

TTAC

Perinatal and Early Childhood Mental Health Network

Training and Technical Assistance Center



Enhancing Attachment Quality
and Developmental Outcomes for
Vulnerable Young Children Through a Brief
Home Visiting Program

Presented by

Mary Dozier

University of Delaware

ABC Parenting Institute

Who We Are

The New York City Perinatal and Early Childhood Mental Health Training and Technical Assistance Center (TTAC), is funded by the NYC Health Department.

TTAC is a partnership between the New York Center for Child Development (NYCCD) and the McSilver Institute for Poverty Policy and Research

- **New York Center for Child Development** has been a major provider of early childhood mental health services in New York with expertise in informing policy and supporting the field of Early Childhood Mental Health through training and direct practice
- **NYU McSilver Institute for Poverty Policy and Research** houses the Community and Managed Care Technical Assistance Centers (CTAC & MCTAC) and the Center for Workforce Excellence (CWE). These TA centers offer clinic, business, and system transformation supports statewide to all behavioral healthcare providers across NYS.

TTAC is tasked with building capacity and competencies of mental health professionals and early childhood professionals in family serving systems to identify and address the social-emotional needs of young children and their families.

Visit the TTAC Website



About Trainings Resources Clinical Services

**NYC Perinatal & Early
Childhood Mental
Health Provider
Resources**

Learn More

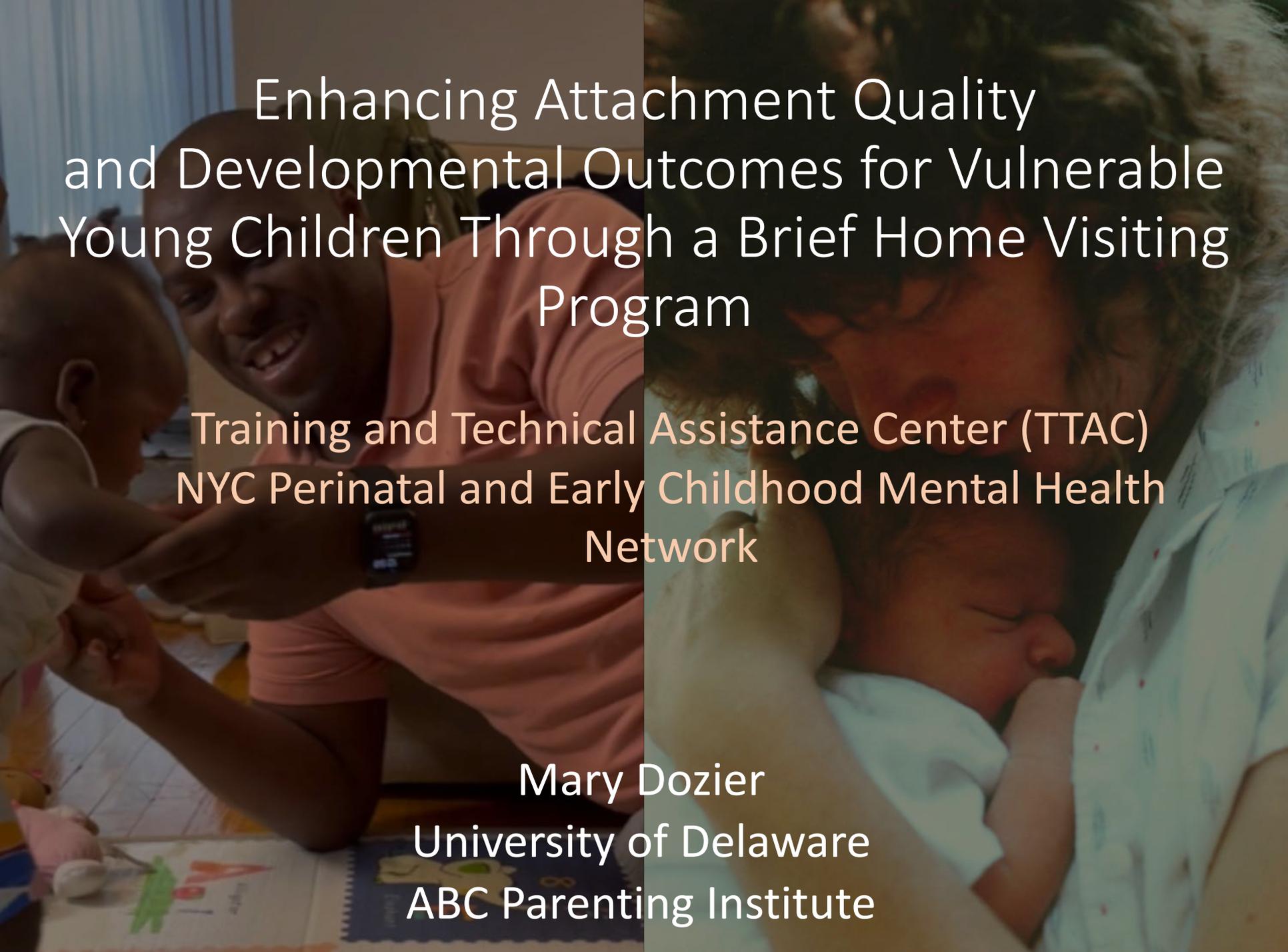


Explore all the provider resources at ttacny.org

A Variety of Features:

- View upcoming and archived content, trainings, and resources on the **Trainings page**.
 - Access videos, slides, and presenter information
- Contact the TTAC team by clicking on **Ask TTAC** and filling out our **Contact Us form**
- And more!

Have questions or need assistance? Please contact us at ttac.info@nyu.edu and we'll be happy to assist you



Enhancing Attachment Quality and Developmental Outcomes for Vulnerable Young Children Through a Brief Home Visiting Program

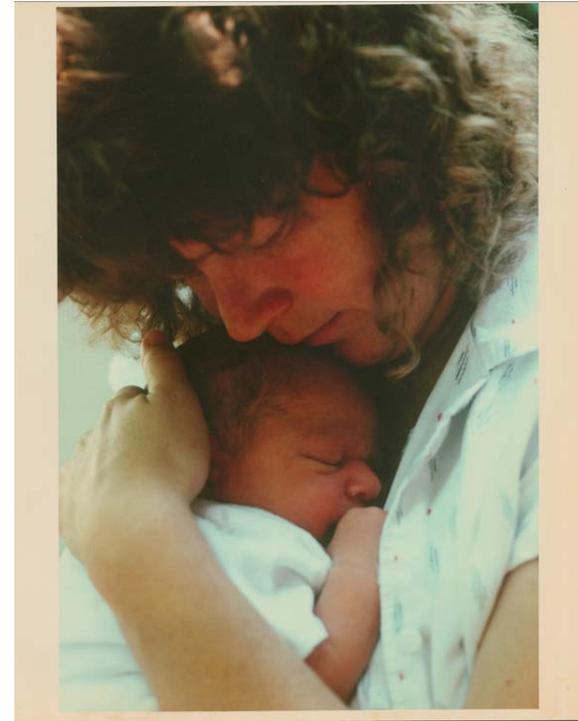
Training and Technical Assistance Center (TTAC)
NYC Perinatal and Early Childhood Mental Health
Network

