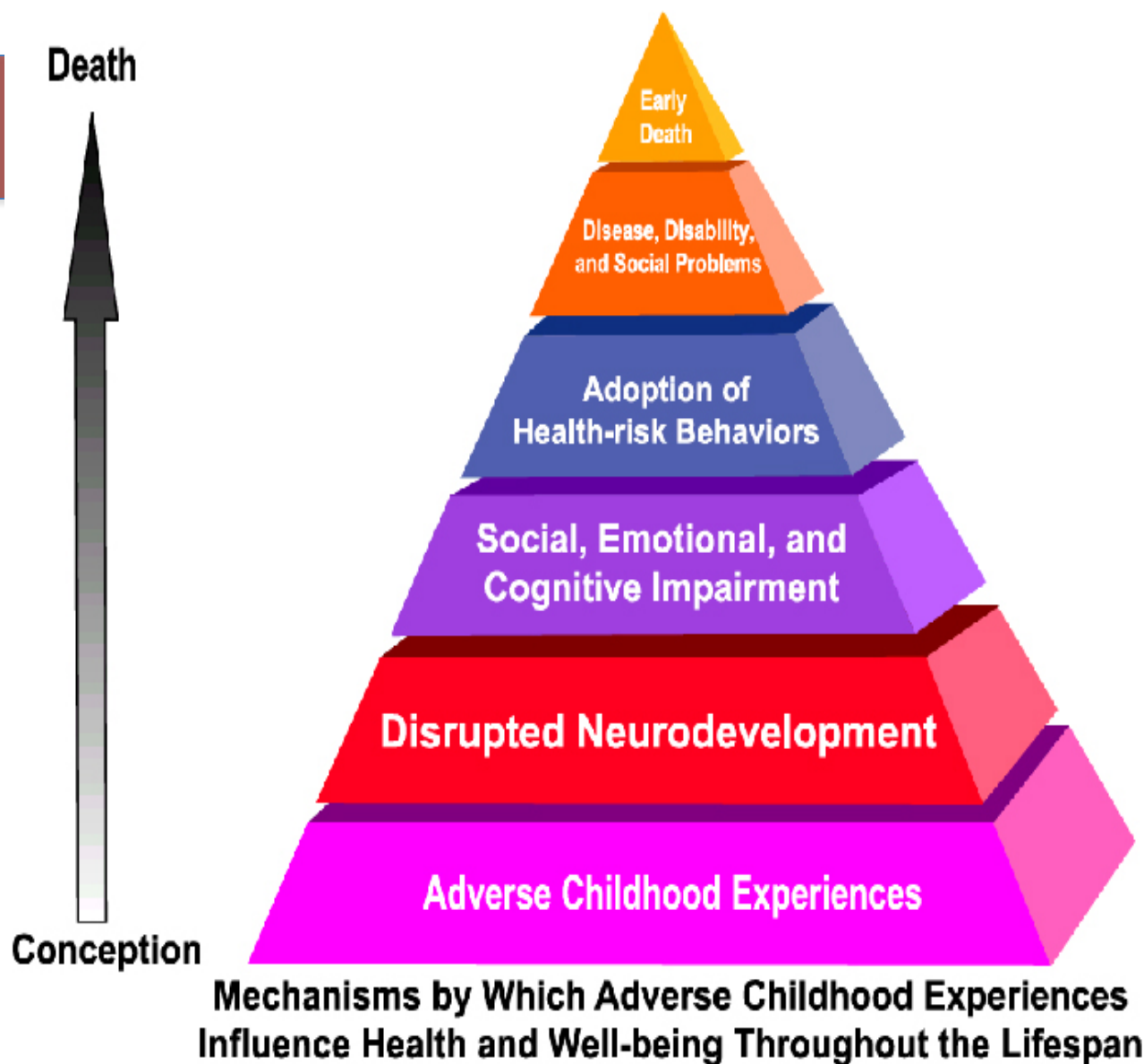
(ZERO TO THREE, 2005, p. 15)

Toxic Stress



- Strong & prolonged activation of stress response systems in the **absence** of buffering protection of adult support
 - Recurrent abuse, neglect, severe maternal depression, substance abuse, family violence





Evidence from ACE Study

indicates...



Adverse childhood experiences/trauma = the most basic cause of health risk behaviors, morbidity, disability, mortality, and healthcare costs:

- Cardiovascular disease
- Hypertension
- Obesity
- Diabetes
- Mental health problems



What is Trauma?



- A psychological **wound**
- An exceptional event that **overwhelms** a person's capacity to cope and **shatters** trust in expectancies of everyday life
- An event that **exceeds stress tolerance**—e.g. domestic violence, war, child abuse, natural disasters, life threatening conditions and events

Acute and Chronic Trauma



- Acute trauma is the consequence of a single event such as a severe car accident
- Chronic or complex trauma means exposure to multiple events overtime and likely has a cumulative impact

TYPES OF TRAUMA



TYPE I TRAUMA

Description: Single event,
dangerous, isolated, sudden.

