

PARENT-CHILD INTERVENTIONS AS BUFFERS AGAINST TOXIC STRESS

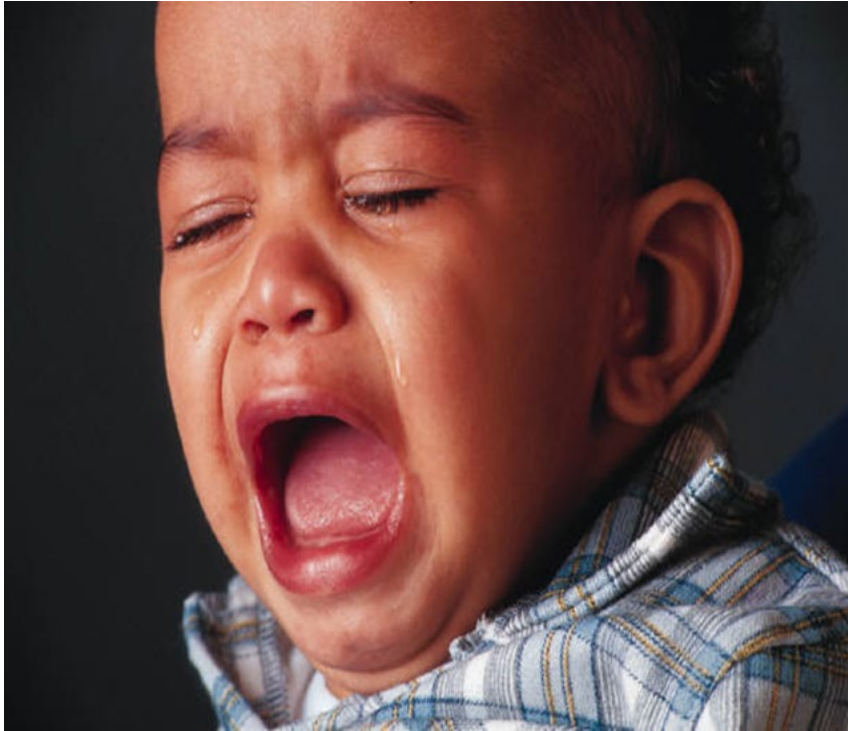


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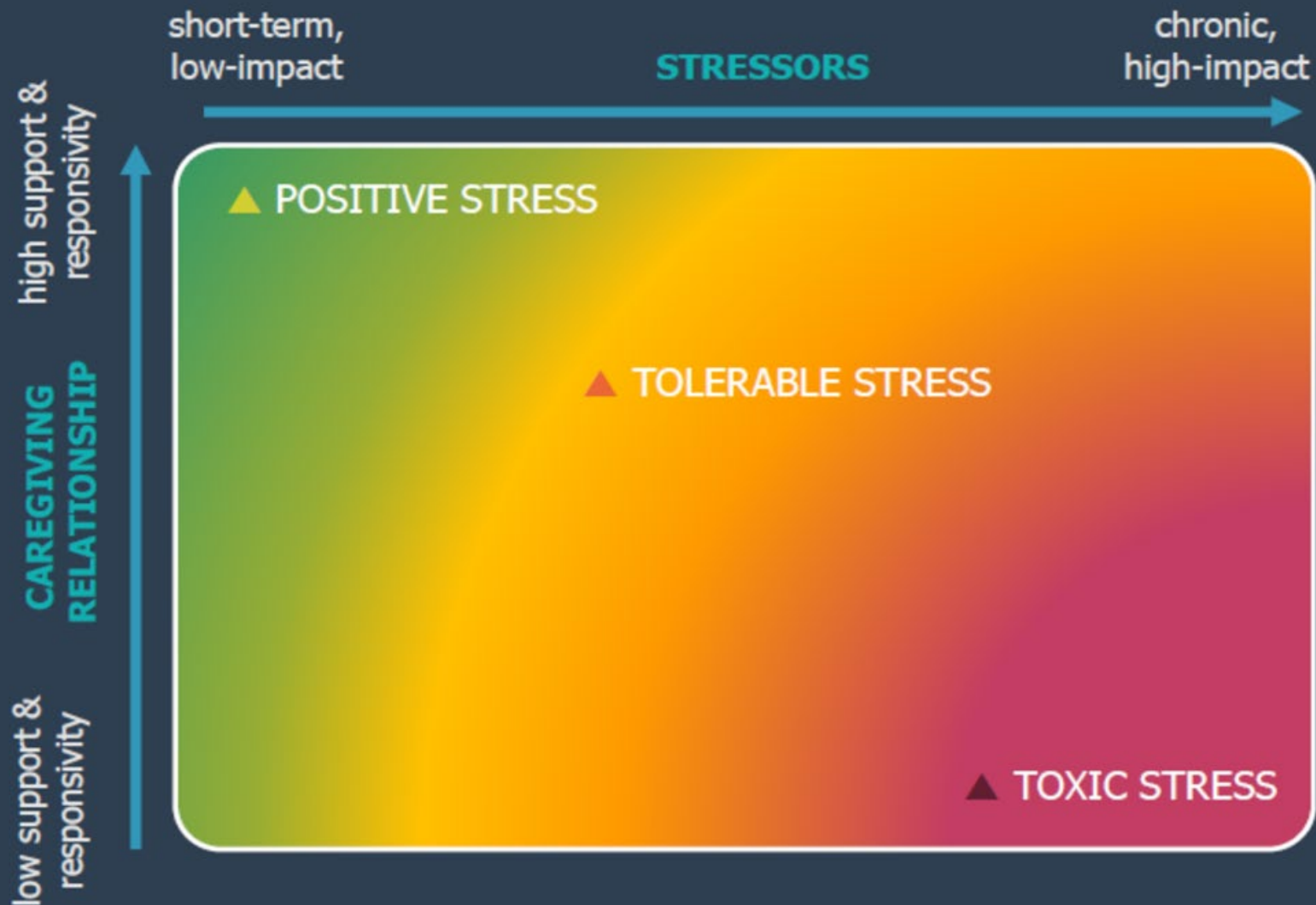
TOXIC STRESS



“Strong, frequent, and/or prolonged activation of the body’s stress-response system *in the absence of stable adult support*”

Shonkoff, 2010; p. 360

● CONDITIONS *for* TOXIC STRESS



Toxic Stress: Risks and Contexts

Poverty

**Sociodemographic
risk (e.g., RACISM)**

**Intimate Partner
Violence and Other
Forms of TRAUMA**

**Parental mental
illness and
substance abuse**

Child Maltreatment

**Lack of stable,
nurturing caregiving
environment**

Bio-Developmental Framework

(Shonkoff, 2010)

Sources of Toxic Stress:

Chronic Poverty,
Racism, Trauma,
Maltreatment

Biological Embedding of Toxic Stress:

(Cortisol: Telomere,
Heart, Brain, Immune
System)

Child Outcomes:

physical and mental
health; cognition;
language; social-
emotional skills

Toxic Stress

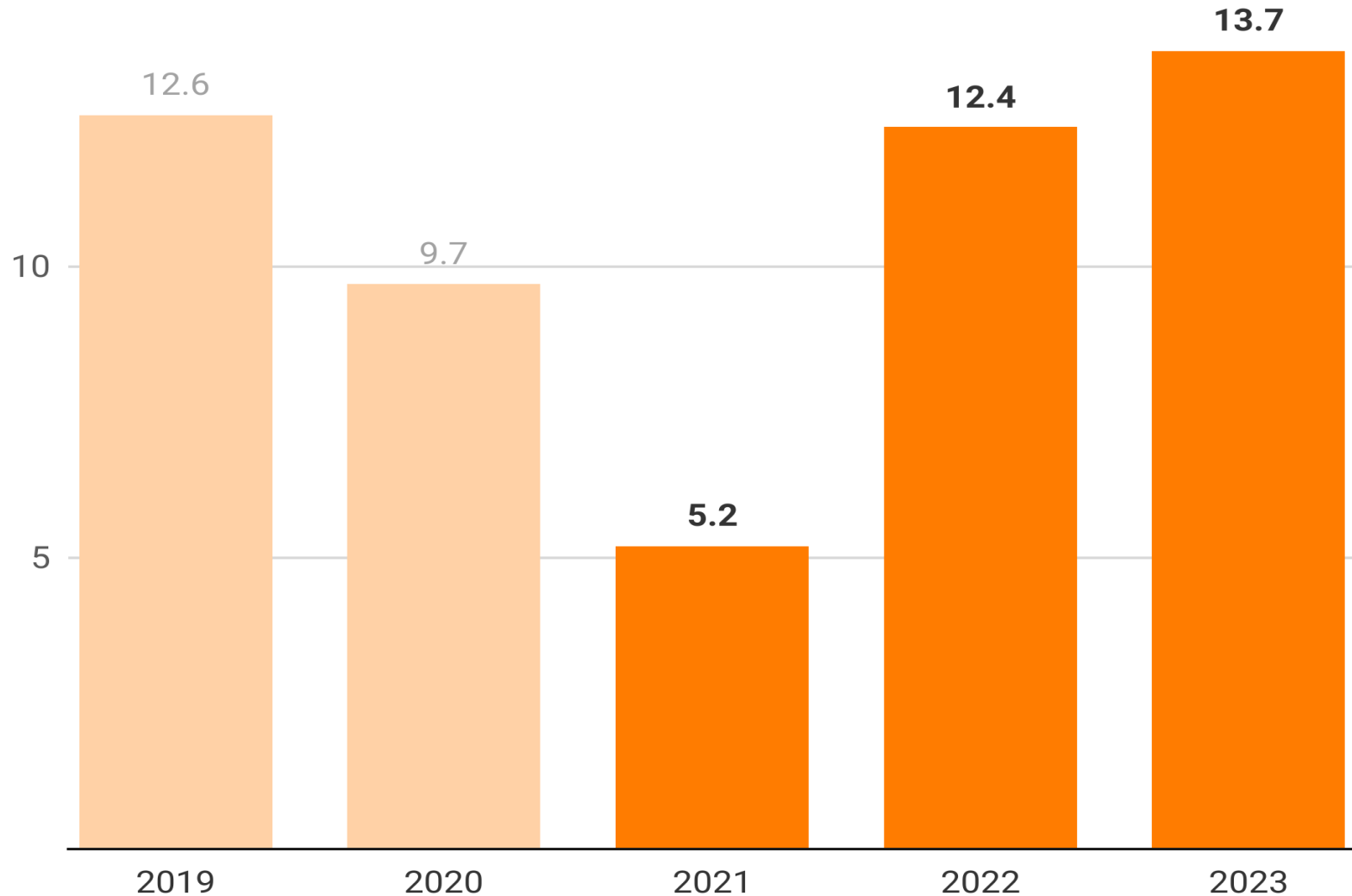
(Shonkoff et al., 2009)

- Linked to adverse outcomes
 - Lower thresholds for responsiveness to stress
 - Disrupted brain architecture and functioning
 - Effects on other organ systems
 - Premature/LBW African American infants
 - Health, cognitive, mental health challenges
 - Root of adult physical and mental health disparities



EPIDEMIOLOGY

US child poverty has nearly tripled since 2021

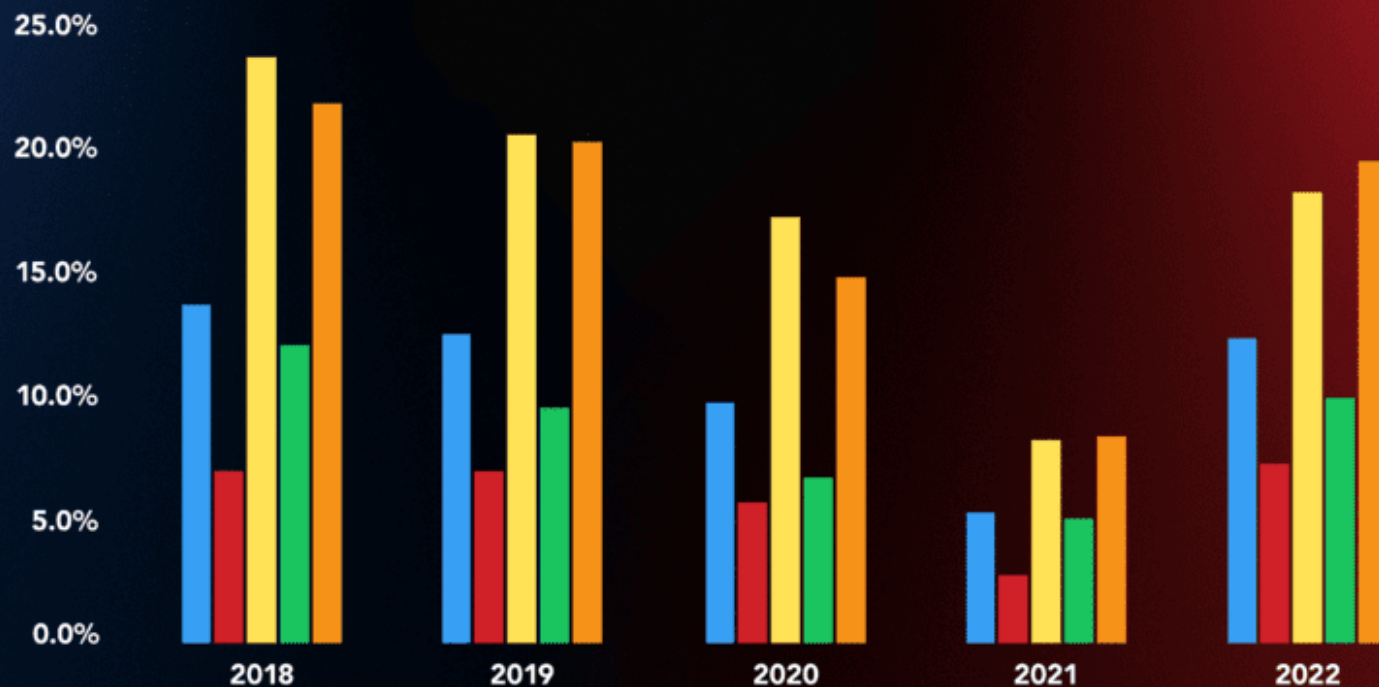


Data: US Census Bureau, "Poverty in the United States: 2023," Sep 2024. Figures refer to SPM poverty rates. More: stephensemmler.substack.com

Chart: Stephen Semler (@stephensemmler) • Created with Datawrapper

Children's Poverty Rates, By Race

■ All Children ■ White Alone, Not Hispanic ■ Black Alone, Not Hispanic ■ Asian Alone ■ Hispanic (Any race)

