

## Early Brain Development and Responsive Relationships



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## Learning objectives

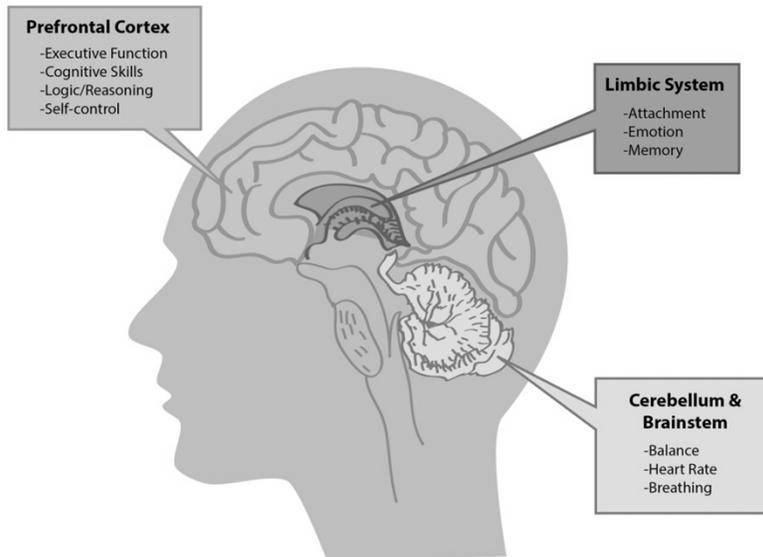
- ◆ To understand brain area and functions
- ◆ To develop strategies to use with families to promote healthy brain development
- ◆ To identify different types of stress and their associated impact on child and adult outcomes
- ◆ To explore ways responsive relationships support early brain development

## Early Brain Development and Strategies to Promote Integration

### Environment of relationships

- ◆ Early relationships are at the center of children's early experiences
- ◆ The infant's brain gets shaped through their interactions with those who care for them
- ◆ It is through back and forth interactions with caregivers that the infant brain develops
- ◆ The brain is a **social organ**

## Brain Areas and Functions



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## Brain in the Palm of your Hand



## Executive Function – Our Air Traffic Control Center



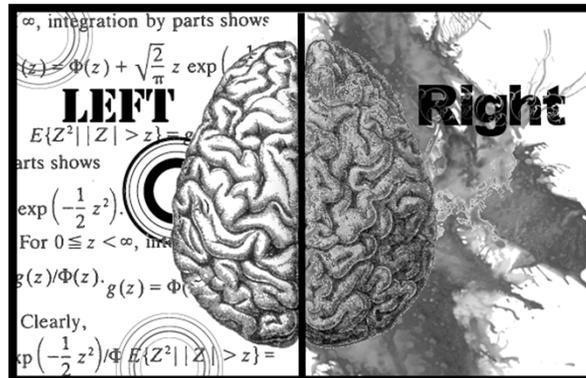
## Connected or Disconnected?

✦Connected	✦Disconnected
<ul style="list-style-type: none"><li>✦ Prefrontal cortex is connected to the limbic system and brainstem</li></ul>	<ul style="list-style-type: none"><li>✦ Prefrontal cortex is disconnected from limbic system and brainstem</li></ul>
<p><b>✦What does this look like behaviorally?</b></p>	<p><b>✦What does this look like behaviorally?</b></p>
<ul style="list-style-type: none"><li>✦ Regulated state</li><li>✦ Connected to others and self</li><li>✦ Cool, calm, collected</li></ul>	<ul style="list-style-type: none"><li>✦ Dysregulated state</li><li>✦ Disconnected from others and self</li><li>✦ Tantrums, feeling out of control</li></ul>

## Left Brain – Right Brain

### Left Brain

Verbal  
Analytical  
Explicit  
Concrete  
Linear



### Right Brain

Non-verbal  
Emotional  
Intuitive  
Holistic  
Symbolic  
Social

Source: Heather Clemons Photography: <http://heatherclemons.com>

## Strategies to promote brain integration

### ◆ Integrating the upstairs and downstairs brain:

- ◆ Engage, don't enrage
- ✦ Offer a proactive plan rather than saying "no"
- ◆ Use it or lose it
- ✦ Support children in making decisions
- ◆ Move it or lose it
- ✦ Move to help child focus on a request or task