Response: Recalled vividly,
quicker recovery time, better
prognosis

Examples: Motor vehicle accident,
natural disaster, homicide,
suicide.

TYPE II TRAUMA

Description: Multiple,
chronic, repeated.

Response: Memories are
fuzzy, helplessness,
dissociation, character
changes, long standing
problems.

Examples: hostage situations,
physical, sexual abuse.

The Resiliency Puzzle



Three dolls each receive the same blow and

- One rings like a bell
- One thuds like iron
- One shatters like glass

(Anthony, 1974)

Factors Mediating Trauma



- Protective factors (Family)
- Availability of primary caretaker
- Ties to extended family
- High expectations of child
- Consistent family rules
- Well balance discipline (authoritative vs. authoritarian or lassaize faire)
- Family routine , rituals and stability
- Pre-traumatic level of stress and coping
- Social support

Factors Mediating Trauma



- **Age of the Child**
- Marker ages: 6-9M, 18M, 3Yrs
- **Protective/factors (child)**
- Flexible temperament
- Secure attachment
- Robustness
- Regulatory capacity
- Strong cognitive, problem solving and verbal skills (symbolic)
- Positive self- esteem
- Mastery motivation

Factors Mediating Trauma



- **Protective factors (Community)**
- Safe, positive , nurturing school experience
- Availability of supportive adults, ego ideals
- Cultural identity
- **Circumstances of the trauma**
- Acute/chronic,
- Intensity and proximity
- Physical injury to the child
- Physical injury to the parent
- Loss of a parent

Posttraumatic Stress Disorder



Major themes:

1. **Reexperiencing symptoms**
2. **Avoidance/numbing symptoms**
3. **Hyperarousal symptoms**



Behavioral/Symptomatic Expressions of Trauma



Reexperiencing/intrusion cluster

- Play or behavior that reenacts some aspect of the trauma
- Preoccupation with the traumatic event
- Repeated nightmares (content may or may not be related to the traumatic event) which increase in frequency after the event
- Significant distress at reminders of the traumatic event
- Marked physiological reactions (e.g. sweating, agitated breathing, changes in color) at reminders of the traumatic events.

Behavioral/Symptomatic Expressions of Trauma



Numbing of responsiveness/avoidance cluster

- Dissociative episodes, beginning after the traumatic event(s), in which the infant /young child freezes, stills or stares and is unresponsive to environmental stimuli for seconds to minutes in response to reminders of the traumatic events.
- Increased social withdrawal
- Reduced expression of positive emotions
- Markedly diminished interest or participation in activities such as play and social interactions
- Increased fearfulness or sadness

Behavioral/Symptomatic Expressions of Trauma



Hyperarousal cluster

- Difficulty going to sleep, evidenced by strong bedtime protest, difficulty falling asleep, or repeated night walking unrelated to nightmares
- Difficulty concentrating
- Exaggerated startle response
- Increased irritability, outbursts of anger or extreme fussiness, or temper tantrums



Behavioral/Symptomatic Expressions of Trauma

New fears/aggression cluster

- Fear of separating, frightened by new routines, phobic-like responses, striking-out, hurting animals, sexualized behaviors,
- Increased masturbation, anxiety dominates over curiosity with regard to body exploration
- Symptom profile may mimic/overlap with ADHD and SPD
- Physical symptoms
- Individual differences
- Not every child experiences PTSD



Trauma Vs. ADHD

TRAUMA

Fear
Arousal
Avoidance
Irritability
Guilt
Dissociation
On-alert
Reckless

OVERLAP

Concentration
Distracted
Not listening
Disorganization
Hyperactive
Restless
Sleeping

ADHD

Attention
Following
instructions
Organization
Fidgeting
Waiting
Talking excessively
Losing things
Interrupting



Trauma Vs. SPD

TRAUMA

Fear

Increased Arousal

Avoidance/Triggers

Irritability

Guilt

Dissociation

On Alert

Reckless

Poor Concentration

Exaggerated Startle

Sleep Disturbance

OVERLAP

Over reactivity

Hyper arousal

Avoidance of stimuli

Muted
response/numbing

reckless

SPD

Over-reactive

Intense

reaction/sensory stimuli

Avoidance

Under-responsive

Muted responses

Predictably

unresponsive/sensory
stimuli

Sensory system (s)
involved

Trauma/SPD Differential



SPD

- Sensory system (s specific)
- No evidence of specific precipitating event
- Does not habituate repeated exposure to stimuli
- Developmental vs sudden onset

