



Understanding Toxic Stress in Young Children

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Objectives

- To highlight the importance of Early Brain & Child Development (EBCD)
- To review what shapes the developing brain
- To discuss what we can do to promote the best early brain development

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





Our Agenda:



“It’s all about nurturing relationships. Early relationships build their brains and our future.”





Why is EBCD Important?

- Before the age of 5, it takes less time, intensity and repetition to shape the developing brain than it does to reshape developed brains
- What happens early affects all parts of a child's development
- First 1,000 days of life have a strong impact on brain development
- Supportive relationships in the early years are critical
- Toxic stress has a negative impact on a child's development
- Stopping toxic stress early is important for the best 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





Brain Development Timeline

Born with lifetime supply of brain cells

Birth

Connections between brain cells form based on early experiences

3 Years

Mind is fine tuned to the world children live in

15 Years





The Science of Health

The structure of the brain depends on the effects of the following:

- Genetics
- Environment
- Experience



Source: National Scientific Council on the Developing Child, *Working Paper 5, The Timing and Quality of Early Experiences Combine to Shape Brain Architecture*. Center on the Developing Child at Harvard University.





The Basics of Health

- Stable and responsive surroundings and relationships
- Safe & supportive physical, chemical and built environments
- Good nutrition

Source: Center on the Developing Child at Harvard University





Stable & Responsive Surroundings

- Provide reliable, supportive, and safe connections with adults
- Positive relationships can make negative experiences easier

Source: Center on the Developing Child at Harvard University





Safe & Supportive Physical Environments

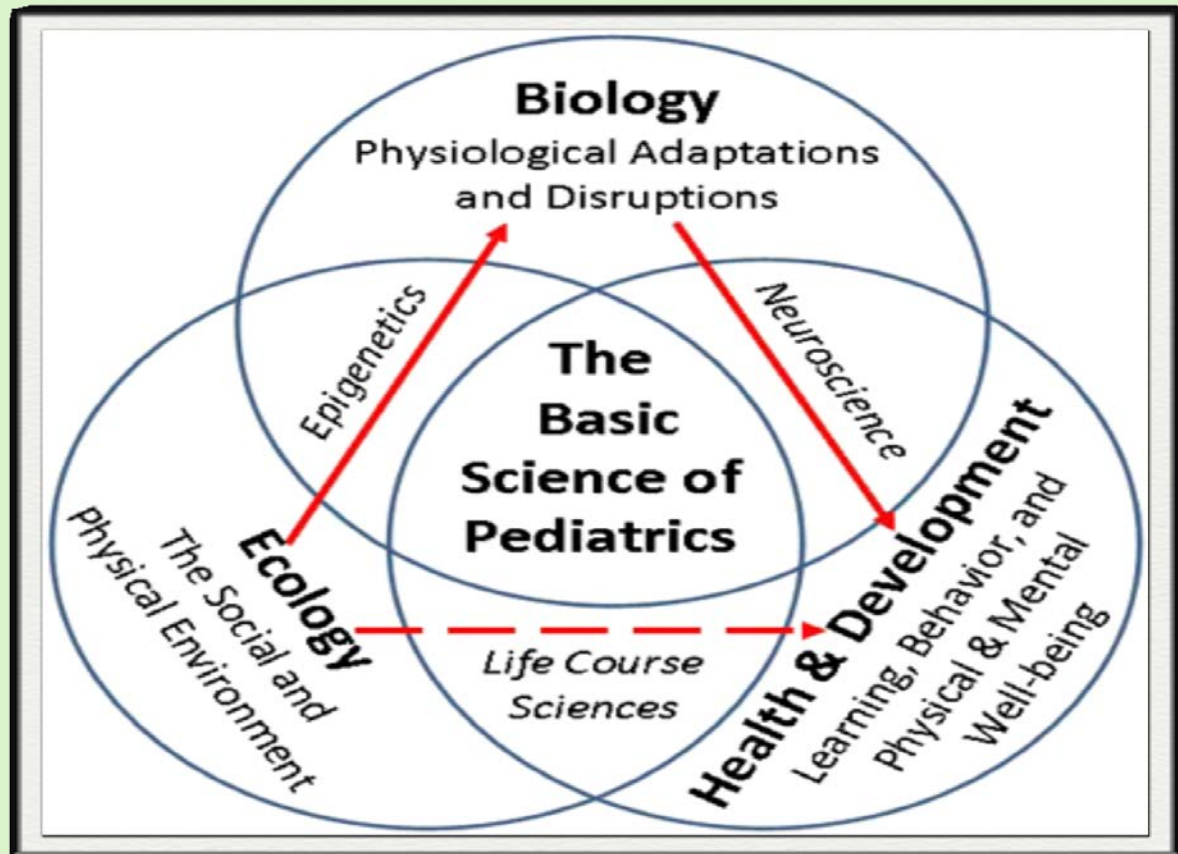
- Safe places to learn
- Places free of toxins
- Places that support families



Source: Center on the Developing Child at Harvard University



What Shapes the Developing Brain?





