

**BETTER TOGETHER:  
PROMOTING INFANT AND EARLY  
CHILDHOOD MENTAL HEALTH  
THROUGH MULTI-SECTOR EFFORTS**



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**Invest in Children Annual Meeting 11/15/22**



Cuyahoga County  
**Together We Thrive**

**Invest in Children**

# OBJECTIVES

- **What is Infant and Early Childhood Mental Health?**
- **Key Developmental Competencies from Birth-3 years**
  - Early brain development
  - Early relational health and infant/toddler-parent attachment
- **Impact of Adversity and Trauma from Birth-3 years**
- **Return on Investment**
  - For children and families
  - For society
- **Implications for Policy and Programs**



## WHAT IS INFANT AND EARLY CHILDHOOD MENTAL HEALTH?

- **Infant mental health (IMH)** is “the optimal social, emotional, and cognitive well-being of children ages 0-3, developed by secure and stable relationships with nurturing caregivers.” (Alliance for the Advancement of Infant Mental Health, 2016)



Alliance for the Advancement of  
Infant Mental Health

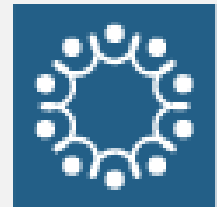
## WHAT IS INFANT AND EARLY CHILDHOOD MENTAL HEALTH?

- **Infant and early childhood mental health (IECMH)** is “the developing capacity of the child from birth to 5 years old to form close and secure adult and peer relationships; experience, manage and express a full range of emotions; and explore the environment and learn--all within the context of family, culture, and community.” (Zero to Three, 2018)



## EARLY RELATIONAL HEALTH

- **Early Relational Health (ERH)** rests on the premise that “healthy and positive child development emerges best in the context of nurturing, warm, and responsive early parent/caregiver child relationships, when children are surrounded by safe communities with strong trust and social connectedness”



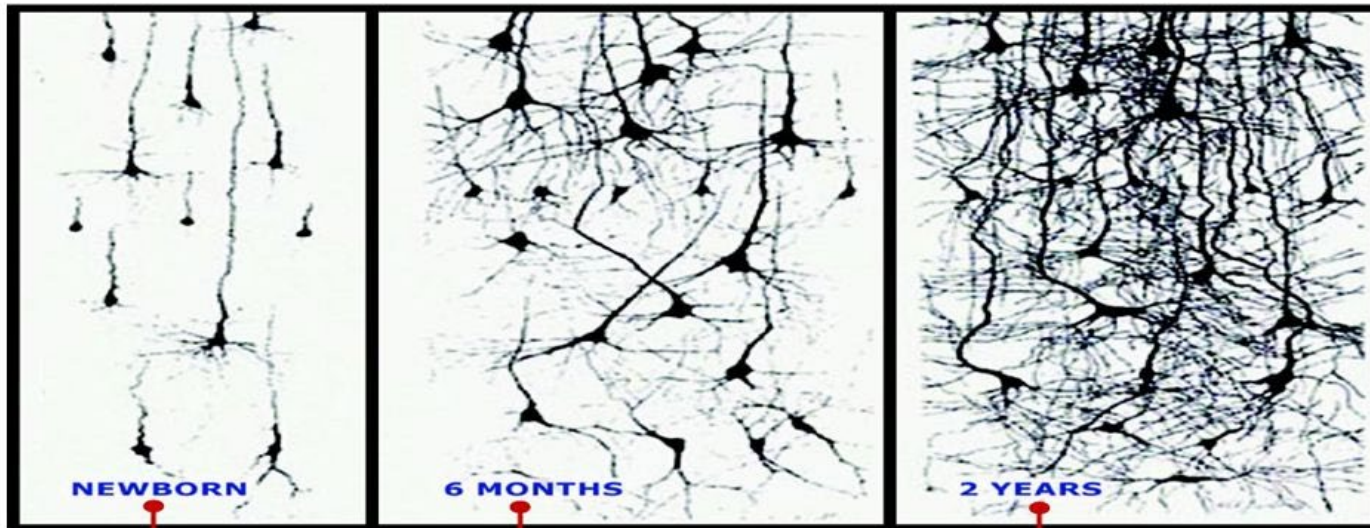
**Center for the  
Study of Social Policy**  
Ideas into Action

# KEY DEVELOPMENTAL COMPETENCIES

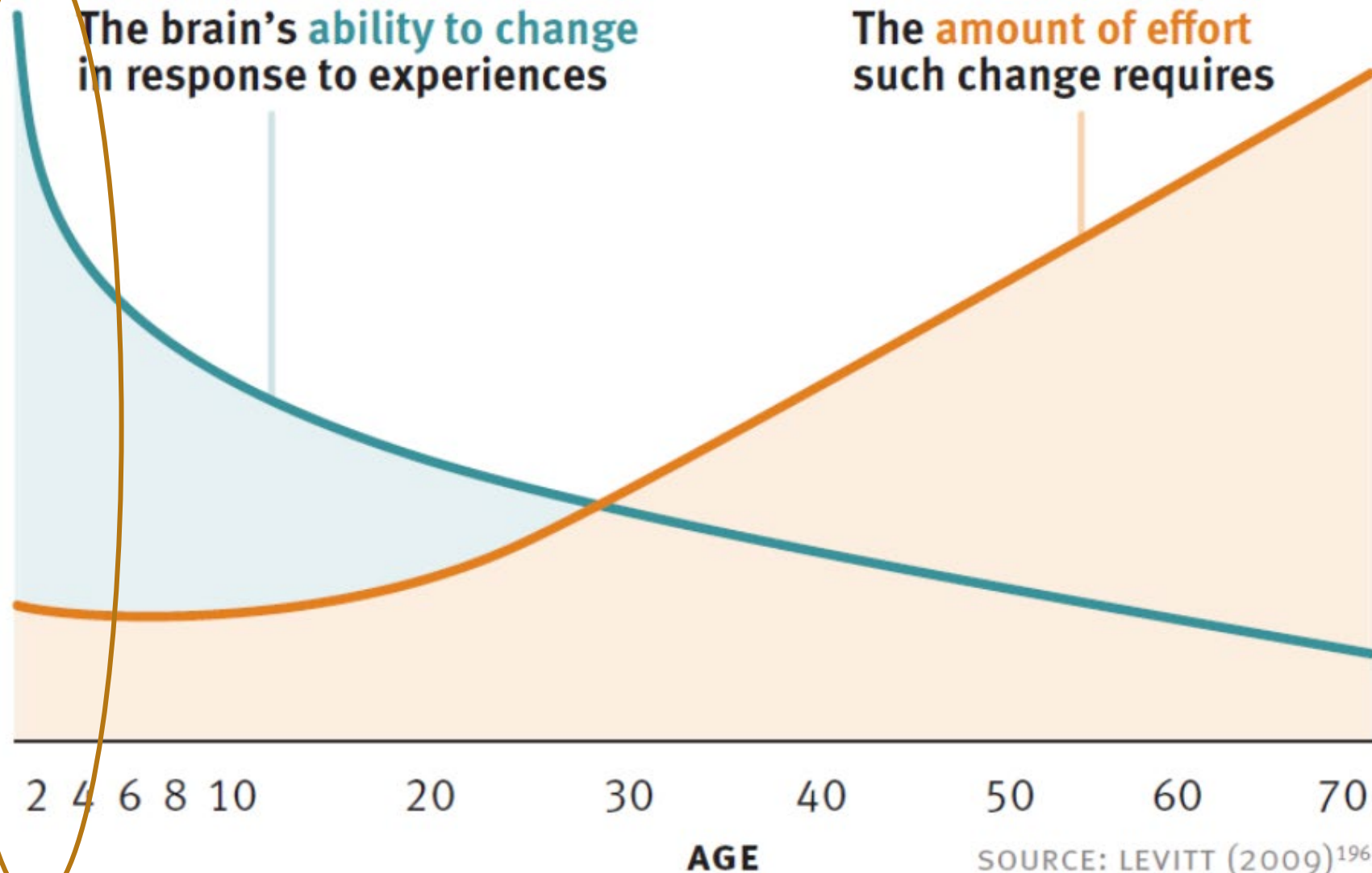


# BRAIN DEVELOPMENT DURING INFANCY AND TODDLERHOOD

**700** 700 NEW NEURAL CONNECTIONS PER SECOND



- Massive neural connections every second
  - As of 2017, **1 million** is **new estimate!**
- Early experiences affect **brain architecture**
- “Plasticity” of the brain is greatest early in life



As shown by this conceptual graph, drawn from multiple studies on humans and animals, the brain's plasticity is strongest in the first few years after birth. Thus, it is easier and less costly to form strong brain circuits during the early years than it is to intervene or "fix" them later.