Mary Dozier
University of Delaware
ABC Parenting Institute

Power of parental sensitivity

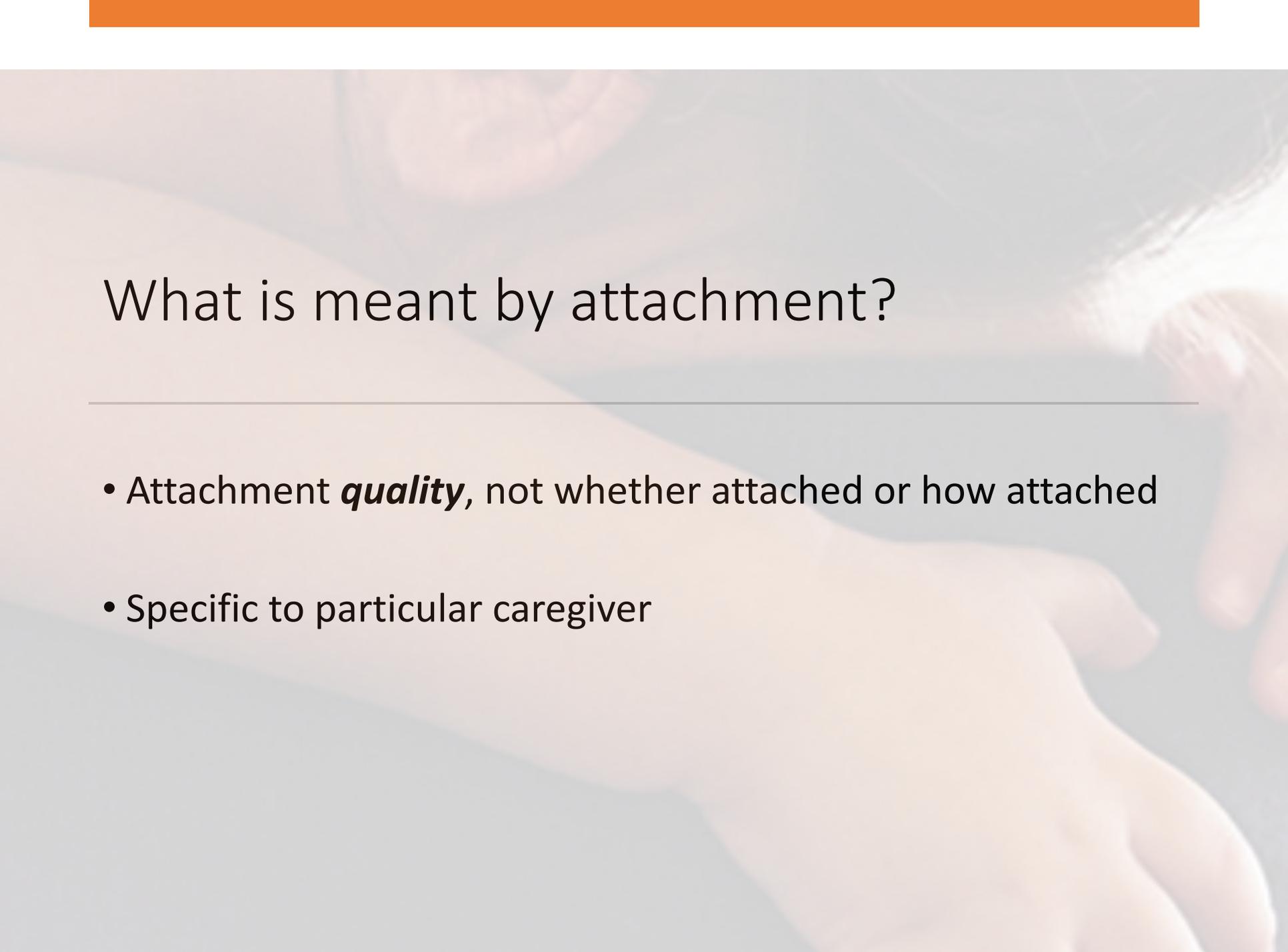


- Altricial species
- Human infant dependent on parent as:
 - Protector/nurturer
 - Responsive partner