### ◆ Integrate the left and right brain:

- ◆ Connect, then re-direct
  - ✦ Connect with the emotional brain before jumping into problem solving
- ◆ Name it to tame it
  - ✦ Naming the emotion to help calm the limbic brain

Strategies from Daniel Siegel's - *The Whole Brain Child*

## Move it or lose it

- PITC IT Learning and Dev Disc 2 – Title 10

## Think, Pair, Share: Finding your voice

- ◆ Choose one strategy to promote brain integration and write down some key points
- ◆ Share with a partner as if you are talking with a parent or colleague
- ◆ Large group reflection

## Linking the PITC Institute Sessions to Head Start Program Performance Standards

**Performance Standards**, title 45, Code of Federal Regulation

- ◆ 1306.33(b)(1) The purpose of the home visit is to help parents improve their parenting skills and to assist them in the use of the home as the child's primary learning environment. The visitor must work with parents to help them provide learning opportunities that enhance their child's growth and development.

## What about the Role of Stress?

THE IMPORTANCE OF EARLY RELATIONSHIPS

## Toxic Stress Derails Healthy Development



## Relationships Buffer Stressful Experiences for Young Children

- ◆ With the support of caring adults, and in the context of warm, supportive relationships, children can manage stressful experiences
- ◆ Supportive relationships with caring adults often buffer stressful experiences and allow the brain to recover from any potentially damaging effects



National Scientific Council on the Developing Child (2005). Working Paper #3. Excessive Stress Disrupts the Architecture of the Brain.

## How do you know when an infant or toddler might be experiencing stress or dysregulation?

- ◆ Has difficulty paying attention or taking in subtle cues
- ◆ Displays physiological changes (e.g., changes in breathing and skin color, hiccupping, or sweating)
- ◆ Motor movements become less steady/smooth
- ◆ Demonstrates difficulty engaging in social interactions

*Refer to Handout: "Taking a Closer Look" Question #2*

## Types of Stress

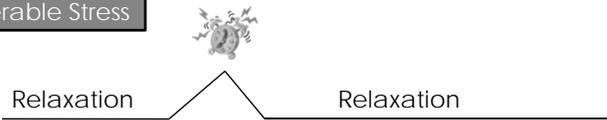
- ◆ Positive Stress
- ◆ Tolerable Stress
- ◆ Toxic Stress



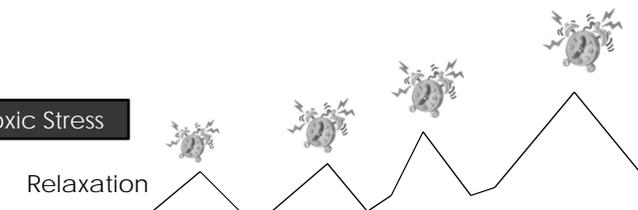
National Scientific Council on the Developing Child (2005). Working Paper #3. Excessive Stress Disrupts the Architecture of the Brain.

## Tolerable and Toxic Stress

### Tolerable Stress



### Toxic Stress

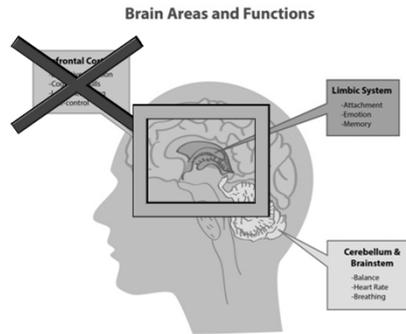


Toxic stress = ↑ Cortisol

- ◆ Reduction in number of synaptic connections
- ◆ Brain cell death
  - ✦ Specifically in areas of hippocampus (related to memory)
- ◆ Impairment of selective attention and thinking
- ◆ More anxious behavior