## WHAT IS A 'SENSITIVE PERIOD'?

- A *sensitive period* of development is defined as a specific time during which development is more open to influence than at other times
- **The most profound sensitive period for brain development is prenatal to 3 years of age**

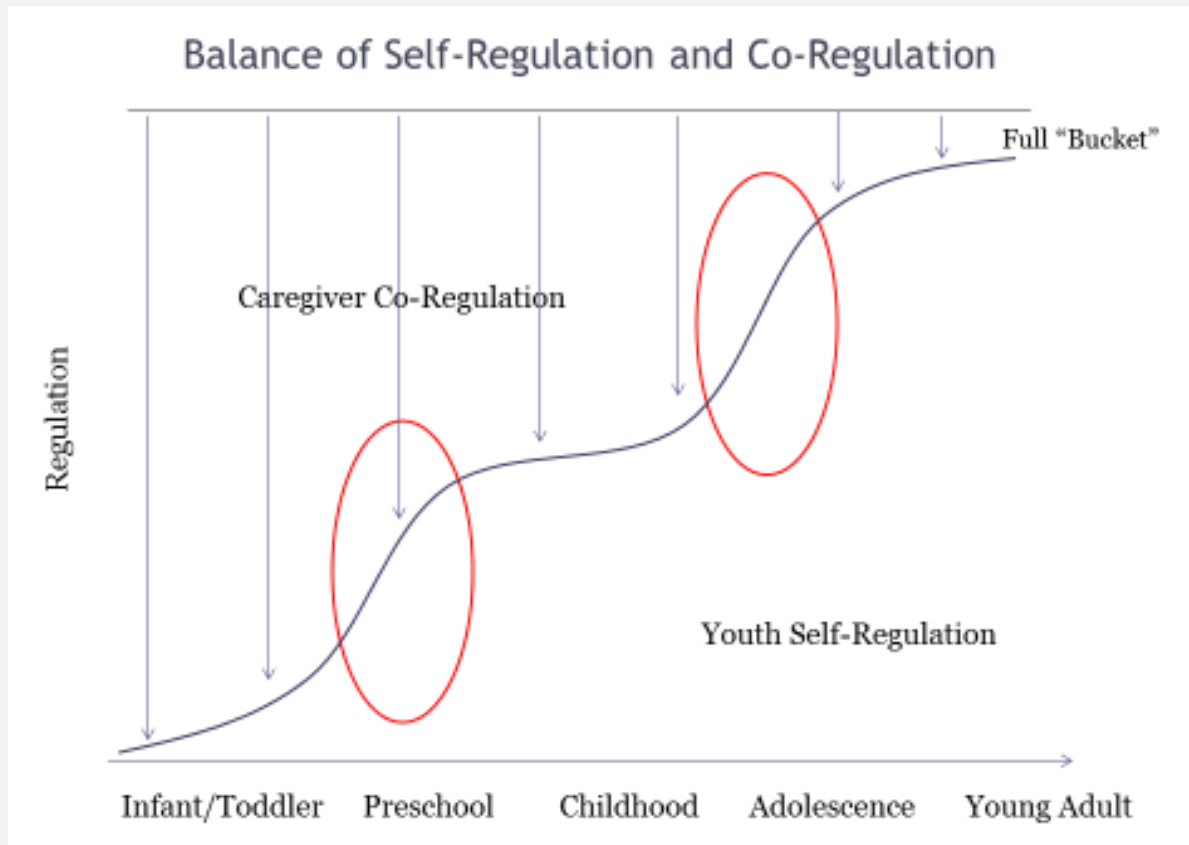
# RELATIONSHIPS MATTER

(FOR BETTER OR FOR WORSE)

One of the strongest environmental influences on early brain development is the quality of relationship between caregivers and child



# THE CAREGIVING ENVIRONMENT



- Self-regulation starts with co-regulation
- Thus, **the early caregiving environment is critical for the child's foundation of relational and emotional health**
- Over time, self-regulation develops

# STAGES OF ATTACHMENT

1. Pre-attachment



Birth to  
6 weeks

2. Attachment-in-the-making



6 weeks to  
6-8 months

3. Clear-cut attachment



6-8 months to  
18-24 months

4. Goal-corrected partnership



24 months on



## SECURE ATTACHMENT

- **Secure attachment** = the child can trust the caregiver to consistently be there at times of stress to comfort, support, and protect them; this is referred to as “*felt security*”
- **Young children with a secure attachment tend to:**
  - Cry less and can be soothed more easily
  - Are more friendly and cooperative
  - Learn better/more easily through play/exploration
  - Feel happier and less sad or scared
  - Make friends more easily
  - Are more ready for school
  - Have less mental health problems later in life
  - Show more positive, supportive parenting to their own children



# CHECK IN!!

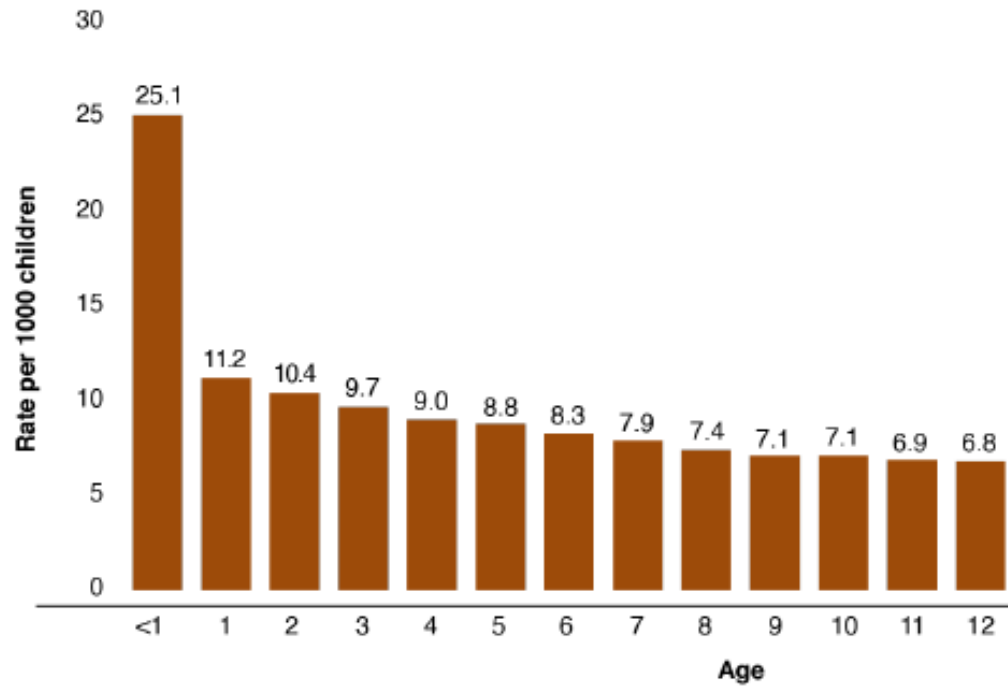


- The earliest years of life create a foundation for the rest of development
- Relational experiences are likely the most powerful drivers of development in these years
- The earliest years of life are also particularly sensitive to input and influence (open, malleable...)
- Key developmental outcomes include:
  - Strong and healthy neurodevelopment, brain architecture
  - “Felt security” with at least one primary caregiver