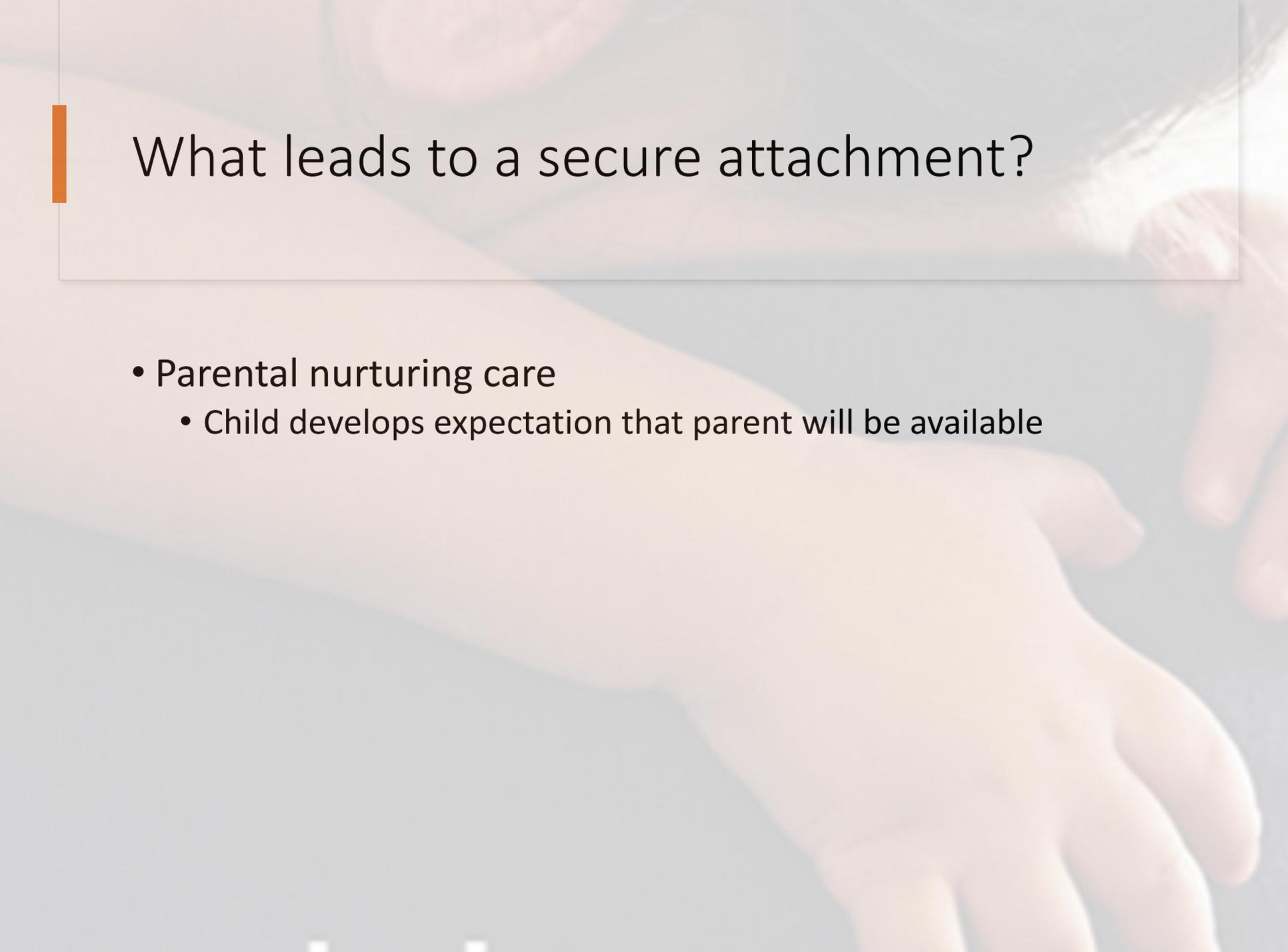
Attachment

- Biologically conserved
- See under all except most extreme circumstances
- Attachment develops before capacity to move away develops



What is meant by attachment?

- Attachment ***quality***, not whether attached or how attached
- Specific to particular caregiver