Trauma

- Response is stimulus specific (trigger)
- Evidence of precipitating stressful event
- Symptoms may diminish after 2 year period
- Symptom onset sudden

Signs of trauma in ECH



- Clinging to caregivers
- Refusal to go to school or other settings
- Persistent fears related to the event
- Sleep disturbances
- Easily startled, “hypervigilant”
- Loss of concentration
- Behavior problems
- Irritable, fussy, tantrums, difficulty calming down
- Physical complaints without a physical cause
- Decreased or increased activity level
- Repeating the event over and over in play or conversation
- Resort to behaviors common to being younger (for example, thumbsucking, bed wetting, or fear of the dark)
- Physical complaints (headaches, stomachaches, dizziness)
- Dissociation



Impact of Exposure to Disaster in Children



- Compromised feelings of safety and increased feelings of danger
- Diminished belief in the capacity of the adult world to protect
- Diminished sense of trust and security in self and others

Impact of Exposure to Disaster in Children (Con't)



- Increased cognitive preoccupation and interference with capacity for learning and information processing
- Interference with capacity for emotional regulation, modulation of alertness and arousal and self-calming

Impact of Exposure to Disaster in Children (Con't)



- Disruptions of biological and psychological routines of sleeping and eating
- Increased risk for social and behavioral difficulties



The Developmental Context of Exposure to Disaster and Trauma

The Developmental Context of Exposure to Disaster



1. At all developmental levels - the development of emotional and behavioral problems - “symptoms” - can be seen as attempts at restitution and self-protection.



2. Exposure to disaster
disrupts the processes and
tasks unique to each
developmental period.



3. All development occurs within the context of a relationship. When exposed to disaster, developmental restoration and recovery occur through helping relationships.

Infancy (birth-18 months)



- Self-regulation, trust, security, forming attachments, engaging in gestural and reciprocal communication.

Toddler (18-36 months)



- Emerging sense of autonomy. Imaginative play and growing use of words to communicate needs and intentions, explore interpersonal themes and the full range of emotions.

Preschool Children (3-5 years)



- Growing use of fantasy and imagination, increased feelings of power, competence and effectance, increased self-control, growing shared emotional play and thinking, “building bridges” among ideas.

Impact of Trauma



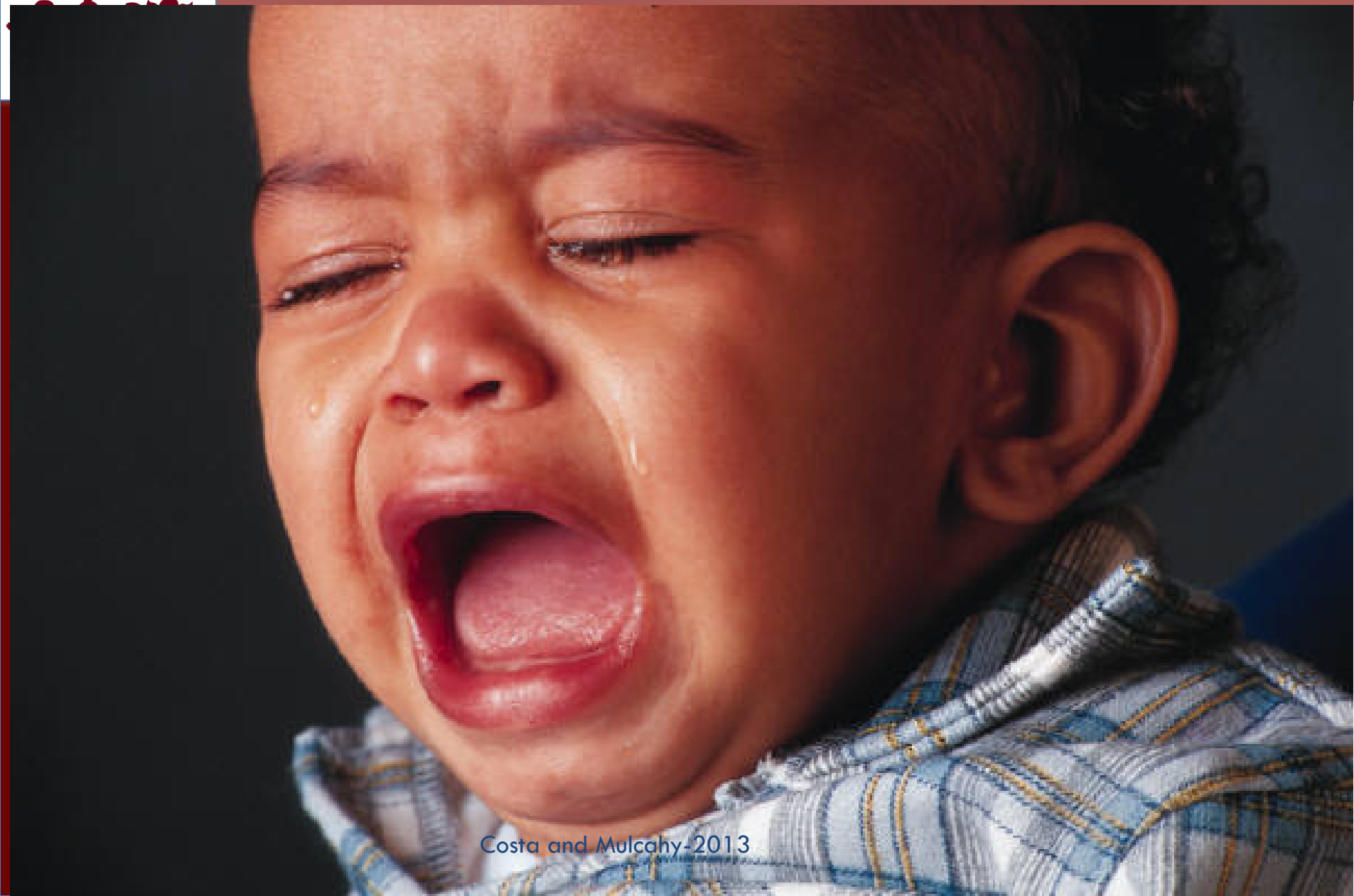
- **Attachment classification**
Ability to use the caregiver, disruption in patterns of co-regulation, compromised secure base behaviors, stranger and separation anxiety
- **Brain architecture**
Excessive stress, cortisol research
- **Delayed development and learning**
Survival reactions (fight, flight, feign dead) inhibit interest in the world, exploration and discovery; potential learning style differences
- **Regression**
- **Self-identity diffusion**
- **Social constriction**