# ADVERSITY AND TRAUMA IN THE EARLIEST YEARS

## Exhibit 3–D Victims by Age, 2020

*The youngest children are the most vulnerable to maltreatment*

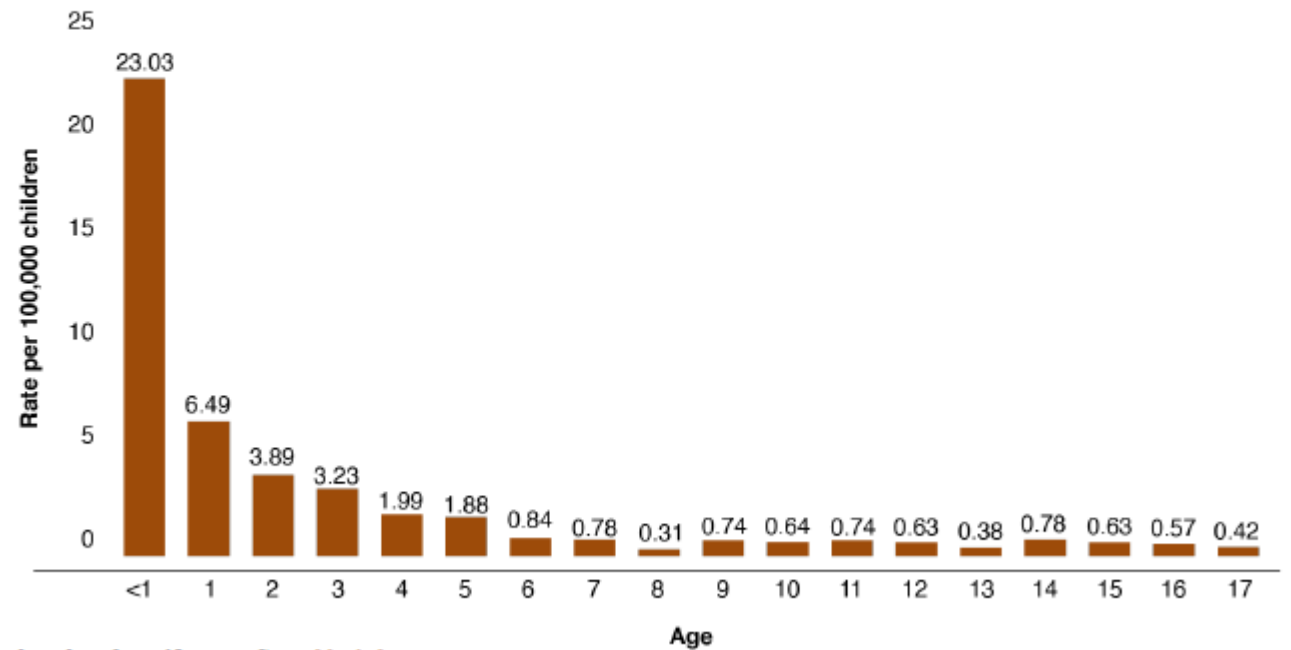


Based on data from 52 states. See [table 3–6](#).



## Exhibit 4–B Child Fatalities by Age, 2020

*Children <1 year old died from abuse and neglect at more than three times the rate of children who were 1 year old.*



Based on data from 45 states. See [table 4–3](#).



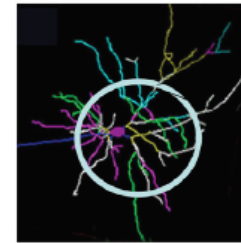
# TRAUMA DURING INFANCY/ TODDLERHOOD



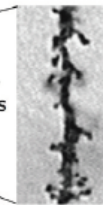
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HARVARD UNIVERSITY

## Persistent Stress Changes Brain Architecture

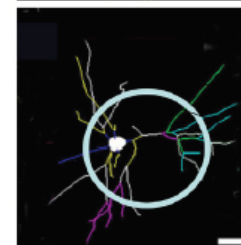
Normal



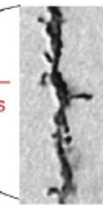
Typical neuron—  
many connections



Toxic  
stress



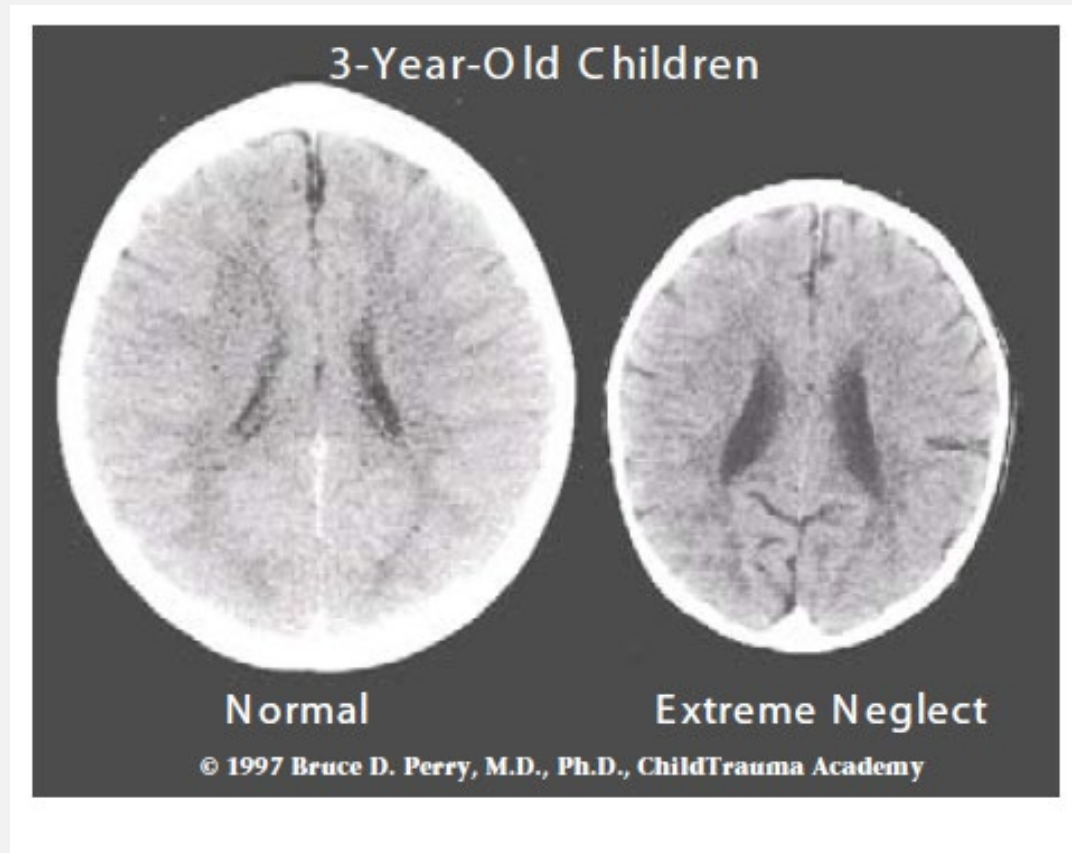
Damaged neuron—  
fewer connections



Prefrontal Cortex and  
Hippocampus

Sources: Radley et al. (2004)  
Bock et al. (2005)