Shaping the Capacity of the Brain

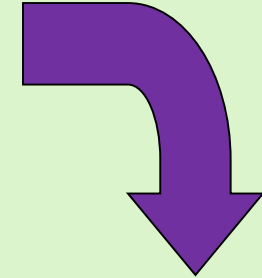
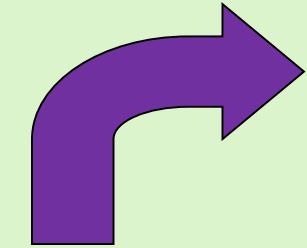
- The interaction between genes and experiences shape the structure of the developing brain
- Brains are built from the bottom up





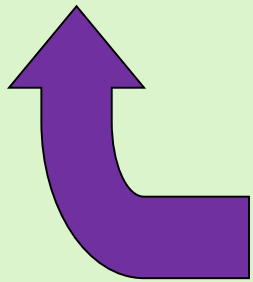
Early Stress

CHILDHOOD STRESS

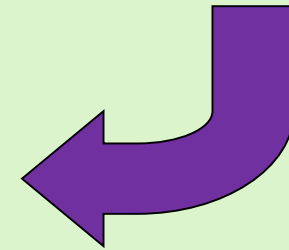


**Hyper-responsive
stress response;
↓ calm/coping**

**Chronic “fight or
flight;” ↑ cortisol/
norepinephrine**



**Changes in Brain
Structure**





Early Stress

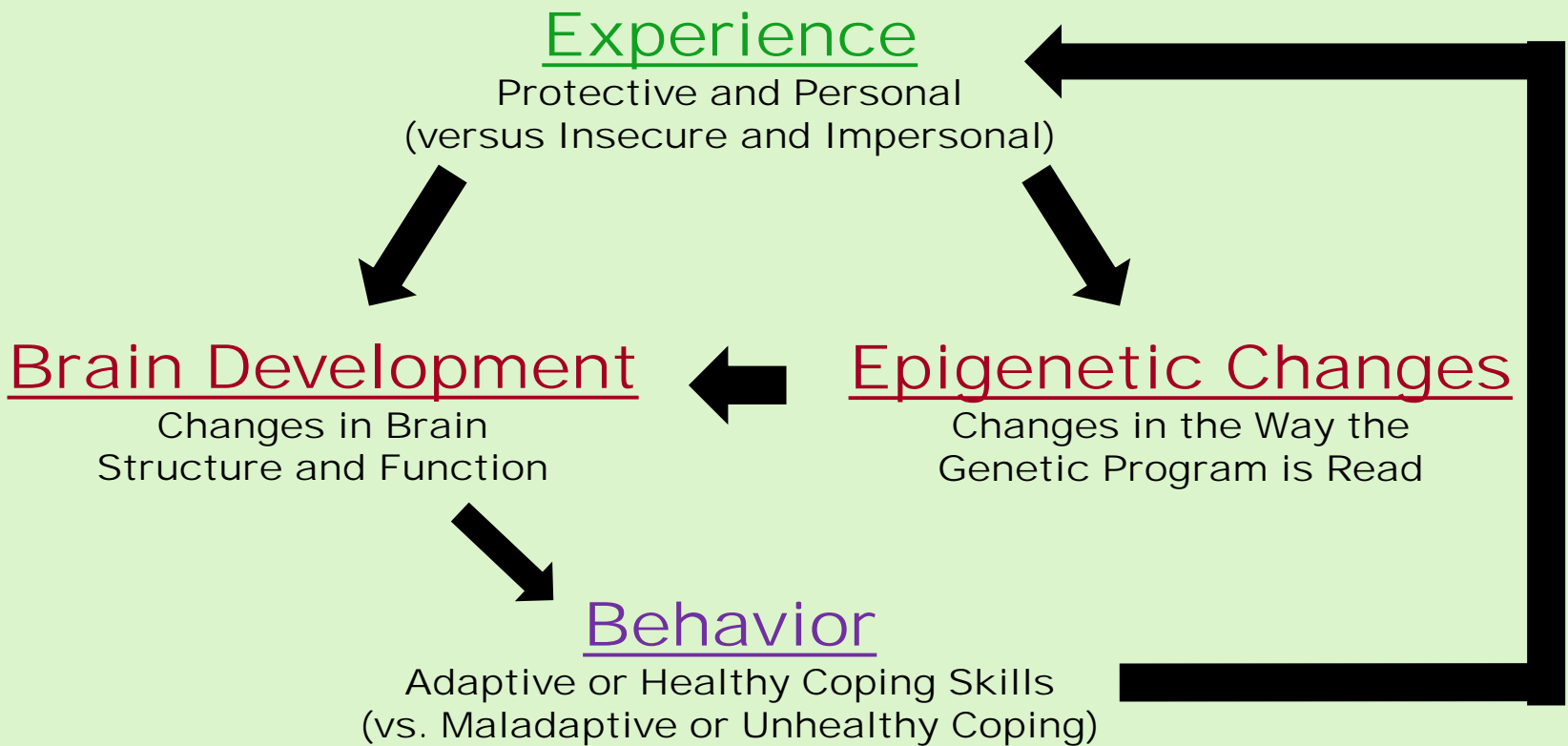


Source: Bruce Perry, MD, PhD, Child Trauma Academy





Development results from an on-going dance between nurture and nature



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 every year 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





Recommendations for Preventive Pediatric Health Care

Bright Futures/American Academy of Pediatrics

AGE ¹	INFANCY								EARLY CHILDHOOD						
	PRENATAL ²	NEWBORN ³	3-5 d ⁴	By 1 mo	2 mo	4 mo	6 mo	9 mo	12 m	15 mo	18 mo	24 mo	30 mo	3 y	4 y
HISTORY															
Initial/Interval	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MEASUREMENTS															
Length/Height and Weight		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Head Circumference		●	●	●	●	●	●	●	●	●	●	●			
Weight for Length		●	●	●	●	●	●	●	●	●	●	●			
Body Mass Index												●	●	●	●
Blood Pressure ⁵		★	★	★	★	★	★	★	★	★	★	★	★	●	●
SENSORY SCREENING															
Vision		★	★	★	★	★	★	★	★	★	★	★	★	● ⁶	●
Hearing		● ⁷	★	★	★	★	★	★	★	★	★	★	★	★	●
DEVELOPMENTAL/BEHAVIORAL ASSESSMENT															
Developmental Screening ⁸								●			●		●		
Autism Screening ⁹											●	●			
Developmental Surveillance ⁸		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Psychosocial/Behavioral Assessment		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Alcohol and Drug Use Assessment															
PHYSICAL EXAMINATION¹⁰		●	●	●	●	●	●	●	●	●	●	●	●	●	●
PROCEDURES¹¹															
Newborn Metabolic/Hemoglobin Screening ¹²		←	●	→											