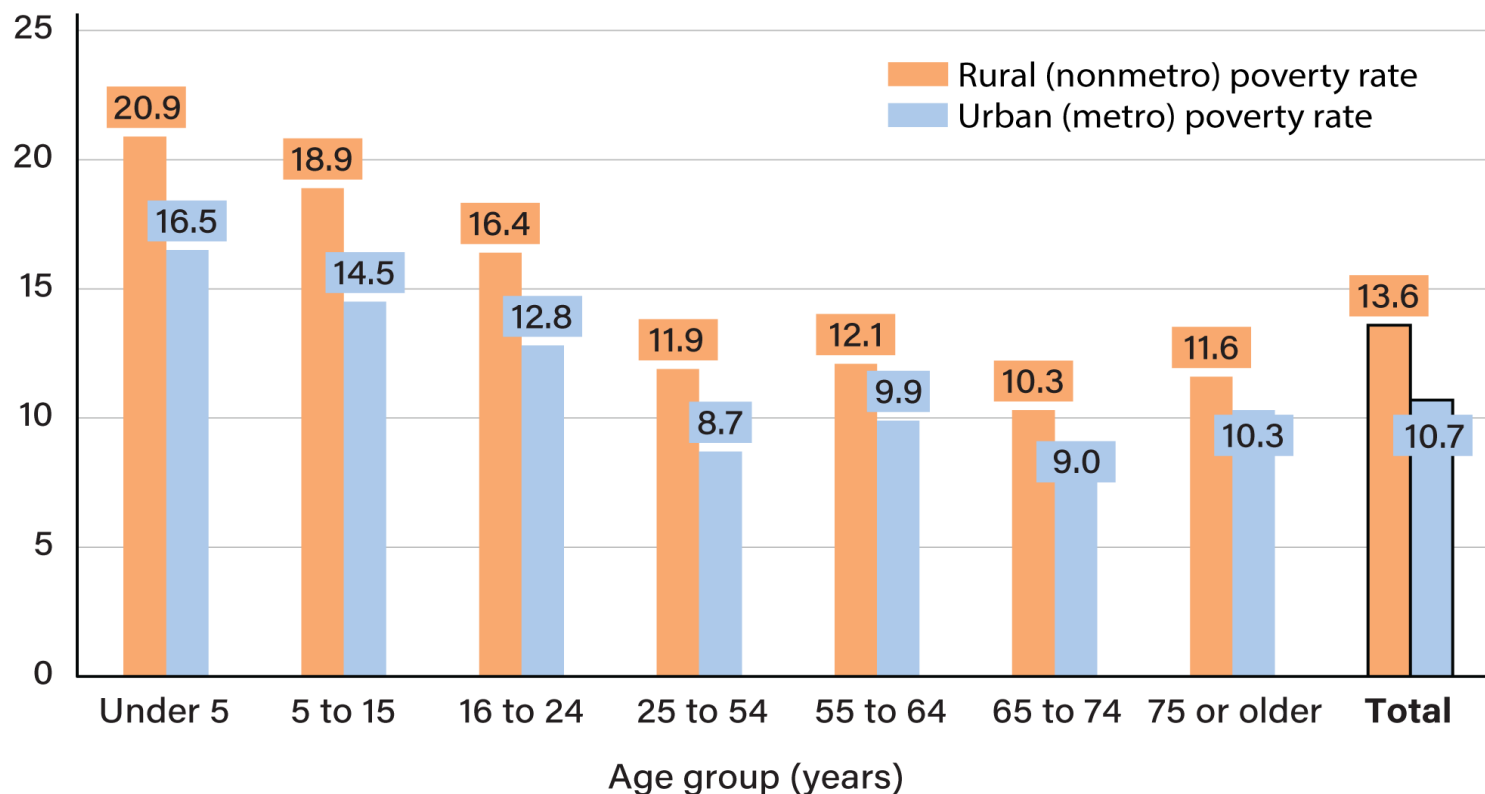


Poverty rate by age group and nonmetro/metro residence, 2023



Economic Research Service
U.S. DEPARTMENT OF AGRICULTURE

Poverty rate (percent)



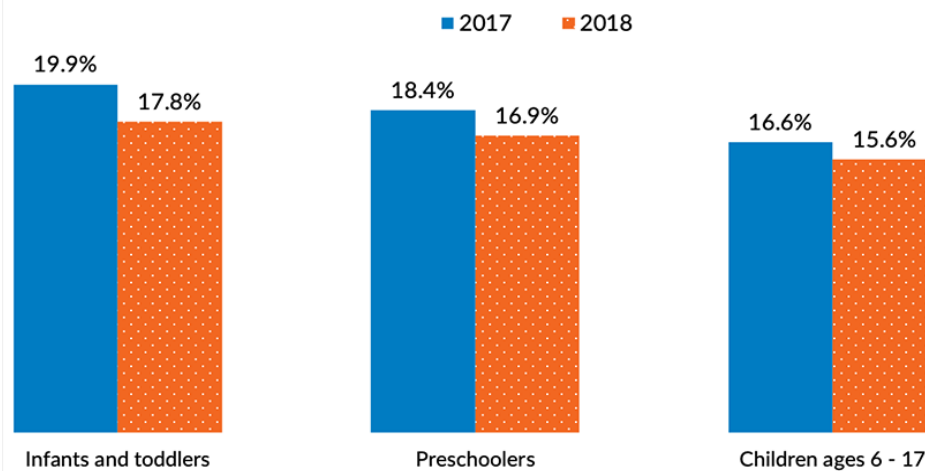
Note: Poverty status is defined by the official poverty measure of the U.S. Department of Commerce, Bureau of the Census. Metropolitan (metro) and nonmetropolitan (nonmetro) area designations are derived from the U.S. Office of Management and Budget's 2020 Standards of Delineating Metropolitan and Micropolitan Statistical Area.

Source: USDA, Economic Research Service using data from the U.S. Census Bureau, Current Population Survey, 2024 Annual Social and Economic Supplement.

YOUNG CHILD POVERTY

Despite declines in child poverty, disparities in poverty persist among the nation's youngest children

Poverty rates among children in 2017 and 2018, by age group



Source: U.S. Census Bureau, Current Population Survey, 2018 and 2019 Annual Social and Economic Supplement

childtrends.org

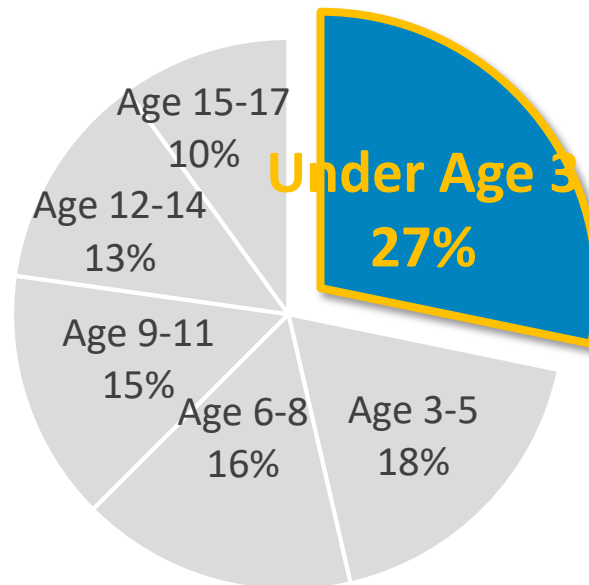
CAN STATISTICS (ACF, 2024)

- 80% of CPS reports do not receive further child welfare intervention
- Child Characteristics
 - 7.7 victims per 1,000 children in the population
 - Children <1 year old highest victimization rate: 22.2 /1,000
 - American-Indian/Alaska Native children highest rate: 14.3/1,000
- Child Maltreatment Types
 - 74.3% neglected (failure to provide/supervise)
 - 17.0% physically abused
 - 10.6% sexually abused



Infants and Toddlers Largest Group of Children Who are Maltreated

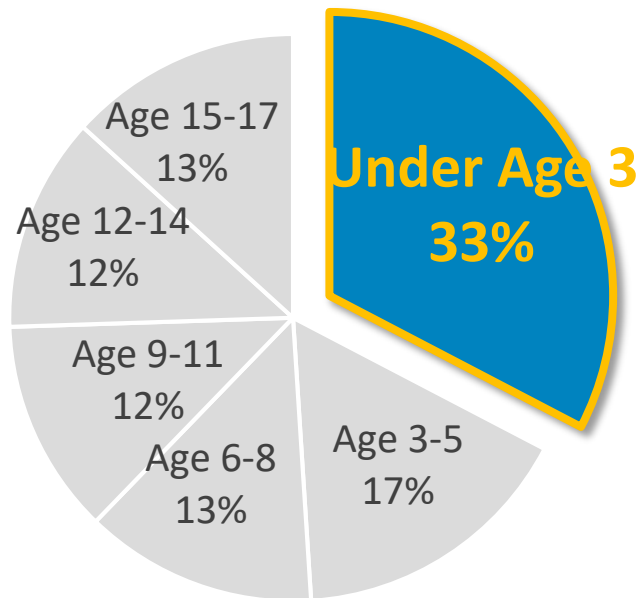
Percent of Children Who Are Maltreated by Age in Years



U.S. Department of Health & Human
Services, *Child Maltreatment 2022*
(January 2024)

Infants and Toddlers Largest Group of Children **Entering Foster Care**

Percent of Children Entering Foster Care by Age in Years



U.S. Department of Health & Human
Services, AFCARS Report #30 (May 2023)

Racial/Ethnic Disparities in Child Welfare Involvement

- 53.0% of African American children receive child protection investigation
- **double proportion of African American children under 2 years old in child welfare system than their proportion of child population**
- African-American children 2nd highest maltreatment rate (12.1/1,000)
- African-American child fatalities 2.8 times greater than White rate
- African-American children twice as likely as White children to experience foster care placement
- African American children receive lower quantity and quality of preventive, support and mental health services

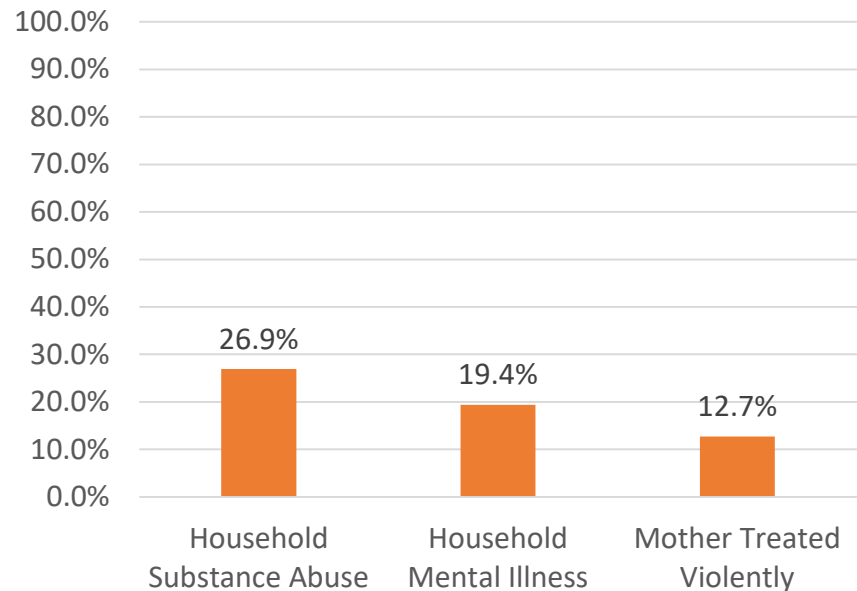


Administration for Children and Families, 2024;
Harden & Berger, 2025; Lanier et al., 2014