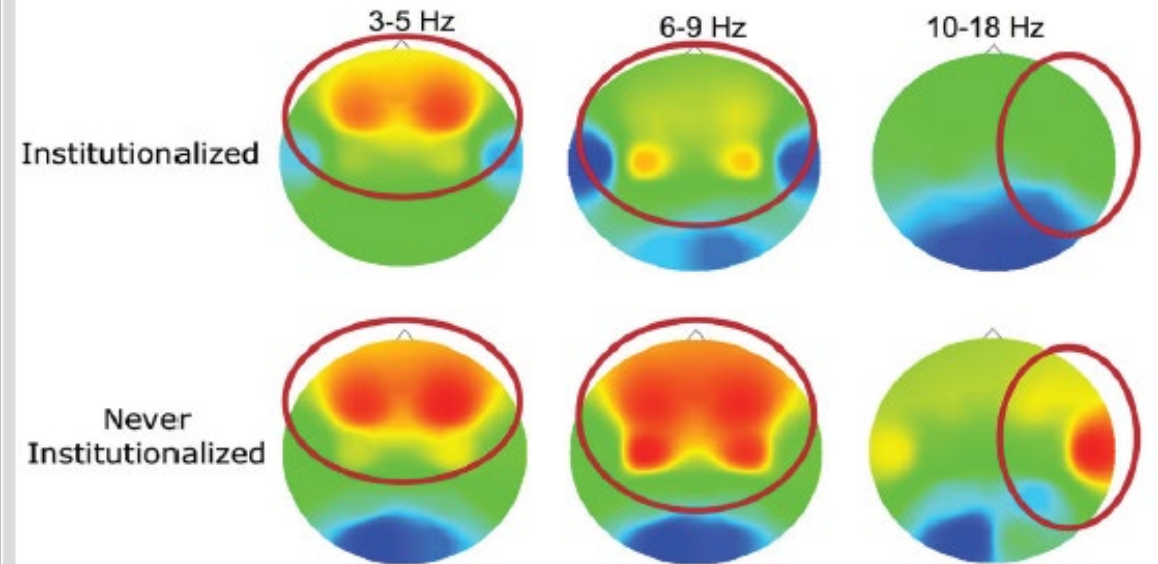
# TRAUMA DURING INFANCY/TODDLERHOOD



# TRAUMA DURING INFANCY/ TODDLERHOOD

NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD

## Extreme Neglect Diminishes Brain Power



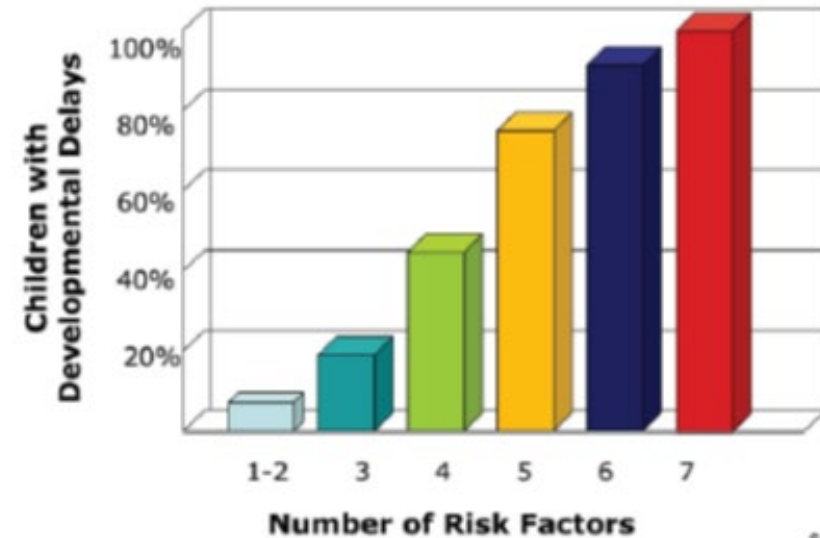
Source: C. A. Nelson (2008); Marshall, Fox, & the BEIP Core Group (2004).

# TRAUMA DURING INFANCY/ TODDLERHOOD



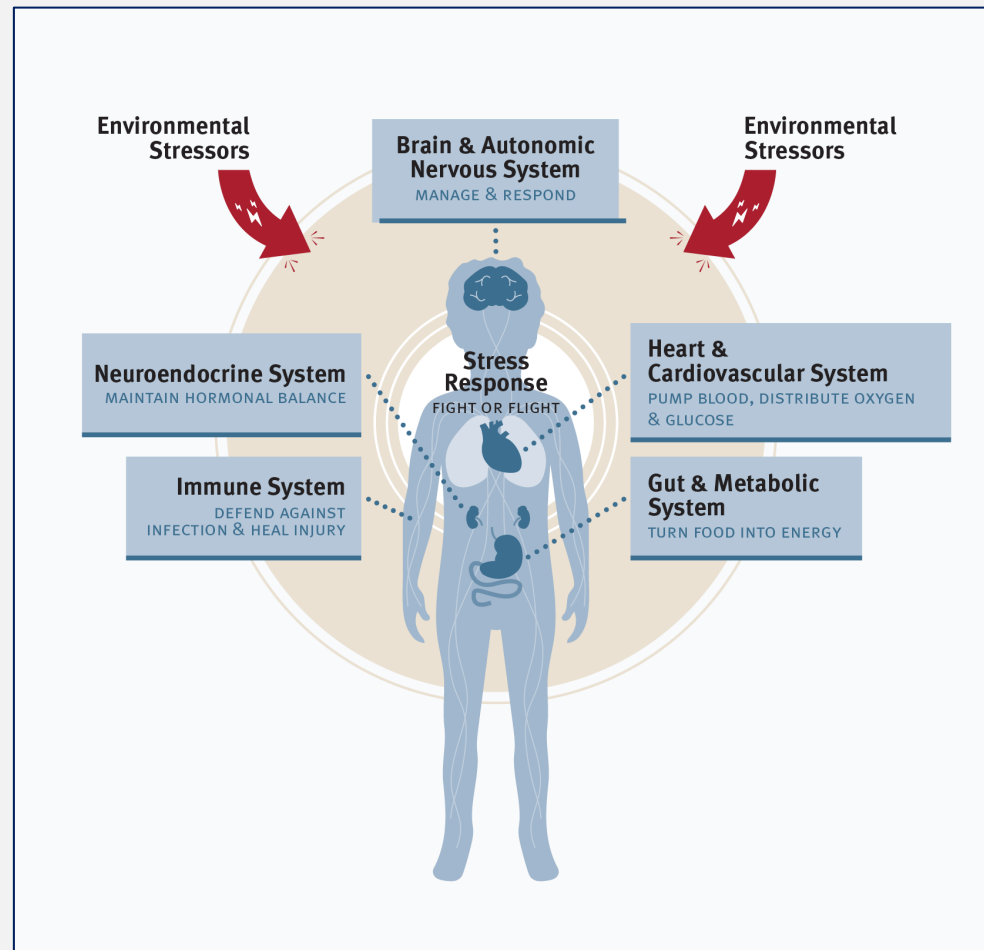
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## Significant Adversity Impairs Development in the First Three Years



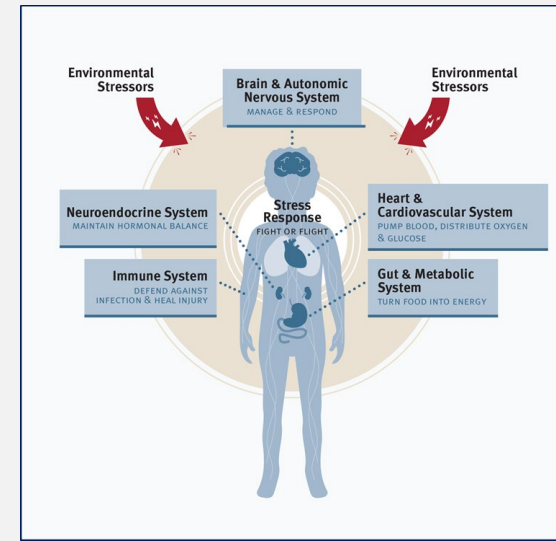
Source: Barth et al. (2008)

# EARLY LIFE STRESS IMPACTS MULTIPLE BIOLOGICAL SYSTEMS



# WHAT IS 'TOXIC STRESS'?

- When trauma/stress/adversity is unrelenting, these systems are chronically activated, leading to:
  - Flooding of stress hormones and chemicals
  - 'wear and tear' on body organs and systems
  - Increased inflammatory response
  - Changes in gene expression
  - Accelerated biological 'aging'



### Childhood psychosocial adversity

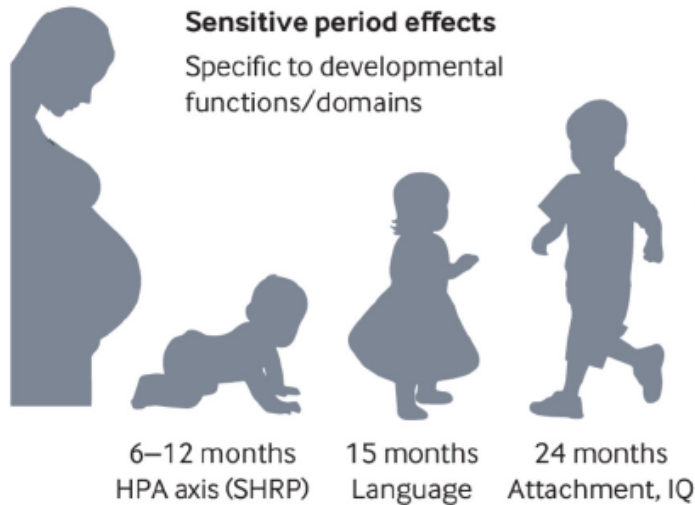
- Care environment mediates stress
- Prenatal maternal stress, depression
- Postnatal caregiver unavailability/absence (mental illness, substance abuse, death)
- Depriving environments (eg institutional care)
- Child abuse or neglect

### Biological change

### Adult outcomes

### Sensitive period effects

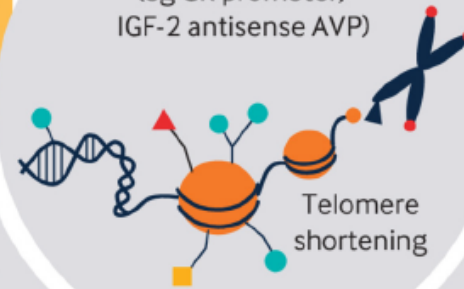
Specific to developmental functions/domains



### Epigenetic changes

Genetic endowment  
Genetic variants alter susceptibility to adversity  
• eg 5-HTTLPR, BDNF, FKBP<sub>s</sub>, MAOA poly-morphisms

DNA methylation (eg GR promoter, IGF-2 antisense AVP)



Developmental trajectory  
• Biological change is embedded in behaviour (e.g. substance use, exercise, diet, stress management)