Trauma and the Brain



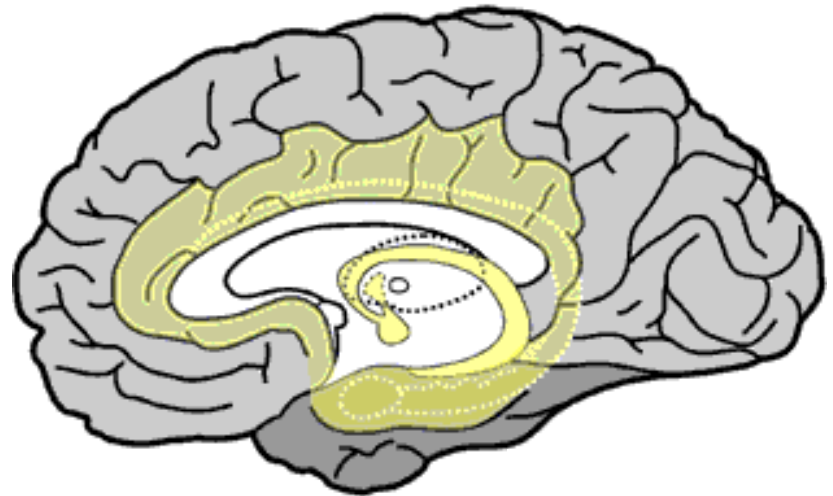
• *Costa and Mulcahy*



Costa and Mulcahy-2013

Limbic System

“Emotion”



About the Limbic System



- “Serves as a source of social processing, stimulus appraisal and brain/body (“emotional”) arousal.” - Daniel J Siegel (1999)
- THIS MEANS – that the structures in the core of the brain that make up the “limbic system” “process” the meaning of social situations, and connects present perceptions of a situation with the memories of past situations.