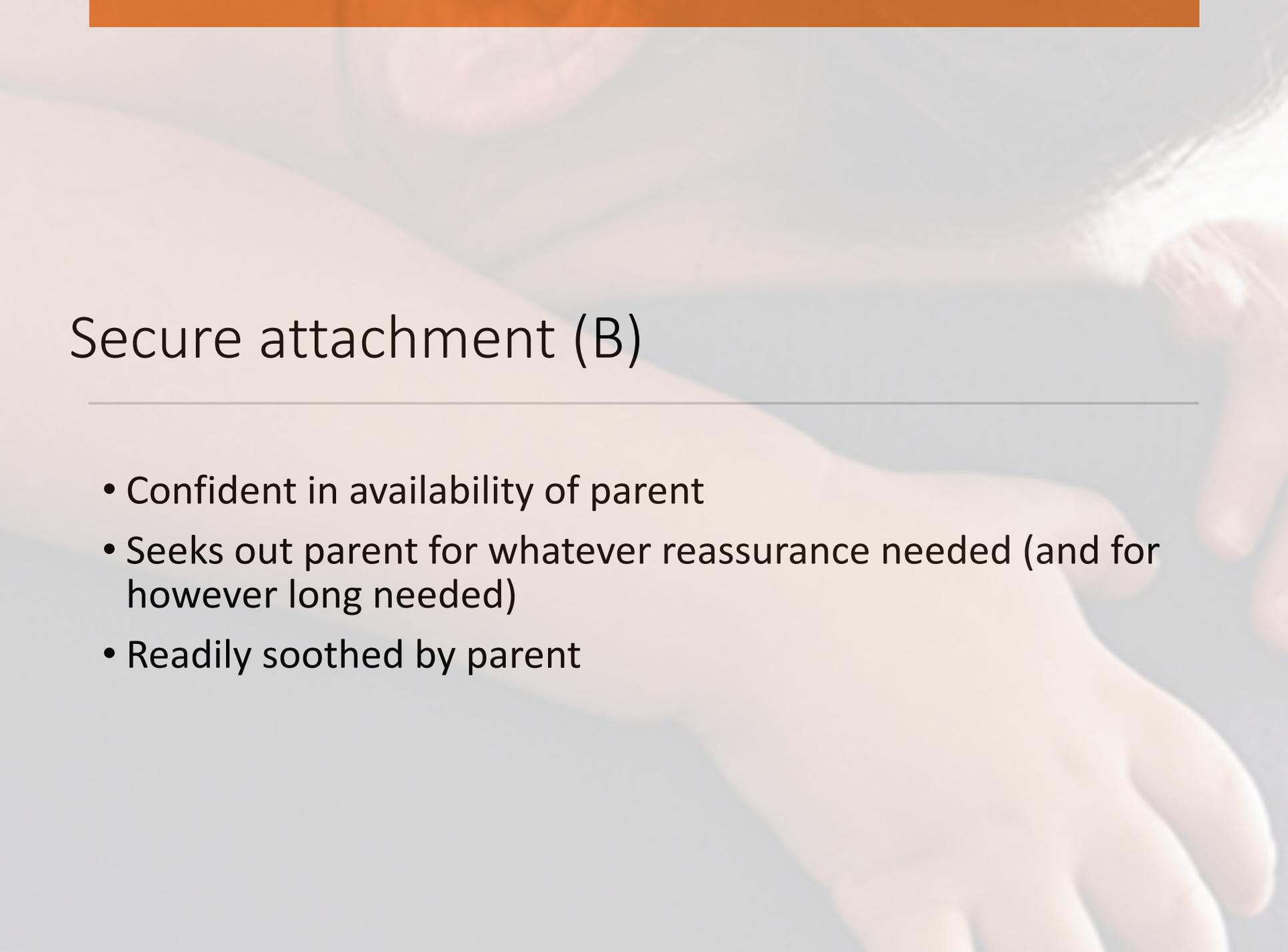


What leads to a secure attachment?

- Parental nurturing care
 - Child develops expectation that parent will be available



Nurturing parenting



Secure attachment (B)

- Confident in availability of parent
- Seeks out parent for whatever reassurance needed (and for however long needed)
- Readily soothed by parent

Assessment of attachment quality

- Strange Situation – series of separations and reunions
 - Child behavior in reunion provides information about expectations regarding parent availability

Secure attachment



What predicts secure attachment?

- Nurturance
- But also, parent's "state of mind" with regard to attachment

Autonomous state of mind (F)

- Coherent, consistent
 - Provide adjectives that they can support
- Value attachment

PLAY

3:36:32PM
NOV 11 1996

DUKE

Insecure attachment

Non-nurturing care



Avoidant attachment (A)

- Insecure about parent's availability when child is distressed
 - Does not show need for reassurance directly
 - May avoid parent when distressed

Avoidant attachment (A)



Dismissing state of mind (Ds)

- Dismisses the importance of attachment
- Idealizing of parents (or attachment experiences)
- Lack of memory of attachment experiences

3:38:15PM
NOV 11 1996

Resistant attachment (C)

- Insecure about parent's availability when distressed
- Fussy and resistant toward parent
- Not readily soothed

Resistant attachment



Preoccupied state of mind(E)

- Caught up or enmeshed in attachment experiences
 - Rambling, off track speech
 - Angry, involved

3:42:23PM
NOV 11 1996

A: Avoidant

B: Secure

C: Resistant

D: Disorganized



Organized strategies

Organized strategies

- Why? What are they organized to do?
 - Maximize proximity to caregiver under conditions of threat