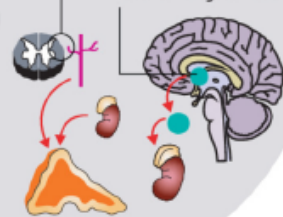
- Reduced volume of key regions
- Neurotransmitter changes
- Altered functional activity, tract connectivity

Neurodevelopmental disruption

Inflammation



Altered HPA and sympatho-medullary axes



Reprogramming of stress and immune regulatory systems

Increased risk of:

- Cognitive deficits
- Disease
- Psychopathology
- Social problems, (unemployment, incarceration)

Fig 2 | Some of the pathways that mediate exposure to early adversity and adult outcomes. Exposure to adversity early in life interacts with a child's genetic endowment (eg variations in genetic polymorphisms), which in turn leads to a host of biological changes across multiple levels. These changes, in turn, influence adult outcomes (adapted from Berens et al<sup>23</sup>). HPA axis (SHRP)=hypothalamic pituitary adrenal axis (stress hyporesponsive period)



# INSECURE ATTACHMENT

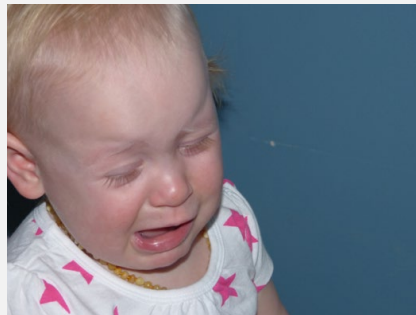
- 50+ years of research has helped us understand how the parent-infant relationship influences development and life course



Avoidant



- Higher levels of **internalizing and externalizing problems** including disruptive behaviors, conduct, etc
- Dismissive, disconnected relationships



Ambivalent-Resistant



- Higher levels of **anxiety-related disorders**, e.g., separation anxiety
- Anxious attachment with friends and romantic partners



Disorganized



- **Highest internalizing & externalizing problems**
- **Difficulties learning**
- **Serious relationship and MH problems**
- **Risk for maltreatment in next gen**





INSECURE ATTACHMENT  $\neq$  ATTACHMENT DISORDER

INSECURE ATTACHMENT  $\neq$  ALWAYS BAD OUTCOMES

## CHECK IN!!



- Stress, adversity, and trauma during the earliest years of life pose a **significant threat to a child's healthy brain development**, more so than at other times during the life
- Early exposures, especially if chronic, also may lead to toxic stress and **long-term effects** on social-emotional, cognitive, and physical health into adulthood (and next gen!)
- **Other signs of IECMH concerns** may be insecure attachments, difficulties with emotional and behavioral regulation and exploration/learning\*

**THE GOOD NEWS:  
INVESTING IN THE EARLIEST YEARS  
HAS A HUGE RETURN!**



# RELATIONSHIPS CAN BUFFER STRESS

- One of the strongest building blocks of healthy development is:
  - Safe
  - Supportive
  - Nurturing
  - Responsive
  - Consistent
  - Predictable