Parent Adversity Proximal to Children's Experience and Development

CHILD WELFARE FAMILIES

- 23.8% exhibit drug abuse
- 15.2% exhibit alcohol abuse
- 26.5% exhibit domestic violence
- 45,756 infants with prenatal substance exposure referred to child welfare agencies
 - 79.2% were screened-in to receive investigation or alternative response



CDC-Kaiser ACE Study 1995-97

DEVELOPMENTAL SCIENCE

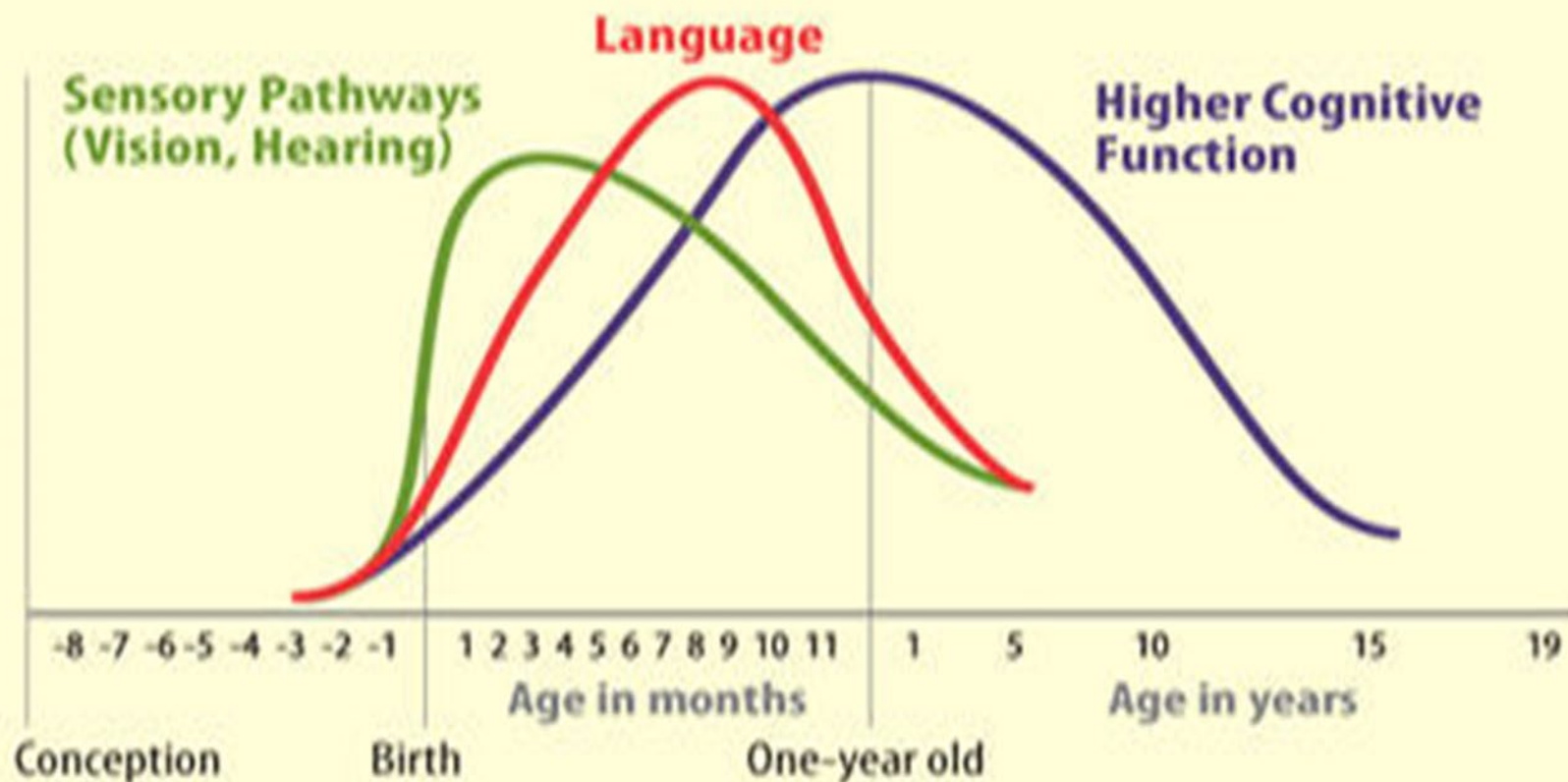
Baby's Brain

- Not fully developed at birth
- Exquisitely dependent on relationships and experiences to thrive.



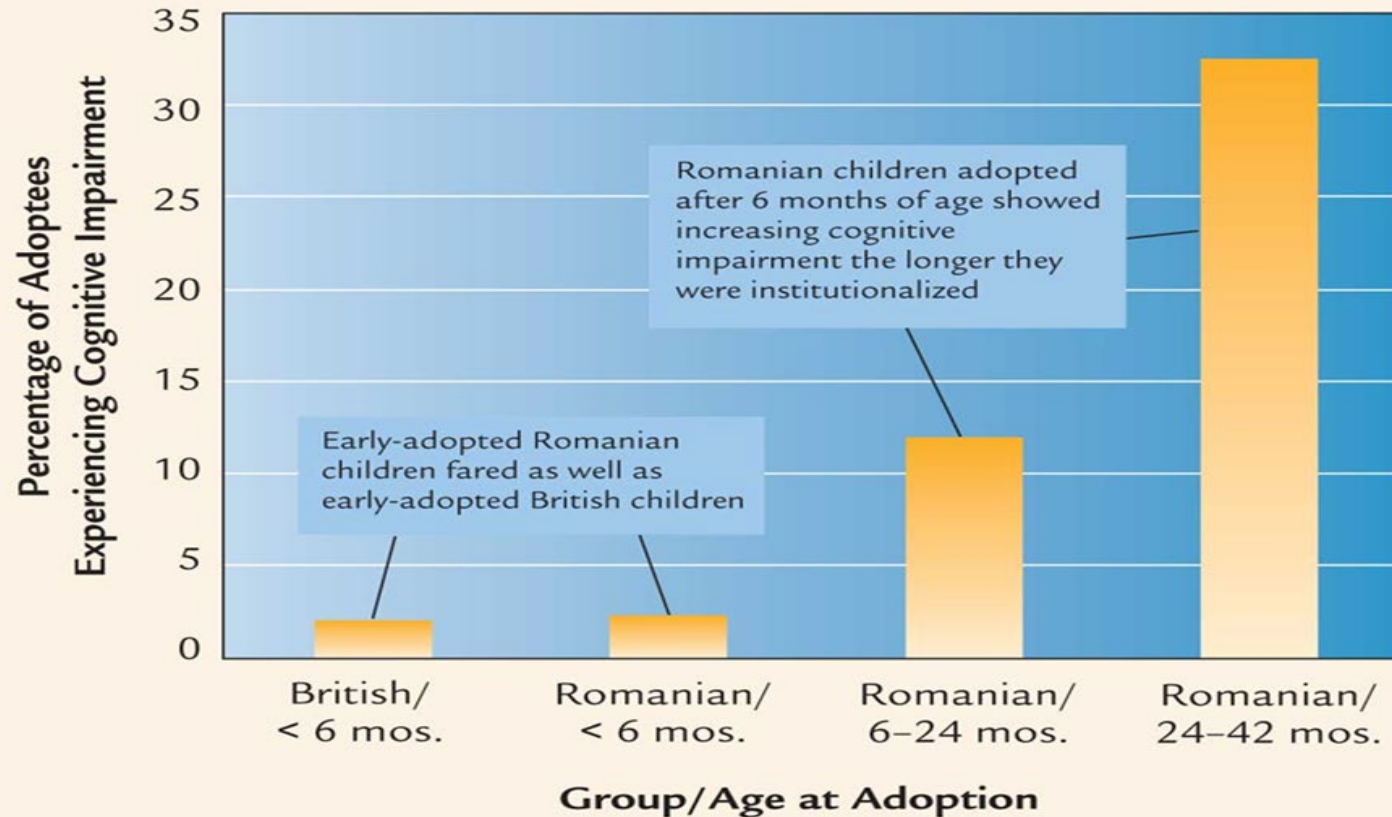
HUMAN BRAIN DEVELOPMENT IS GREATEST AT VERY YOUNG AGES

Synapse Formation and Retraction



SOURCE: C. A. Nelson in From Neurons to Neighborhoods, 2000

Timing of Adversity: Sensitive Periods



NEUROBIOLOGY OF TOXIC STRESS

- **Overall damaging of brain function**
- **Smaller brain volume, larger fluid-filled cavities, less connective tissue**
- **Size reduction and defects in specific regions**