Immunization ¹³		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Hematocrit or Hemoglobin ¹⁴						★			●		★	★		★	★
Lead Screening ¹⁵								★	★	●or★ ¹⁴	★	●or★ ¹⁴		★	★
Tuberculin Test ¹⁷				★			★	★	★		★	★		★	★
Dyslipidemia Screening ¹⁸												★			★
STI Screening ¹⁹															
Cervical Dysplasia Screening ²⁰															
ORAL HEALTH²¹							★	★	●or★ ²¹		●or★ ²¹	●or★ ²¹	●or★ ²¹	● ²²	
ANTICIPATORY GUIDANCE²³	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●





Take Home Messages

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

...It's more about what to **SEE!**



Developing a Shared “VISION”



It's like a
snake!

It's like a
tree trunk!

It's like a
straw fan!



Take Home Messages

This is not to say that if bad things happen there are always long-term negatives.





Promote the 5 R's of Early Childhood Education

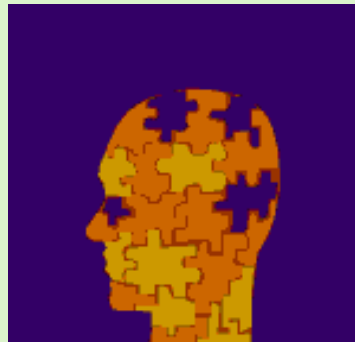
- **Reading** together as a daily family activity
- **Rhyming**, playing, talking, singing & cuddling together often
- **Routines** & regular times for meals, play & sleeping, which help child know what they can expect and what is expected of them
- **Rewards** for everyday successes, realizing that praise from those closest to a child is a very potent reward
- **Relationships** that are giving, supportive & constant are the foundation of healthy child development





It is easier to **build strong children**
than to **repair broken men.**

Frederick Douglass





“Change the First Five Years and You Change Everything”



<http://www.youtube.com/watch?v=GbSp88PBe9E>





Questions??



Contact Information

Healthy Child Care America, Child Care & Health Partnership:

Web site: www.healthychildcare.org

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AAP Early Education and Child Care





THANK YOU!

- Now Available: **Preventing and Managing Infectious Diseases in Early Education and Child Care** Online Learning Module
- Now Available: **Medication Administration in Early Education and Child Care** Online Learning Module
Available in English and Spanish

<http://www.healthychildcare.org/HealthyFutures.html>