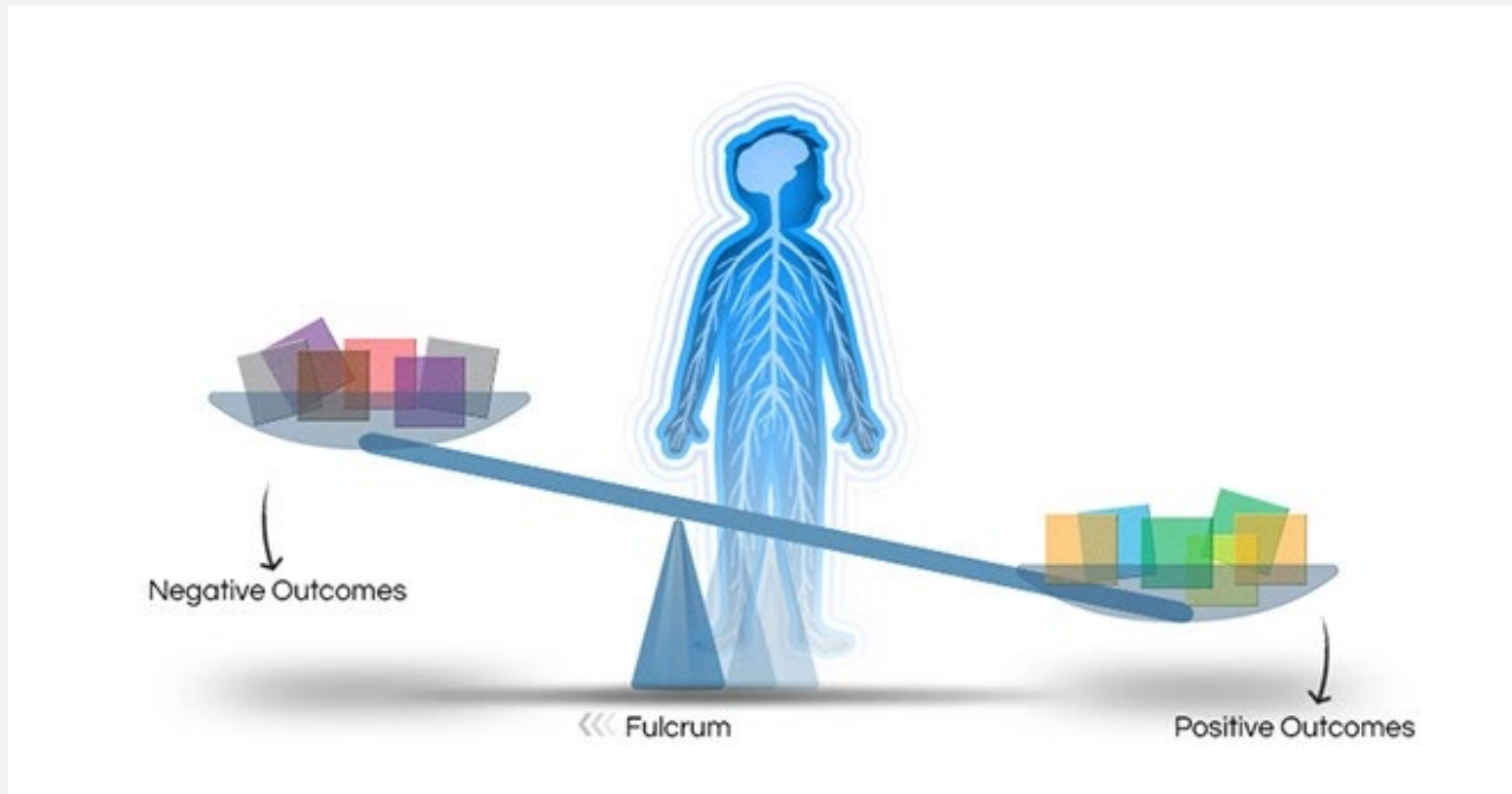


## RELATIONSHIPS

SAFE, SUPPORTIVE,  
NURTURING  
RELATIONSHIPS  
+  
INFANCY/  
TODDLERHOOD

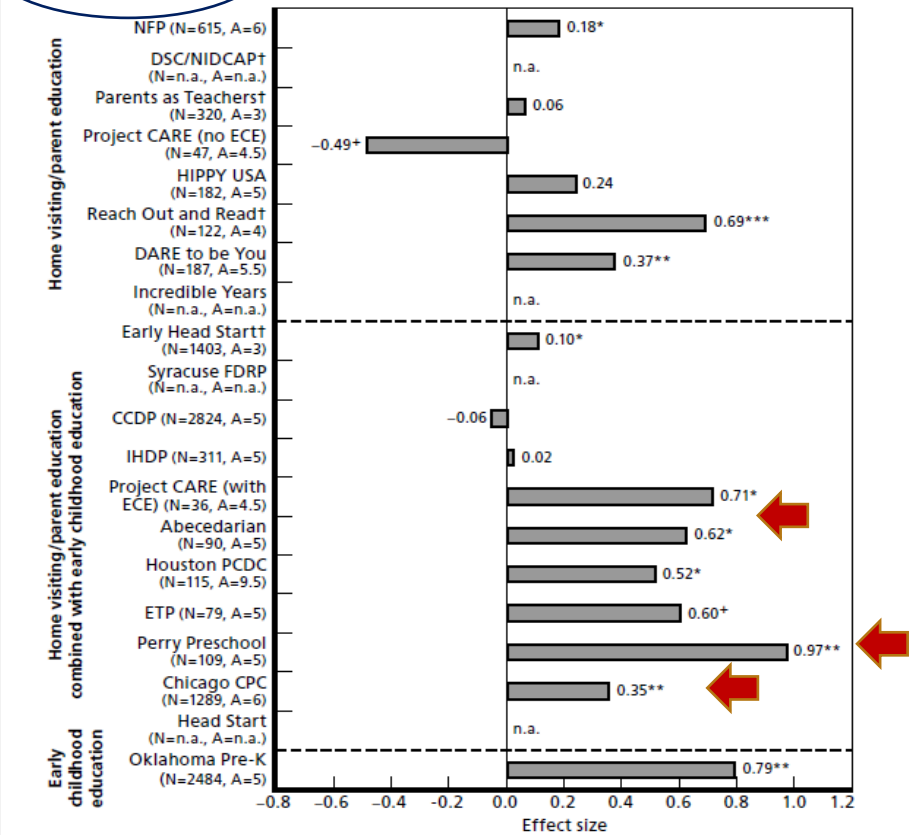


# POSITIVE CHILDHOOD EXPERIENCES (PCES)



# EXAMPLE: EFFECTS OF EARLY CHILDHOOD PROGRAMS

Figure 3.1  
Cognitive Outcome Effect Sizes Near or in Elementary School



## OTHER TREATMENT EFFECTS

- School Achievement (CPC program)
- Less Early Aggression (NFP)
- Life Skills Middle School (CPC)
- Grade Retention; Special Ed (Abecedarian, Perry, CPC)
- High School Completion (CPC)
- Less Adult Crime (Perry, CPC)
- Employment (Abecedarian, Perry)
- Fewer Adult Social Services (Perry)

# RETURN ON INVESTMENT OF HIGH QUALITY EARLY CHILDHOOD CARE/EDUCATION

## Health effects of Abecedarian intervention at age 35

	Treatment Mean	Control Mean	Treatment p-value
Systolic Blood Pressure	125.79	143.33	0.018
Diastolic Blood Pressure	78.53	92.00	0.024
Pre-Hypertension	0.68	0.78	0.235
Hypertension	0.10	0.44	0.011
HDL Cholesterol	53.21	42.00	0.067
Cholesterol/HDL-C	3.89	4.69	0.057
Abdominal Obesity	0.65	0.87	0.136
Metabolic Syndrome	0.00	0.25	0.009

Source: Campbell, Conti, Heckman, Moon, Pinto and Pungello (2012)



# RETURN ON INVESTMENT OF HIGH QUALITY EARLY CHILDHOOD CARE/EDUCATION



13%

VS  
7-10%

**HIGHER RETURNS THAN PRESCHOOL ALONE** Every dollar invested in high-quality birth-to-five early childhood education for disadvantaged children delivers a 13% annual return on investment, significantly higher than the 7-10% return delivered by preschool alone.

**THERE IS NO FADEOUT** Unlike other early childhood programs, ABC/CARE shows lasting gains in IQ. Lasting boosts in cognition and socio-emotional skills drive better education, health, social and economic outcomes.



- **Key Factors:**

- Start at birth,
- High quality (e.g., early learning, continuous care),
- Include health care access and good nutrition
- Serve low-income or disadvantaged children

- **Two Gen Benefits**

- Income and mobility for parents
- Enrichment for children

ECONOMIC RETURN OF  
HIGH QUALITY EARLY  
CHILDHOOD  
CARE/EDUCATION

“For the first time, we have experimental evidence about how a case of early childhood education propagates across generations.”  
—Prof. James Heckman

Compared to the children of control participants, children of parents who received early education intervention are:

17% 

less likely to have been suspended from school during K-12 education

11% 

more likely to be in good health through young adulthood

26% 

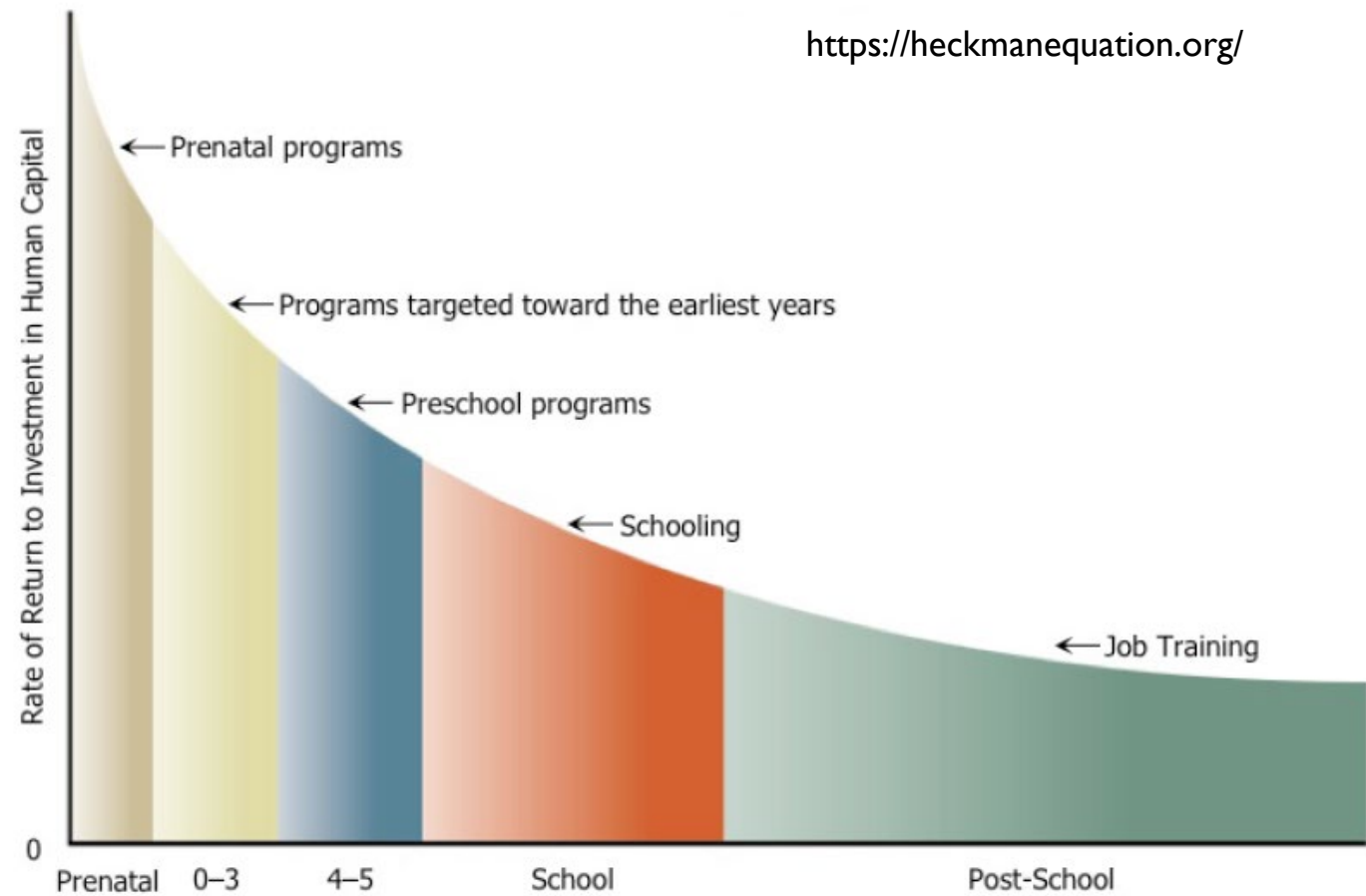
more likely to be employed

8% 

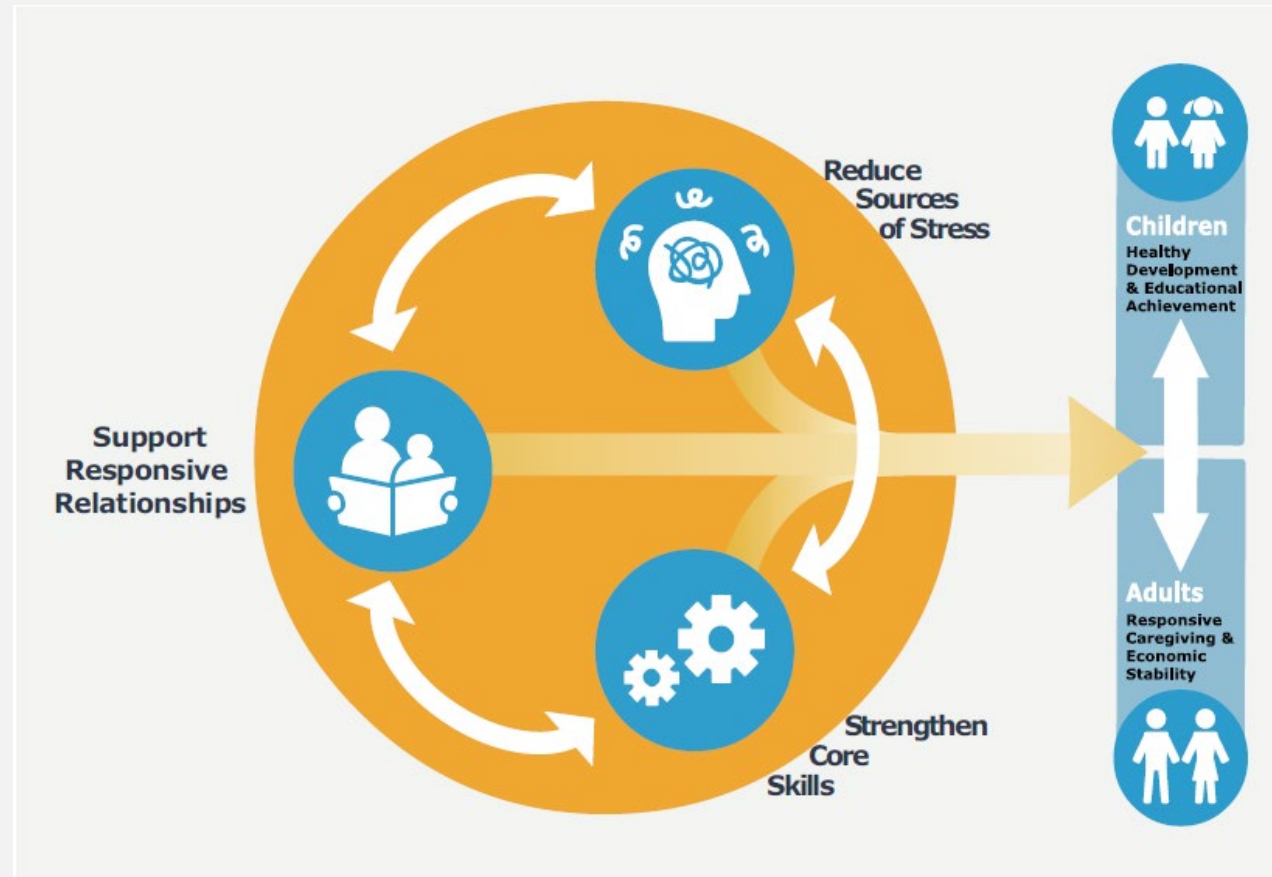
less likely to be divorced



# ECONOMIC RETURN ON INVESTMENT



THE SCIENCE OF EARLY  
DEVELOPMENT SHOULD  
INFORM POLICY &  
PRACTICE



INVEST EARLY!



WHAT ABOUT OHIO?

# IN 2021...

## Many of Ohio's children experience early adversity & trauma.

Ohio's rank compared to other states (and D.C.):

**39<sup>th</sup>**

out of 51

**ACEs:** Percent of children who have experienced two or more adverse experiences (2018-2019)

**32<sup>nd</sup>**

out of 51

**Adult Poverty:** Percent of people, ages 18 and older, in households with incomes below the federal poverty level (2019)

**28<sup>th</sup>**

out of 51

**Child Abuse & Neglect:** Number of reported and substantiated child maltreatment victims, per 1,000 children (FY 2018)

**36<sup>th</sup>**

out of 51

**Child Poverty:** Percent of people under age 18, in households with incomes below the federal poverty level (2019)

**41.2%** of Ohio children entered kindergarten demonstrating readiness in the 2019-2020 school year.

## Health & Healthcare Outcomes RANKS...

Infant Mortality:

**42<sup>nd</sup>**

out of 51

Low Birth Weight:

**31<sup>st</sup>**

out of 51

Prenatal care:

**25<sup>th</sup>**

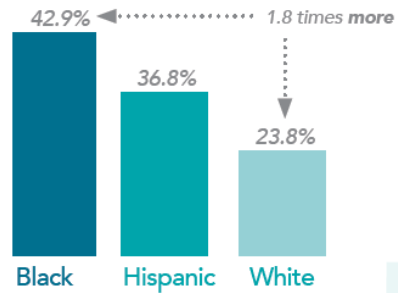
out of 51



# WIDE DISPARITIES BASED ON RACE

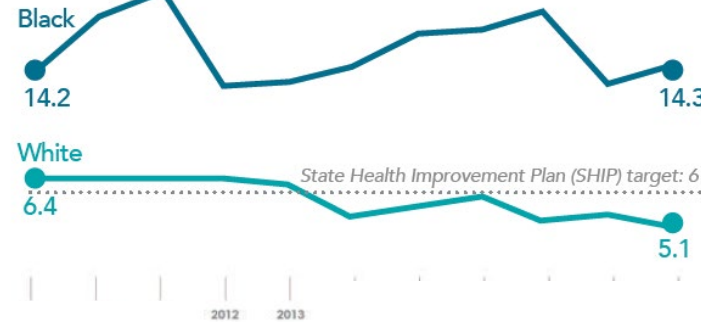
## Adverse Childhood Experiences:

% of Ohio children who experienced two or more ACEs Ohio, 2016-2019



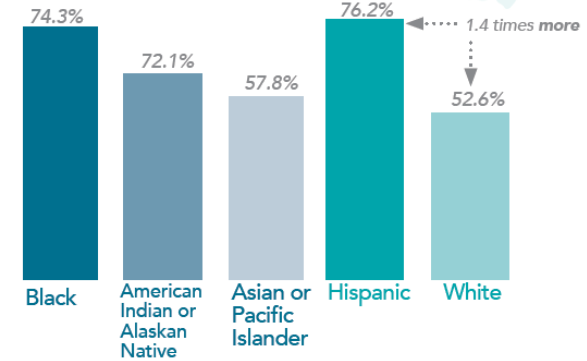
## Infant Mortality:

Ohio's Rate per 1,000 births, by race



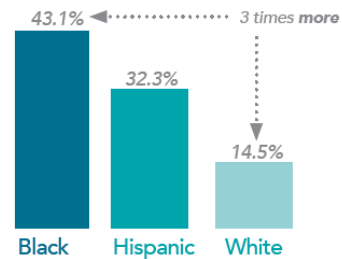
## Kindergarten Readiness:

% of Ohio kindergarteners not demonstrating readiness, 2019-2020



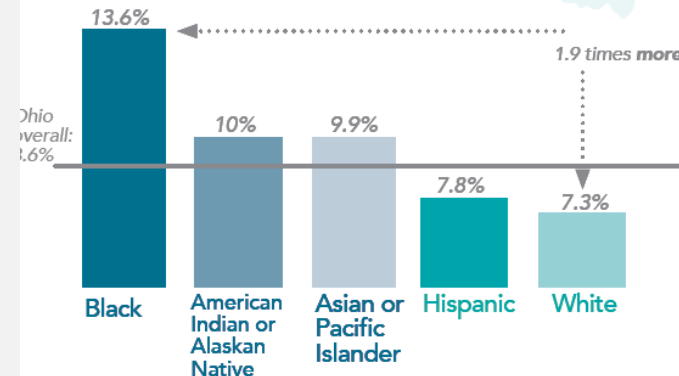
## Child Poverty:

% of Ohio children in a household with income below the federal poverty threshold, 2015-2019