Prefrontal cortex

- Conscious thought, executive functioning

Hypothalamus

- Hypothalamic-pituitary-adrenal (HPA) axis
 - cortisol production (stress hormone)

Hippocampus

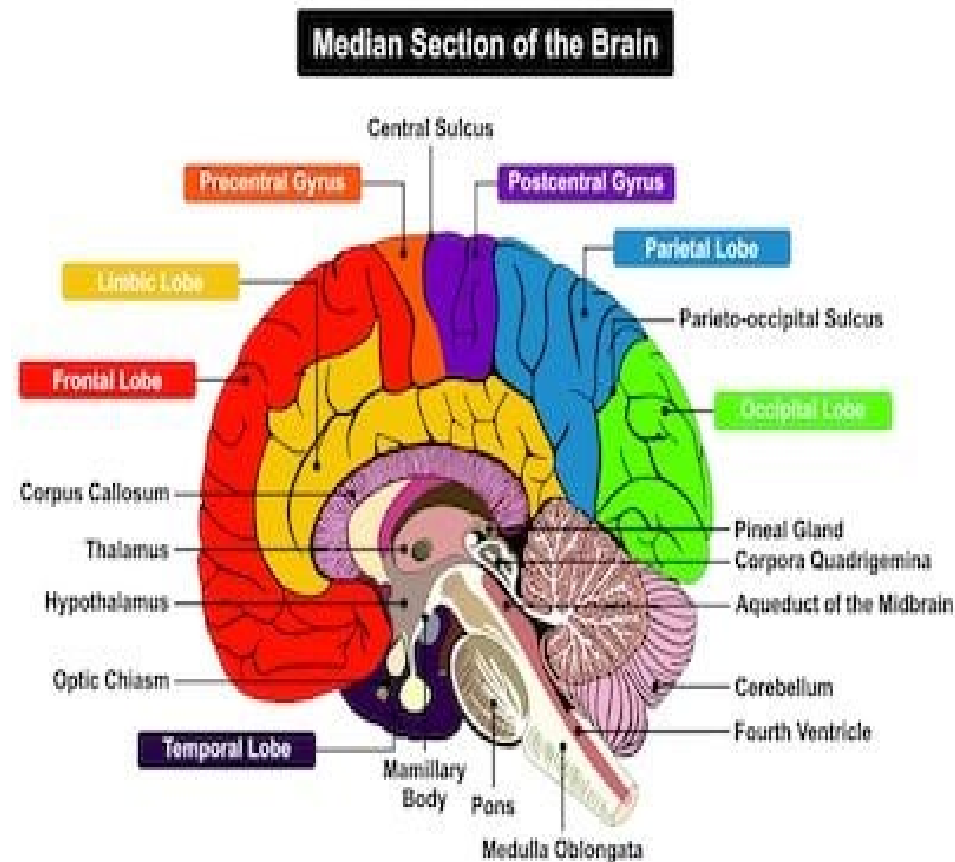
- Learning, cognition, memory

Amygdala

- Fear, emotions, memory, decision-making

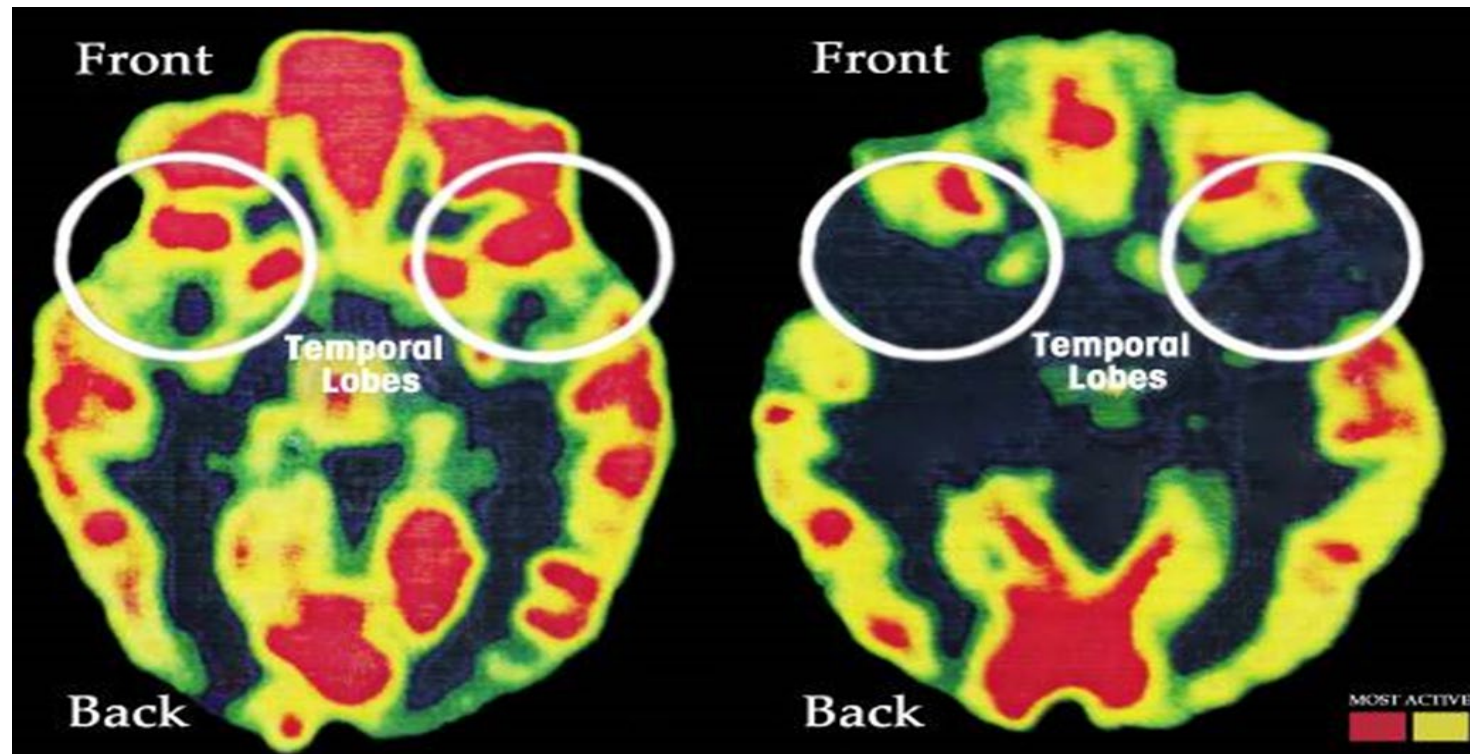
Corpus callosum

- Communication of 2 hemispheres



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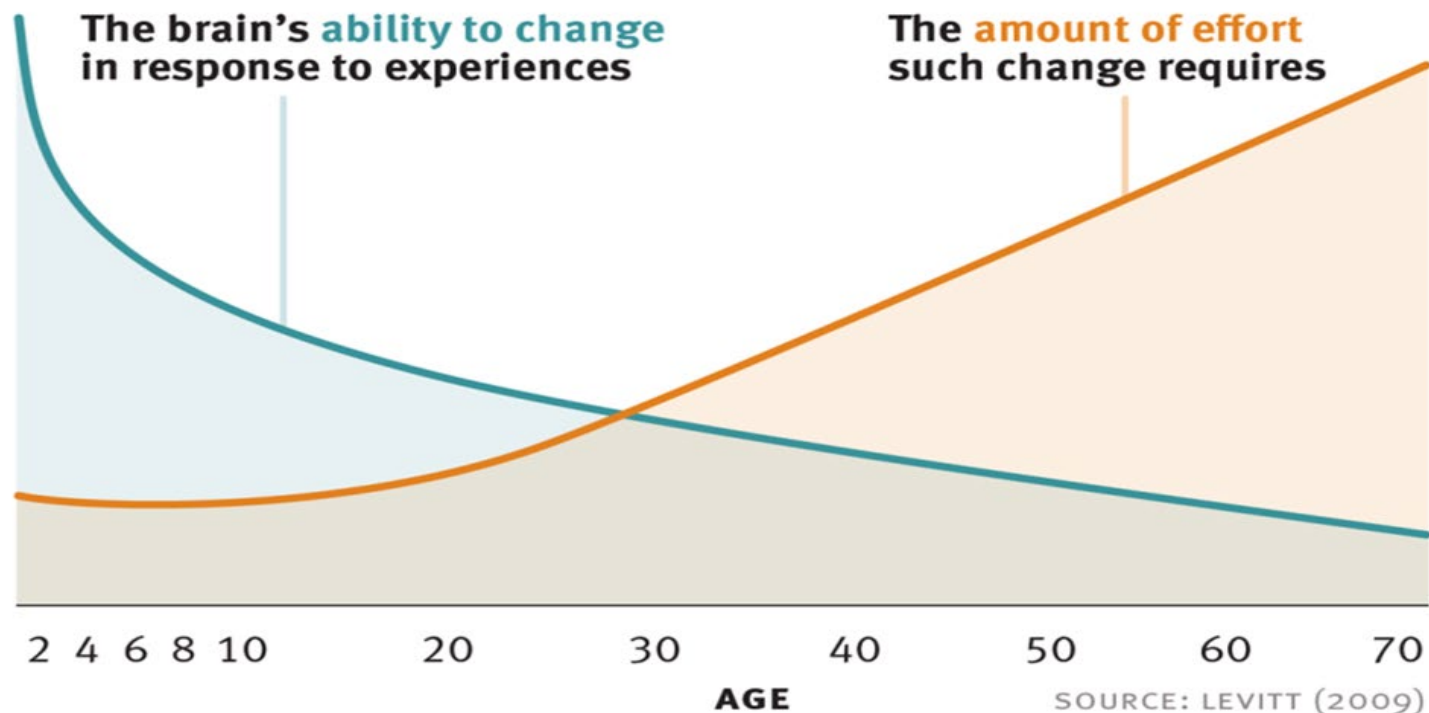
EARLY DEPRIVATION AND BRAIN DEVELOPMENT




Courtesy of Dr. H.T. Chugani from the Children's Hospital of Michigan, Wayne State University

**PREVENTION SCIENCE:
TOWARD AN EARLY CHILDHOOD
SYSTEM OF CARE TO BUFFER
CHILDREN AGAINST ADVERSITY**

PROMISING TIME FOR INTERVENTION



6/8/202

Center on the Developing Child  HARVARD UNIVERSITY

www.developingchild.harvard.edu

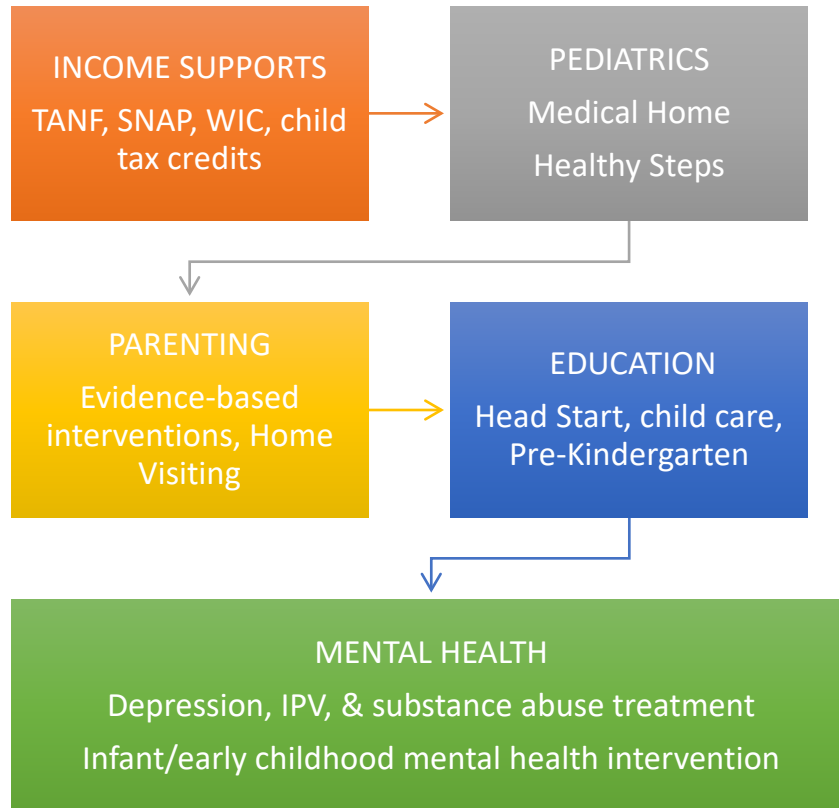
Early Childhood System of Care

(Dodge, 2018)

- Lack of comprehensive system of care for young children (Tolan & Dodge, 2005)
 - “no organized system exists to identify treat, or prevent mental health problems”
- Different intervention approaches
- Children are different ~ need different services
- Children have different needs at different ages
- Primary care providers to screen all children and specialists to serve specific groups of children
- Comprehensive menu of “safety net” and specialized services



Early Childhood System of Care



CHILD WELFARE
Preventive
Interventions

PARENT-CHILD
INTERVENTIONS



PUBLIC HEALTH APPROACH: THREE PATHWAYS TO BUFFERING TOXIC STRESS

PRIMARY PREVENTION

Decreasing poverty,
and fostering
community and social
well-being

Community-based
public health,
universal education,
and income support
approaches

SECONDARY PREVENTION

Reducing risks for
maltreatment

Programs that provide
early care and
education, parent
education, parent and
family support

TERTIARY PREVENTION

Providing interventions
for children exposed
to maltreatment and
their families

Child, parent, dyadic,
family interventions

INCOME SUPPORTS AND PARENTING OUTCOMES

- TANF/Welfare/AFDC
 - Decrease in state benefits: increased maltreatment (Berger, 2004; Paxson & Waldfogel, 2003; 2002)
 - Lower TANF participation: higher rates of neglect (Albert & Lim, 2019)