Disorganized attachment (D)

- Shows a breakdown in strategy when distressed and with parent

Unresolved: U/(F, E, Ds)

- Unresolved with regard to loss or trauma
- Lapse in discourse or reasoning regarding loss or abuse
 - E.g., “I died when my father was 10”
 - Caught up (lost) in detail, “He was coming up the stairs, bam bam bam bam.”
 - “He never abused me” (after referring to abuse previously)
 - Referring to dead person as if still living



Adversity



Maltreatment



Foster care

Children who have experienced adversity often behave in avoidant or resistant ways



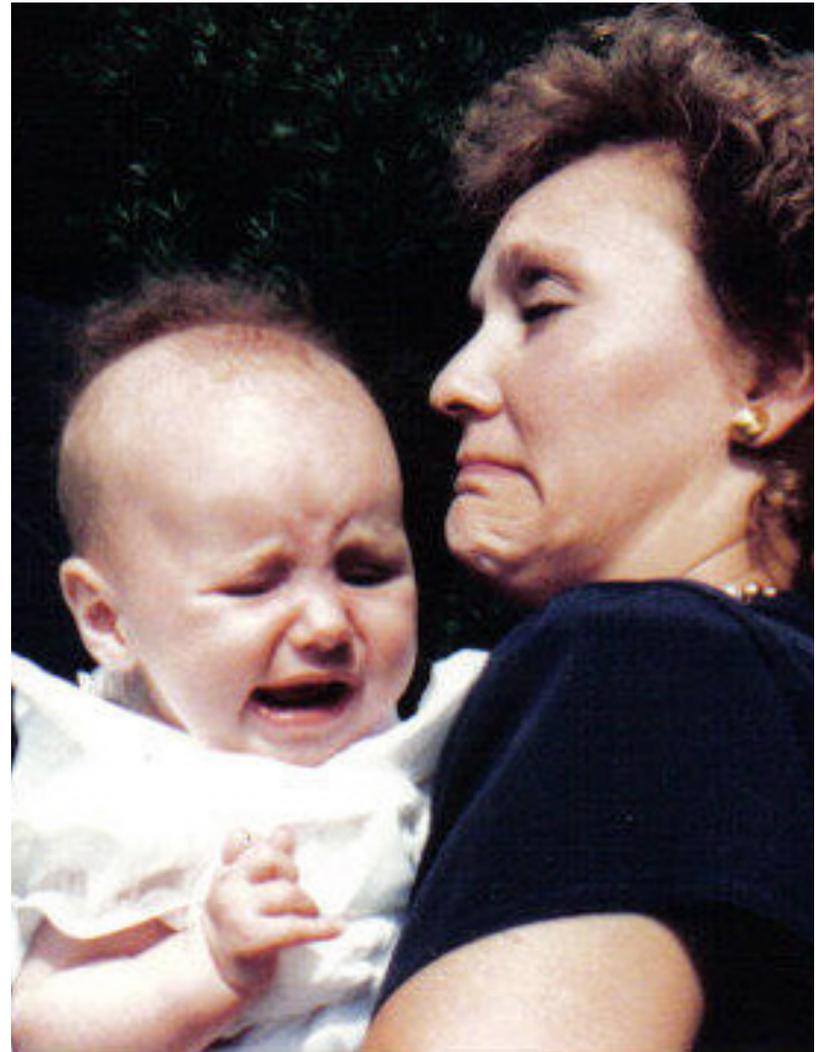
“You don’t care”



What happens when children push parents away?

- Contingency analyses reveal that parents respond “in kind”

Stovall-McClough & Dozier, 2004,
Development and Psychopathology



Nurturance

- Nurturance key to development of organized attachment
- Two things can get in the way
 - Children may push away
 - Nurturance does not come naturally to some parents