Costa and Mulcahy-2013

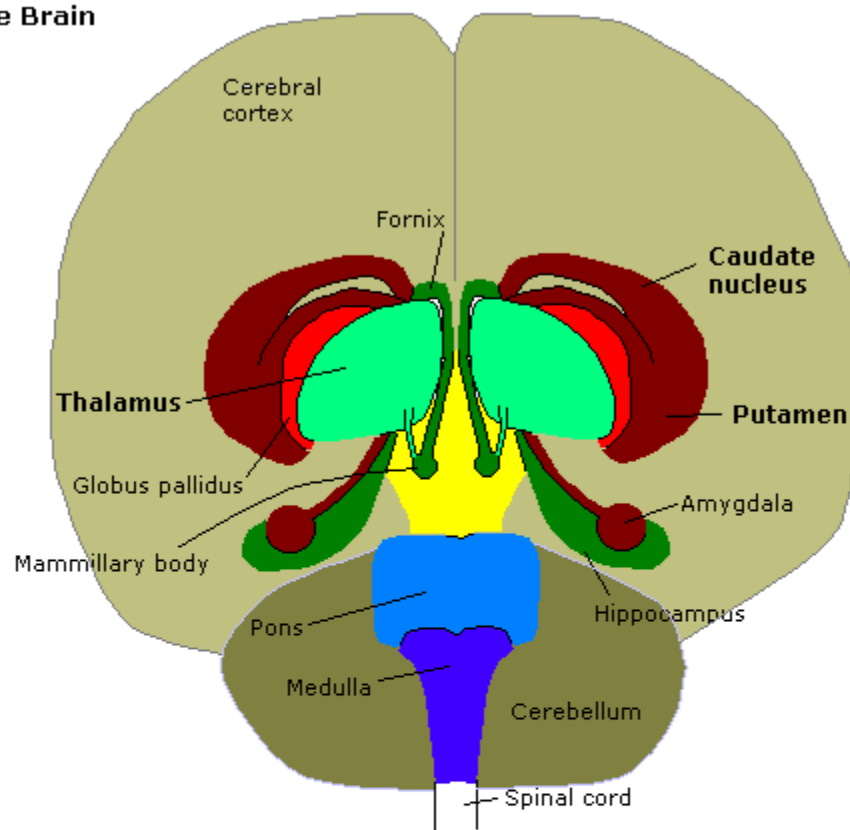
German Proverb



*“Don’t let fear make
the wolf bigger than
it is.”*

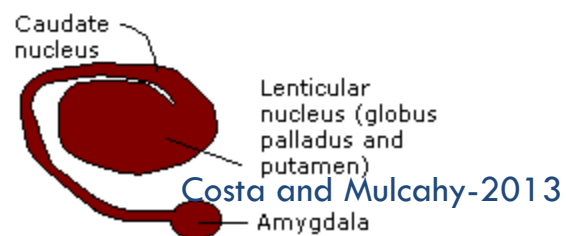


The Brain



The brain as viewed from the underside and front. The thalamus and Corpus Striatum (Putamen, caudate and amygdala) have been splayed out to show detail.

Corpus Striatum



Amygdala



- This structure is part of the Limbic System- and in the development of brains in babies, this structure (based on real experiences with caregivers and the world) begins to get “wired” to “process” (interpret the meaning of) new experiences. Because the amygdala is connected to other brain regions, what happens in the amygdala affects the entire brain!

Dan Siegel – “Hand Model of the Brain” (Mindsight, 2010)

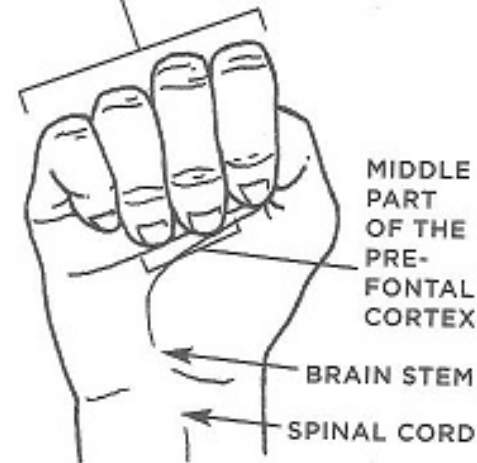


MIDDLE PREFRONTAL CORTEX



Place your thumb in the middle of your palm as in this figure.

CEREBRAL CORTEX



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”



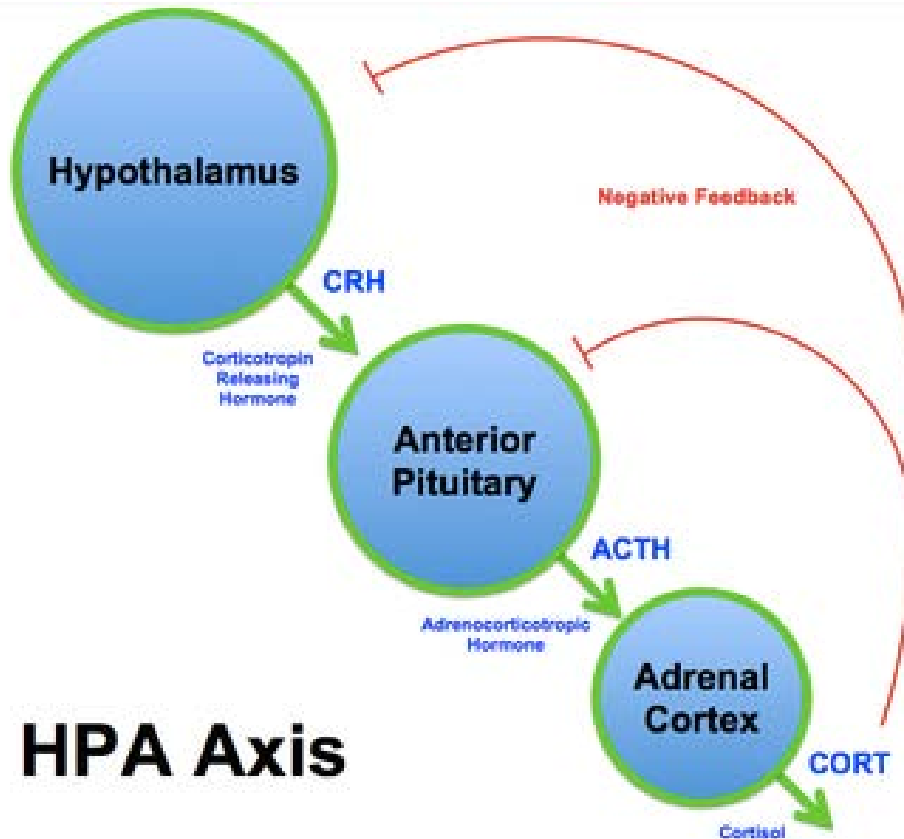
“....Lift up your fingers and you ’ll have an image of how we ‘flip our lids ’ and head down the ‘low road ’ in our interaction with others. ”