## Brain areas activated in response to stress

Prefrontal cortex disengaged



Fight or Flight System activated

## Adverse Early Childhood Experiences (ACEs) that last a lifetime

- ◆ Abuse (physical, emotional, sexual)
  - ◆ Neglect
  - ◆ Substance use at home
  - ◆ Chronically depressed parent at home
  - ◆ Witnessing DV or IPV
- 
- ◆ Depression
  - ◆ Post-traumatic stress disorders
  - ◆ Alcoholism/alcohol abuse
  - ◆ Risk for IPV
  - ◆ Poor health (COPD, IHD, Obesity)

ACES Study: Felletti, 1998

## How do we protect against transmission of ACEs from one generation to the next?

- ◆ We provide home visiting services that focus on:
  - ✦ Mitigating families experiences of toxic stress
  - ✦ Supporting parents and children to cope with tolerable stress
  - ✦ Supporting staff in their daily work with families who are experiencing tolerable and toxic stress

## Small Group Activity

1. How can we help to mitigate families experiences of **toxic stress**?
2. How can we support families to cope with **tolerable stress**?
3. What are ways to support staff in their daily work with families in their daily work with families who are experiencing **tolerable or toxic stress**?



## Supporting Early Brain Development through Responsive Relationships

### What do responsive relationships look like?

- ◆ The adult focuses on a way of being with the child that:
  - ✦ Fosters moments of shared attention with the child
  - ✦ Allows time and space for child to be a part of the problem-solving process
  - ✦ Engages the child in learning and meaningful experiences
  - ✦ Communicates respectfully during interactions with the child

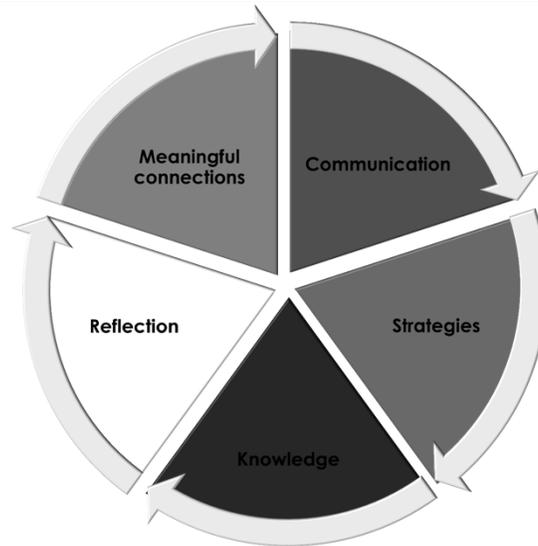
## Responsive relationships

- ◆ What does responsiveness look like in this video?
  - ◆ Interactions
  - ◆ Communication
  - ◆ Responses
- ◆ Video: CA I/T Learning and Development Foundations - Birth to 4 months

## How do we support parents in their efforts to be responsive?

- ◆ Develop meaningful relationships
- ◆ Cultivate reflective capacity
- ◆ Practice effective ways of communicating
- ◆ Provide effective strategies for engaging children
- ◆ Build knowledge of brain development

## Responsive Parenting



Supporting the Development of  
Self-Control

## Why is self-control important?

- ◆ Self-control is a skill that children need to succeed academically, socially, and emotionally
- ◆ Self-control helps children to:
  - ✦ Wait for a turn
  - ✦ Shift attention to a new topic or request
  - ✦ Control impulsive reactions
- ◆ Regions of the brain (prefrontal cortex) essential to self-control develop during childhood and in relational interactions with others

Taurillo, A. R., Obradovic, J., & Gunnar, M. R. (2009, Jan.). Self-control and the developing brain. *Zero to Three*, 31-37.