 - Welfare limits/sanctions: increased substantiation
 - Welfare reform: higher rates of CM reporting & investigation (Courtney et al., 2005; Fein & Lee, 2003)
 - Permanent exit from AFDC: lower rates of re-reporting (Drake et al., 2006)
 - Welfare receipt: protective factor in reunification (Kang et al., 2016; Lee et al., 2017)
- SNAP participation
 - Reduced maltreatment (Lee & Mackey-Bilaver, 2007; Millett et al., 2011)
 - Proxy for economic hardship (increased CM)
- EITC (increases in income)
 - Lower rates of self-reported CPS involvement and neglect (Berger et al., 2017)
 - refundable EITC: lower rates of hospital admission for abusive head trauma (Klevens et al., 2017)
- Medicaid
 - Medicaid expansion states: decreased rates of child neglect (Albert & King, 2017; Brown et al., 2019; Paxson & Waldfogel, 2003; Slack et al., 2007)



Home Visiting and Income Supports

- DESIGN: Parents as Teachers (PAT) + additional training on financial empowerment and Earned Income Tax Credit (EITC) vs. PAT as usual
- FINDINGS: substantial pre-post differences in “heard about” and “received” EITC; reductions in child neglect; no benefits re: other parent and child well-being outcomes (e.g., ACEs)
- LESSONS
 - Financial empowerment and benefits information powerful addition to EBHV
 - Relationship between HV and parent provide special avenue for conversations
 - Buy-in from home visitors, not just supervisors, is critical for intervention success and transfer of knowledge



ECE as Protective Factor

- Children in poverty
 - High-quality, intensive, center-based ECE (McCartney, Loeb, Magnuson, Waldfogel)
- Limited impacts on children in poverty with high levels of social risks
 - Need for more specialized interventions (Burchinal, Early Head Start study)
- Benefits to children's socio-emotional development (eg, aggression) in more intensive programs with behavioral component (Yoshikawa et al, 2013)
- Teacher-child relationships
 - Predicts later academic and s-e outcomes, particularly for children at high risk (Pianta et al)
- Double Jeopardy = poorer outcomes
 - Risky child care and home environments (Watanabe et al)



PRIMARY PREVENTION: PreK

Pre-Kindergarten (Pre-K) attendance increases children's chances of success in both Kindergarten & early school years