Mindsight (2010), p. 22

Hypothalamic-Pituitary Adrenal (HPA) Axis



Fear
Trauma
Danger



Unlike Las Vegas....



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

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)

Two states of brain/mind



- Open receptive state (lid intact)
- Closed, reactive state (lid flipped)



The Neurodevelopmental Context of Exposure to Disaster and Trauma

Bruce D. Perry, MD, Ph.D.

Neurosequential Model of Therapeutics

- Trauma adversely effects the infant and child brain by causing abnormal organization and function of important neural systems in the brain.
- Timing of trauma effects emerging brain systems and an understanding of these systems will influence the assessment process and selection of therapeutic interventions.
- Proper therapeutics are effective!



The Neurodevelopmental Context of Exposure to Disaster and Trauma- Bruce D. Perry, MD, Ph.D.

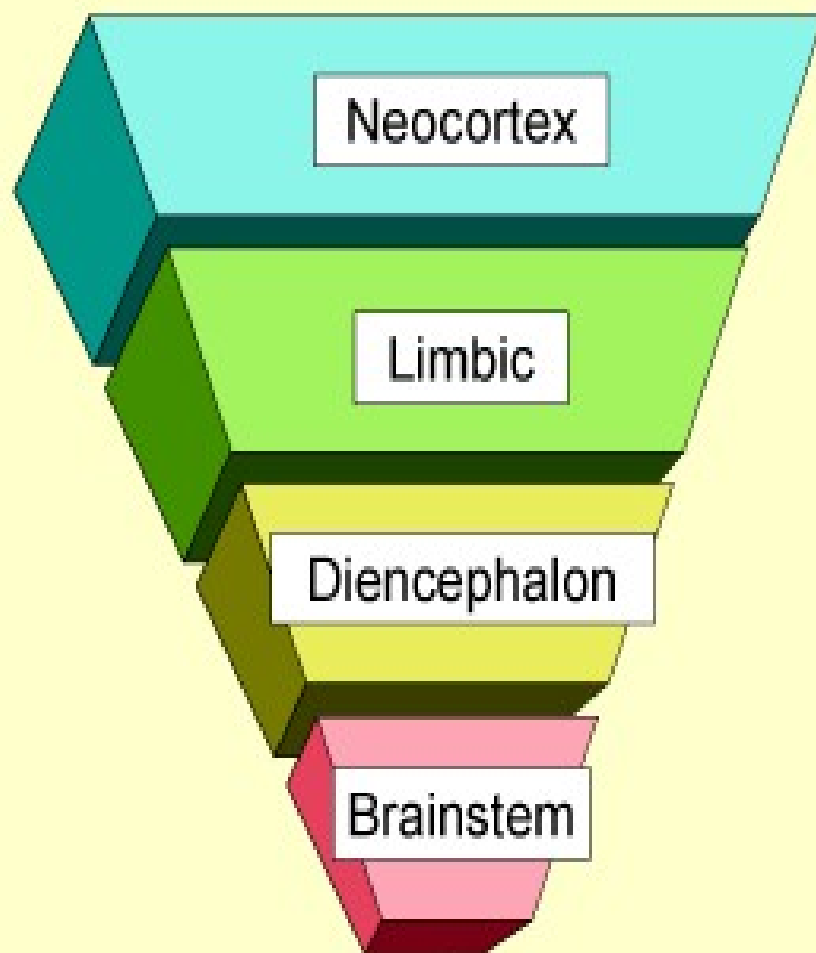
Six Principles

1. The brain is organized in a hierarchical fashion, such that incoming sensory input first enters lower parts of the brain.
2. Neurons and neural systems are designed to change in a “use-dependent” fashion.
3. The brain develops in a sequential fashion.
4. The brain develops most rapidly early in life.
5. Neural systems can be changed, but some systems are easier to change than others (Higher centers are more complex and more “plastic”- more likely to change).
6. The human brain is designed for a different world (“Relational Milieu”).