## Factors that inhibit the development of self-control

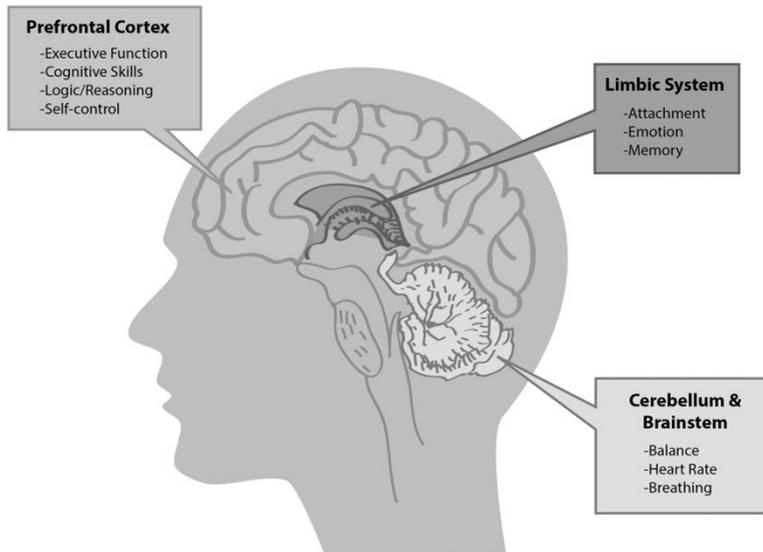
- ◆ Exposure to alcohol or other drugs during prenatal development
- ◆ Living with toxic stress

Taurillo, A. R., Obradovic, J., & Gunnar, M. R. (2009, Jan.). Self-control and the developing brain. *Zero to Three*, 31-37.

## Supporting the development of self-control strategies

- ◆ Responsive and sensitive interactions that support autonomy and decision making
- ◆ Talking about emotions (your child's and your own)
- ◆ Reminders of expectations and rules
- ◆ Maintain predictable routines
- ◆ Engage in playing games that incorporate turn taking
- ◆ Provide opportunities for children to make choices

### Brain Areas and Functions



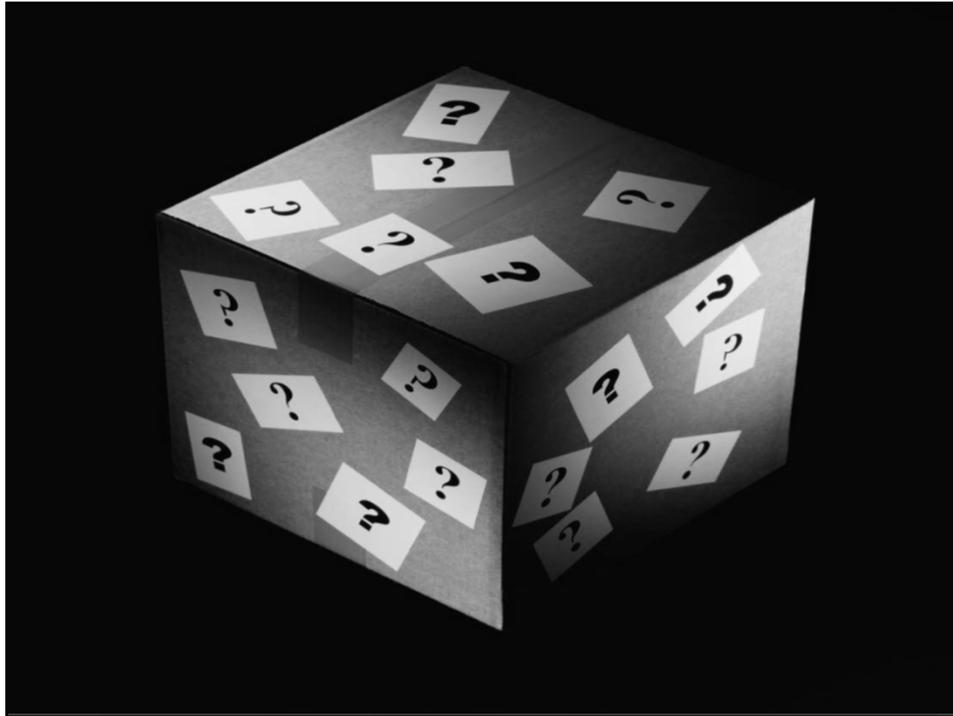
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## Mirror Neurons



## Developing an Action Plan

- ◆ Take a moment to jot down ideas you have learned from our talk today on the Developing an Action Plan handout in your binder.
- ◆ How will the information on early brain development and responsive care influence your work with families?
- ◆ List ideas that you wish to share with colleagues.
- ◆ State one thing you will do next week in your work as a home visitor/supervisor that you learned from our discussion.



**Thank You!**



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Region X Head Start  
TTA Centers

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