- Higher scores on language, literacy, math, and executive functioning assessments (e.g., Gormley et al., 2008; Lipsey et al., 2011; Weiland & Yoshikawa, 2013; Grindal et al., 2019; Hofer et al., 2018; Montrosse-Moorhead et al., 2019)
- Greater benefits for children from low-income backgrounds (Magnuson & Waldfogel, 2016; Weiland & Yoshikawa, 2013)
- Children in early elementary school in Baltimore, MD with Head Start plus public Pre-K more likely than children in informal care and other early childhood programs to display kindergarten readiness skills (Williams et al., 2019)
- **Need to examine Pre-K effects on children from low-income families with high levels of adversity** (Phillips et al., 2017; Phillips, 2016)

PreK Regression Discontinuity Design

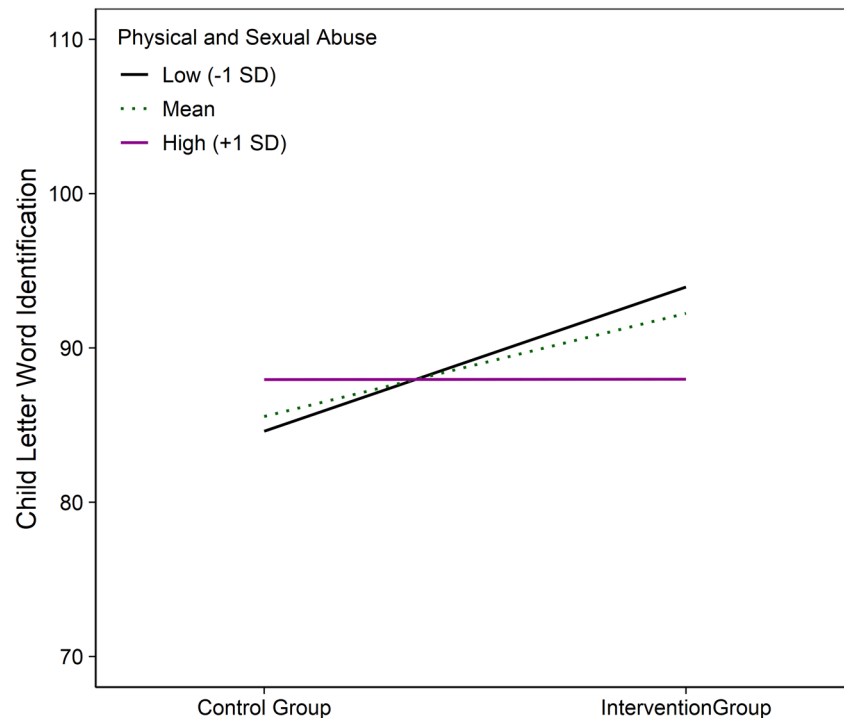
Results from urban, high-risk schools

- PreK children higher on early literacy
 - WJ-IV Letter-Word ID & Word Attack
- PreK children higher on receptive vocabulary
 - PPVT-IV
- PreK children higher on early mathematics
 - WJ-IV Applied Problems
- PreK children NOT higher on executive functioning tasks
 - Sustained attention
 - Impulse control
 - Working memory

Jones Harden et al., 2022

Primary Prevention in Context of Trauma

(Jones Harden et al., in preparation)



	β	SE	z	p
Model 1: Literacy				
Child Letter Word Identification				
Parent Education	.22	0.07	3.07	.002
Child Age	-.22	0.11	-1.95	.05
Intervention	.28	0.12	2.48	.01
THQ Physical/Sexual Abuse	-.08	0.10	-0.80	.42
Intervention \times THQ Physical and Sexual Abuse	-.28	0.10	-2.92	.004

- Mothers experiencing low abuse: intervention = higher levels of letter word ID
- Mothers experiencing high abuse: intervention = lower levels of letter word ID

Evidence-Based Preventive Interventions

- Home visiting programs
 - Healthy Families, Nurse Family Partnership, Early Head Start, Family Connects
- Parenting interventions
 - SafeCare, Family Check-up, The Incredible Years, Mom Power, Promoting First Relationships, ABC
 - Substance Use Focus: Parents Under Pressure, Mothers and Toddlers Program, Mom Power
- Therapeutic interventions
 - Trauma-focused Cognitive-Behavioral Therapy, Parent-Child Interaction Therapy, Child Parent Psychotherapy



SECONDARY PREVENTION: ABC

- Attachment and Biobehavioral Catch-up (Dozier & Bernard 2019)
- Brief (10-week) manualized home-based intervention focused on target behaviors
 - Nurturance, following the lead with delight, reducing threatening and/or frightening behavior
- Experiential intervention using coaching (in the moment commenting) and videotape
- Strong evidence base re: ABC impact on parenting in birth, foster, and adoptive parents
- **Randomized control trial of primarily Latine families in Early Head Start**

BENEFITS OF ABC

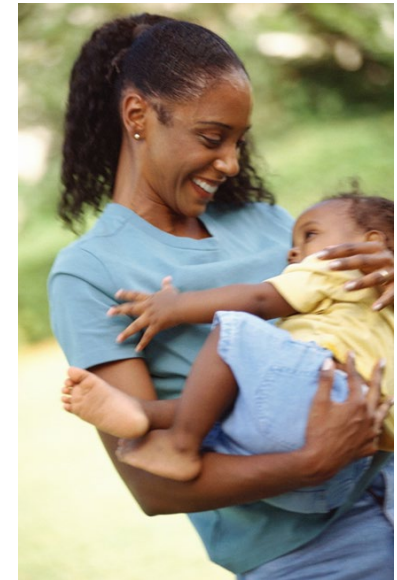
Infants/toddlers in foster care

- More likely to be securely attached to foster parents
- More normal diurnal patterns of cortisol production

Infants/toddlers in Child Protective Services

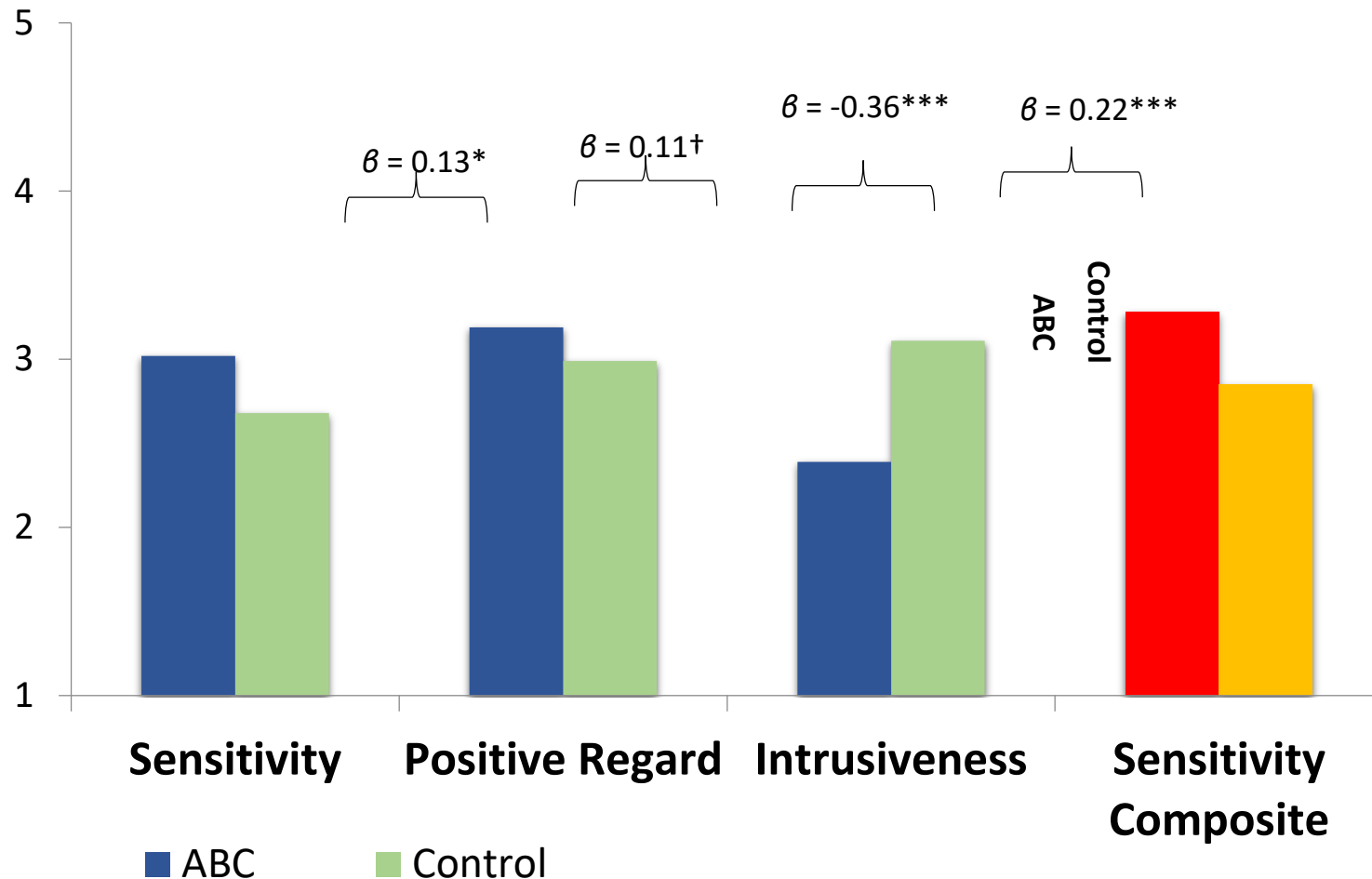
- Mothers showed more sensitivity to infants
- Infants less likely to have disorganized attachment and more likely to be securely attached