Physiological Responses to Trauma



- May affect the growth and pruning of neural connections
- Impact on Autonomic Nervous system
- Impact on Limbic System (Amygdala, hippocampus)
- Role of Cortisol
 - Higher baseline of stress and startle response
 - Regulatory issues and sensory problems
- Impact on Growth hormones
- May contribute to dissociative states, memory, learning and cognitive abilities



Abstract thought
Concrete Thought
Affiliation
"Attachment"
Sexual Behavior
Emotional Reactivity
Motor Regulation
"Arousal"
Appetite/Satiety
Sleep
Blood Pressure
Heart Rate
Body Temperature

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14

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Bruce Perry, MD, Ph.D.



- These images on the next slide illustrate the negative impact of neglect on the developing brain. In the CT scan on the left is an image from a healthy three year old with an average head size. The image on the right is from a three year old child suffering from severe sensory-deprivation neglect. This child's brain is significantly smaller than average and has abnormal development of cortex.

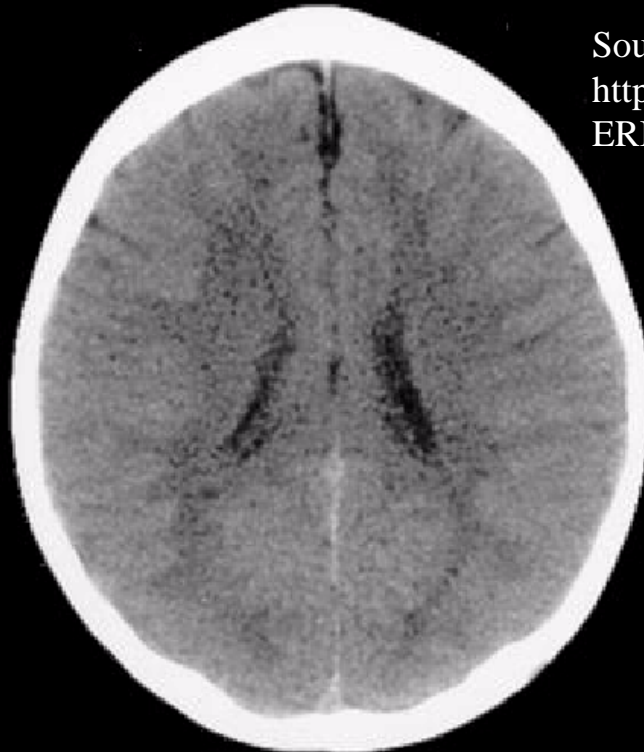
The Impact of Extreme Neglect on the Developing Brain



3 Year Old Children

Source: Bruce Perry

<http://www.childtrauma.org/CTAMATERIALS/neuros~1.asp>



Normal



Extreme Neglect

CIWITAS ChildTrauma Programs

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Take Home Message



- Not only can exposure to disaster and trauma affect a child's growing ideas about himself and the world – **IT ALSO AFFECTS THE ORGANIZATION, STRUCTURE AND FUNCTIONING OF THE BRAIN.**
- This means that the brain changes may create problems in “self-regulation”, memory, ability to sustain attention, ability to form secure relationships and the ability to learn!



Trauma and the Structure of the Inner Life



Defensive Organization

- Denial (internalizing)
- Acting Out (externalizing)
- Projection (externalizing)
- Identification with the aggressor

Structural Compromises

- Ego splitting – fire wall (ex. Sex & affection)
- Compromised integration
- Increased risk for personality disorder

Intervention



Therapeutic
Sphere



Parent
Sphere



School
Sphere

Common factors

Components of trauma treatment



1. Promoting developmental progress (body, play, language, etc)
2. Unstructured, reflective, developmental guidance
3. Modeling appropriate protective behavior
4. Interpreting feelings and actions
5. Promoting emotional support/empathic communication
6. Linking affect and experience
7. Concrete needs/case management

The therapeutic sphere



- Creation of a “holding environment”(safety, protection from excessive impingement, reliability, security in an attuned relationship),
- Freedom from self-blame
- Using the self-curative power of play (“turning passive into active”)
- Reframing of cognitive distortion and faulty causality
- Linking content and affect
- Construction of a cohesive narrative
- Graded exposure to content and experience
- Dyadic/family work

Caregiving Relationships



Nurturing relationships provide children with a sense of safety and confidence, and offer **The best buffer against stress.**

