Building Better Brains: The Core Story of Early Brain and Child Development (EBCD)

Material developed by the Early Brain and Child Development Leadership Workgroup
A program of the American Academy of Pediatrics
Objectives

• To highlight the importance of Early Brain & Child Development (EBCD)
• To review what influences shape the developing brain
• To discuss what we can do to promote optimal early brain development
Our Agenda:

“It’s all about nurturing relationships.
Early relationships build
their brains and our future.”
“Change the First Five Years and You Change Everything”

http://www.youtube.com/watch?v=GbSp88PBe9E
Why is EBCD Important?

• Before the age of 5, it takes less time, intensity and repetition to organize the developing neural systems than it does to reorganize already-developed neural systems
• What happens early affects all aspects of a child’s development
• First 1,000 days of life have a profound impact on brain development
• Nurturing relationships in the early years are critical
• Toxic stress has a negative impact on a child’s development
• Early interventions are critical for optimal life course outcomes

Source: Center on the Developing Child at Harvard University
Why Early Experiences Matter

Newborn Brain Average Weight
333 grams

2 Year Old’s Brain Average Weight
999 grams

Brain photo courtesy IsaacMao, Flickr
Born with lifetime supply of neurons

Synapses form based on early experiences

Mind is fine tuned to the world children inhabit

Birth

3 Years

15 Years
The Biology of Health

The architecture of the brain depends on the mutual influences of the following:

- Genetics
- Environment
- Experience

The Foundations of Health

• Stable and responsive environment and relationships
• Safe and supportive physical, chemical and built environments
• Appropriate nutrition

Source: Center on the Developing Child at Harvard University
Stable and Responsive Environments

• Provide consistent, nurturing and protective interactions with adults
• Positive relationships can serve as social-emotional buffers

Source: Center on the Developing Child at Harvard University
Safe and Supportive Physical Environments

- Safe places to learn
- Places free of toxins
- Places that support families

Source: Center on the Developing Child at Harvard University
What shapes the developing brain?
Shaping the Capacity of the Brain

• The interactive influences of genes and experiences shape the architecture of the developing brain

• Brains are built from the bottom up
Early Stress

Chronic “fight or flight;” ↑ cortisol / norepinephrine

Changes in Brain Architecture

Hyper-responsive stress response; calm/coping

CHILDHOOD STRESS
Early Stress

Source: Bruce Perry, MD, PhD, Child Trauma Academy
Development results from an on-going, re-iterative, and cumulative dance between nurture and nature.

**Experience**
Protective and Personal (versus Insecure and Impersonal)

**Brain Development**
Alterations in Brain Structure and Function

**Epigenetic Changes**
Alterations in the Way the Genetic Program is Read

**Behavior**
Adaptive or Healthy Coping Skills (vs. Maladaptive or Unhealthy Coping)

Source: AAP: Helping Foster And Adoptive Families Cope with Trauma. 2013.
What can we do?

Nearly 90% of young children see a child health provider at least annually for a check-up, while less than 1/3 are in any child care setting, the next most common contact with a formal service system.

Source: Charles Bruner, writing in The Colorado Trust’s Issue Brief: Connecting Health and School Readiness, February 2009
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Take Home Messages

First 1000 days are not so much about what to DO ...

Not ordering a specific methylation test
Not giving a specific standardized screen
Not referring to a specific resource
(although all of these may be appropriate)

...More about what to SEE!
Developing a Shared “VISION”

Toxic Stress

It’s like a snake!

It’s like a straw fan!

It’s like a tree trunk!
Take Home Messages

This is not to say that if bad things happen there are necessarily long term negatives.
Take Home Messages

• Change the LENS we use to PRIORITIZE how we use our limited time with families:
  – Use an ecobiodevelopmental framework
  – Understand life-course theory and developmental trajectories
  – Know the biological threats to healthy life courses
  – Identify/address environmental risks early
  – Whenever possible, proactively build wellness
Promote the Five R’s of Early Childhood Education

• **Reading** together as a daily family activity
• **Rhyming**, playing, talking, singing and cuddling together often
• **Routines** and regular times for meals, play and sleeping, which help children know what they can expect and what is expected of them
• **Rewards** for everyday successes, realizing that praise from those closest to a child is a very potent reward
• **Relationships** that are reciprocal, nurturing and enduring are the foundation of healthy child development
It is easier to **build strong children** than to **repair** **broken men**.

Frederick Douglass