Dozier et al., 2006; 2007; 2008; 2009; Bernard & Dozier, 2012



ABC as “Buffering Toxic Stress” Intervention

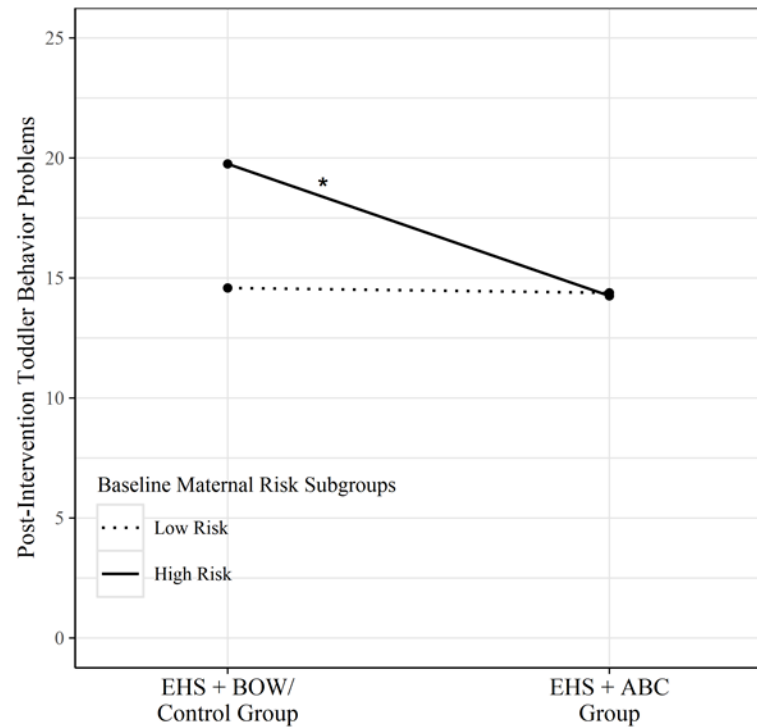
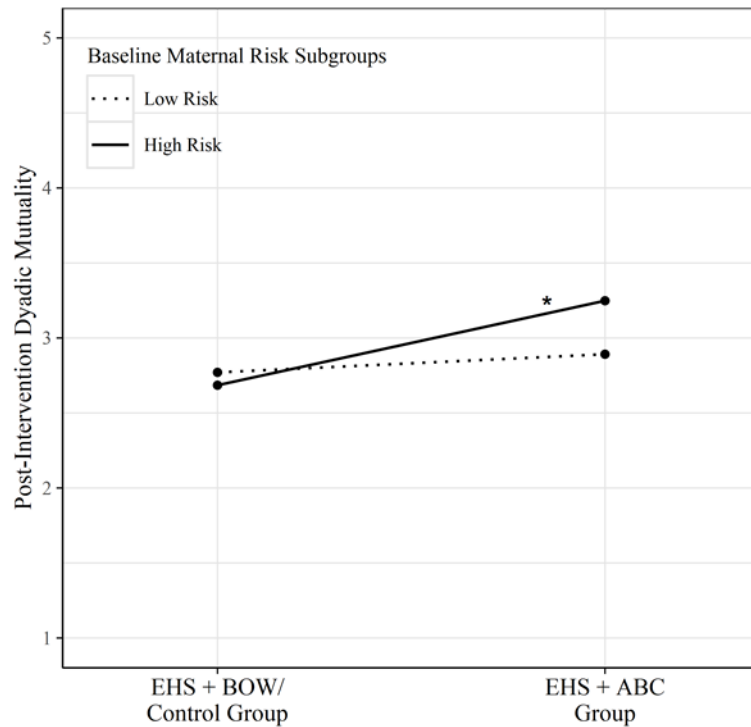
Post-Intervention Parenting Behaviors (Berlin et al., 2018)



RESULTS

Moderated intervention effect on post-intervention dyadic mutuality and toddler behavior problems by maternal psychological risk

(Jones Harden et al., 2022)



PARENT-CHILD INTERVENTIONS

DEFINITION OF INFANT & EARLY CHILDHOOD MENTAL HEALTH

- “To develop physically cognitively socially... to master the primary emotional tasks of early childhood without serious disruption caused by harmful life events.....involves the psychological balance of the infant-family system”WAIMH
- “...promotion of healthy social and emotional development; prevention of mental health problems; and treatment of the mental health problems of very young children in the context of their families” ...Zero to Three



Foundations of Infant and Early Childhood Mental Health

- Safe, health, low-stress pregnancy
 - Opportunity and capacity to be in love with and to be loved by safe and nurturing adult
 - Support in learning to self-regulate and mutually regulate
 - Nurturing, contingent, developmentally appropriate care
 - Ecological experiences that are safe, supportive, secure, and sustaining (e.g., absence of poverty and violence in community)
-
- ..adapted from Brandt et al., 2014



Foundation of IECMH Practice

- Dyadic interaction
- Moment to moment interaction
- Experiential approach
- Client/port of entry: child; parent; environment; relationship
- Lifelong impact of infancy and early childhood
- Developmental processes and contexts
- Serve and return
- Parallel process
- Intergenerational process
- Implicit (feelings, thoughts) and explicit (behaviors)



- **Multi-level**
 - Promotion
 - Prevention
 - Early intervention
- **Provider**
 - Multidisciplinary
 - Discipline-specific

...adapted from Brandt et al., 2014

Goals of Infant Mental Health Interventions

(Dozier, Fischer, Lieberman, Toth & Cicchetti)

- Enhance relationship with caregiver
- Promote parent-child interaction
- Emphasize voice of the child
- Reflect on ghosts & angels in nursery
- Focus on parental responsiveness, stimulation, and behavioral guidance
- Promote attachment, enhance dyadic interaction
- Improve child mental health, reduce behavior problems



Parent-Child Intervention

Didactic vs. experiential

- ACTIVE, learn from doing in the moment

Knowledge vs. skill building

- Focused on the HOW of childrearing which is practiced during HV

Decontextualized vs. contextualized

- Linked to parents' current experience with their child
- Responsive to parent & child needs



Intervention Targeting Parent-Child Interaction as Mechanism

- Effective interventions re: parental behavior (Juffer et al., 2005; Berlin et al., 2008; Jones Harden et al., 2021)
 - Improved parental sensitivity and responsiveness (mostly maternal)
 - Effective for parents with and without major risk
 - ***More success with moderate number of sessions and specific focus***
- Effective parenting interventions with video feedback (Fukkink, 2008; Velderman, 2011)
 - Improved parental skill in interacting with children (strongest effects)
 - Fewer child developmental/behavior problems
 - Increased parental pleasure with parental role
 - Enhanced parental well-being



Live and Video Feedback

- Targeted specific behaviors
- Exemplars of parenting behaviors / parent-child interaction
 - Caregivers' vs. "canned" video
- Coaching
 - Affirmation of positive behaviors
 - Scaffolding of negative behaviors
- Video coding
 - Self- and other-coding
- Video DVD (Montage)



CONCLUSIONS



Adverse childhood experiences during first 3 years lead to toxic stress.



Targeting parent-child relationships, family needs, and adverse experiences should be prioritized.



Evidence-based, developmentally informed prevention strategies should be taken to scale.



Interventions that promote protective relationships can buffer young children against toxic stress.



Early childhood system of care grounded in prevention science should be foundation.

*GRATITUDE
REFLECTIONS
QUESTIONS
BEST WISHES*