Create A Safe Environment



Create an ambiance of safety and security
“Confident Expectation”

- Consistency of care
- Predictability of Place
- Reassurance of routine

Create a “Holding”

Environment



- Sensitive
- Empathically attuned
- Intersubjective
- Reflective relating through the mind's eye of the child
- Serving as a co-regulator
- Defining the playroom as container and microcosm

Allow the Child to Tell You



- Body (attune to arousal and reactivity, breathing, micro-movements, startle responses, altered/protective states),
- Play (give permission to play; recognize play as self-curative; attend to autosphere, microsphere, macrosphere representation in play)
- Attend to play disruption and cessation of play
- Language (content, quality, affect, what is unsaid)
- What does the symptom solve

Allow the Child to Tell You



- Projection as the “royal road” to the content of the mind and inner life of the child
- Design your playroom (modulation of stimuli and excitation, availability of sensorimotor materials)
- Give each child her/his own box for toys, products, memories
- Avoid undue haste

Technique



- Treat dyadically when possible
- Model appropriate protective behavior
- Provide reflective developmental guidance
- Interpret from the defense to the dynamic
- Integrate content and affect
- Work toward the construction of a coherent narrative (body-play-language)
- Reframe cognitive distortion, correct faulty causal thinking and alleviate self-blame
- Follow the child through defense and co-regulate toward recovery (e.g. dissociation)

Understanding & Making Meaning of the Trauma



Children cannot initiate discussions of matters that overwhelm them. Adults can mistakenly reinforce the child's belief that the issue is too overwhelming to deal with by avoiding direct discussion.

A direct, open approach is most effective in providing the child with the opportunity to understand and make meaning of the trauma:

- “I know everything that has happened to you and I still like you”
- “You deserve to be cared for and treated well”

Technique



- Changing passive to active is an important transition
- Identification with the aggressor may in some cases need to proceed differentiation and individuation
- Destruction-repair play may emerge as an important theme
- Self-regulation can only be mastered by experiencing and practicing graded co-regulated recovery from deregulation

Self Awareness



- Attune to the somatic and sensory dimensions of transference and countertransference
- Use of self as a “new object”
- Affording corrective emotional experiences
- Attend to parallel process

Parent Sphere



- Partner with parents
- Start where they are-follow their lead
- Support their own treatment, connect them with resources (health care, local/state protective services, mental health services, educational services)
- Support social networking
- Be generous with your empathy and respect
- Be fully available
- Recognize and manage the inevitable vicissitudes of transference and countertransference
- Nurture “mentalization”
- Sustain a climate of hope



The Sphere

Think of specific way you will:

- Create a safe space
- Hold primary caregivers in-mind
- Daily routine- support “confident expectation”
- Endorse primary caregiving and constant caregiver model
- Have consistent expectations for classroom code of conduct
- Attend to transitions
- Mediate social interaction
- Use bibliotherapy
- Choose toys mindfully

Interventions across spheres



Listening, talking and coping across spheres

- Give permission to tell to appropriate people in appropriate places
- CO-regulate-provide, support, structure, soothing and reassurance
- Help identify feelings
- Be honest-reality test and serve as an “auxiliary ego”
- Communicate clearly, concretely using telegraphic speech
- Alleviate self-blame, faulty causality, cognitive distortions
- Expect behavioral manifestations
- Provide “time-in”
- Set limits but tolerate regression-it may be an opportunity to undo and redo in the “service of the ego”

Interventions across spheres

continued



- Healing takes time
- Let children know what they CAN do
- Provide latitude within limits
- Reward positive behaviors
- Displacement –don't take something away without offering an alternative
- Planned ignoring
- Natural consequences in graded doses
- Anticipate-plan what you might do if....
- Repair and reconnect-teach how to “make-up”

Common factors:



- Structuring is proactive, positive action
 - To prevent problems
 - Insure success.
- Traumatized children need:
 - A Trusted Adult to Protect Them
 - A Safe Environment
 - A Predictable Environment
 - A Patterned Environment
- New development occurs only when the child feels safe and secure.
- Consistency=Predictability=Security

(Landreth, 2002)

Key features to understand:



- Passing the child's "tests" – remaining firm & caring in the face of challenging behavior
- Showing the child that caring adults can listen to them, validate their experience and understand their feelings
- Take the time for activities with the child that build skills and confidence, fostering relationships, growth and development
- Showing the child that a caring adult dares to deal with a frightened child, with strength & perseverance
- Reuniting with the child after discipline, including teaching a lesson with logical consequences

Interventions



Helpers

- Acknowledge the work is demanding and stressful
- Get peer support
- Get reflective supervision
- Find self care and stress management strategies that work for you
- Partner with administration-create a climate of respect
- Mentoring and continuing education

References



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