## Low Birth Weight:

Ohio, 2019

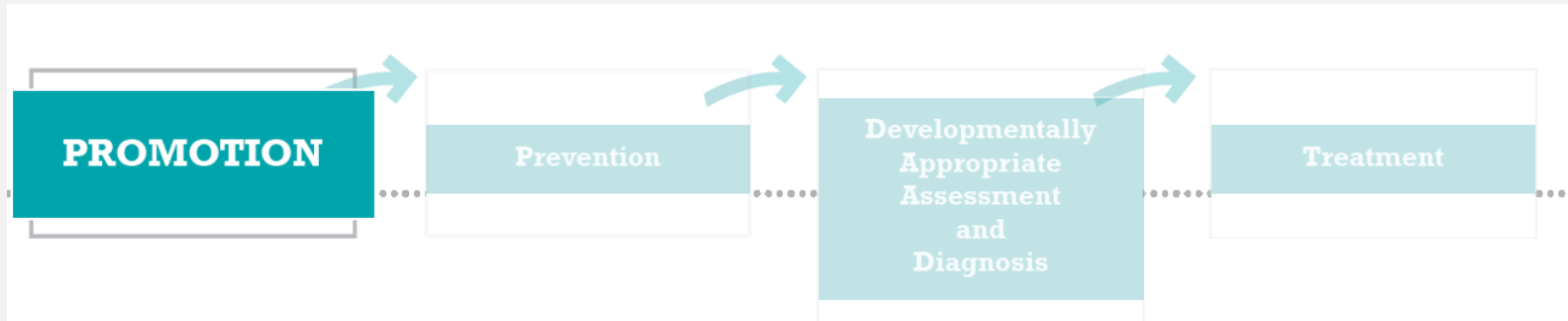


# CROSS-SECTOR SERVICES



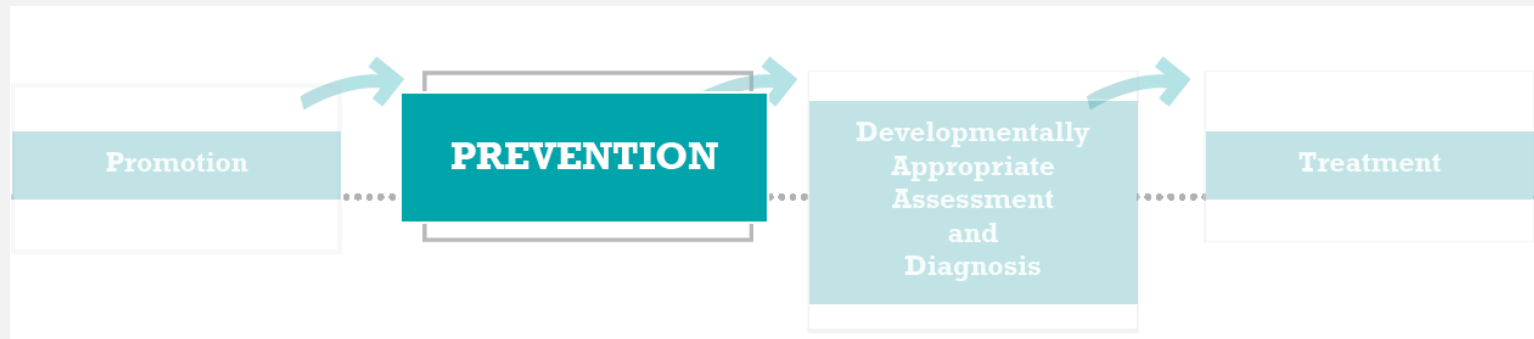


# CONTINUUM OF SERVICES



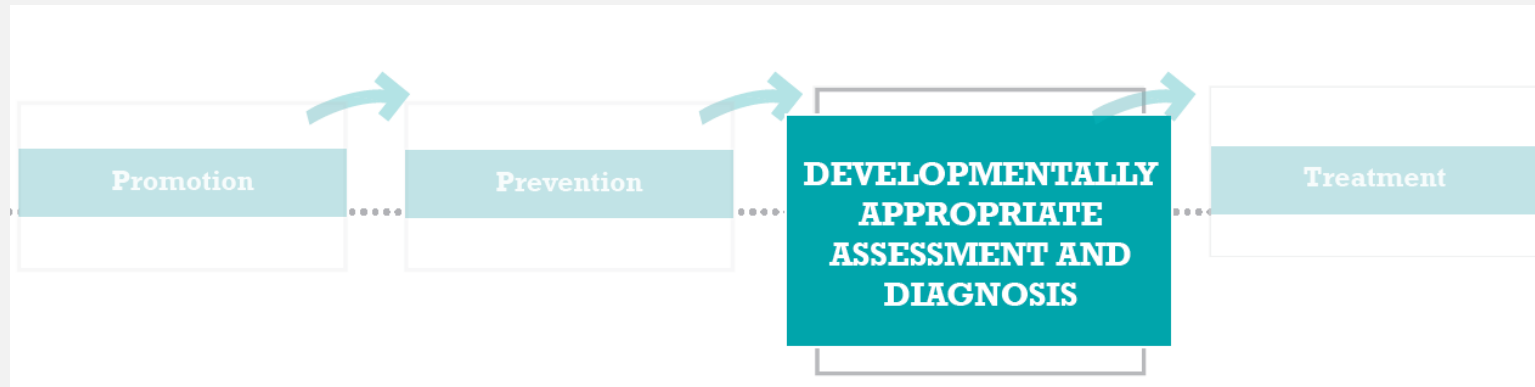
- BOLD beginning
- #OnOurSleeves
- Universal Triple P
- AIMHiOhio

# CONTINUUM OF SERVICES



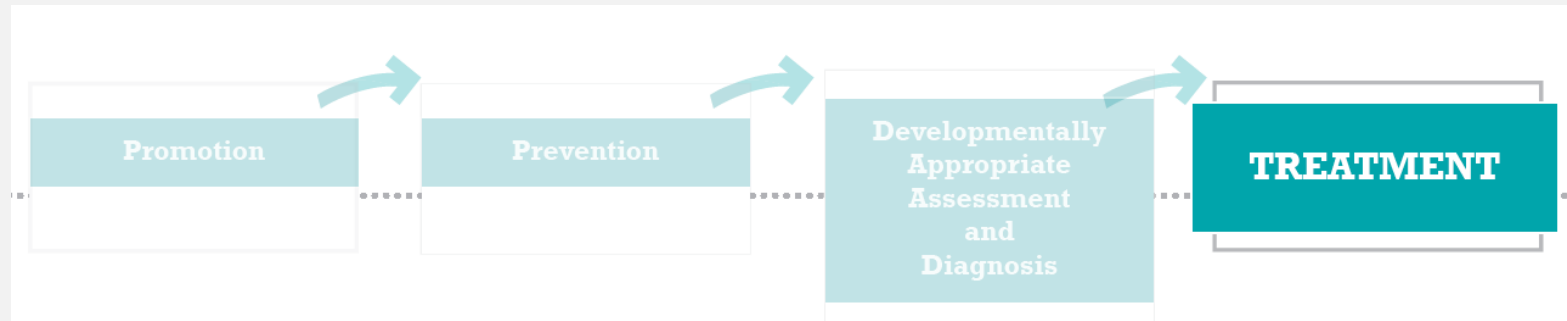
- Universal Screening in Pediatric Settings
- Prevention-Oriented Healthcare: For ex. HealthySteps
- Triple P Education
- Help Me Grow
- Quality Child Care
- Preschool Expulsion
- Safe Babies Court Teams

# CONTINUUM OF SERVICES



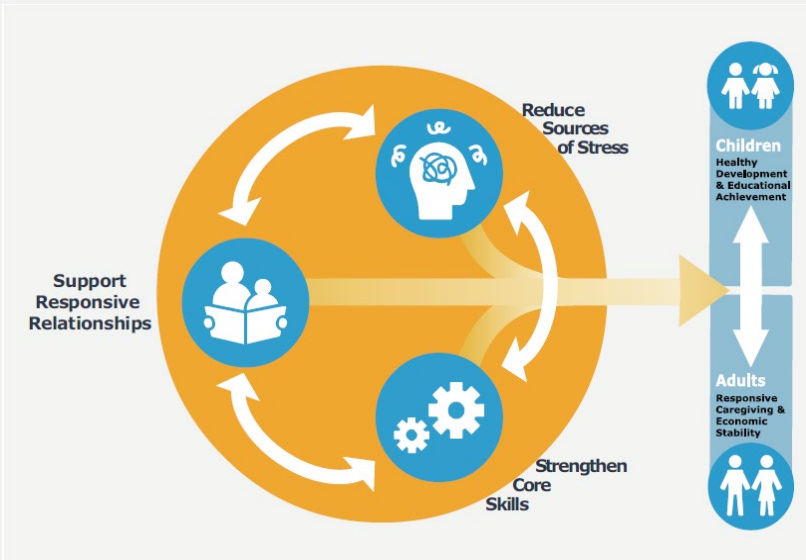
- Early Intervention
- Safe Babies Court Teams
- Infant-Early Childhood MH
  - Assessment & Diagnosis (DC:0-5)

# CONTINUUM OF SERVICES



- Early Intervention
- Infant-Early Childhood MH
  - CPP
  - ABC
  - PCIT
  - Joyful Together
- OhioRISE

# TAKE HOMES!



- We have **decades of robust and convincing research** to guide our policies and practices
- We must **invest in the EARLIEST YEARS** for the greatest returns on human potential \*and\* resources/money
- We must **invest in a continuum of services** across a wide range of maternal-young child serving sectors
- We must also **invest in developing this workforce** to provide these necessary services
- All services should strive to be **compassionate and trauma-informed**

THANK YOU FOR ALL THAT YOU DO!

Contact for more information:

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