First target for ABC intervention: Providing nurturance

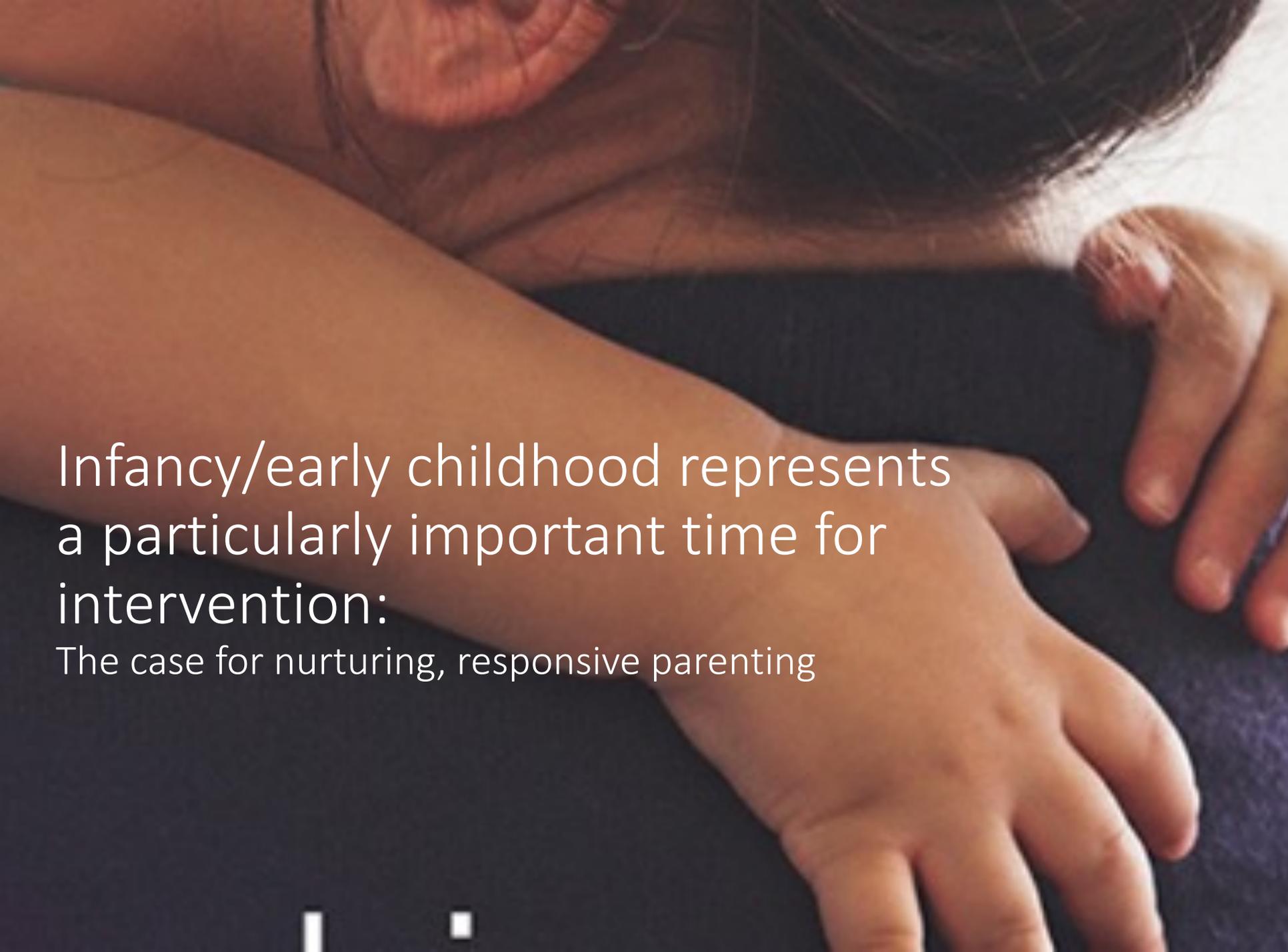
- Even when child doesn't elicit it
- Even when it doesn't come naturally to parent



Attachment and Biobehavioral Catch-up

- 3 targets
 - Nurturance
 - Following the lead
 - Avoiding frightening behavior
- 10 sessions

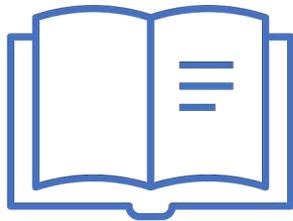




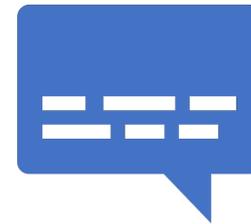
Infancy/early childhood represents
a particularly important time for
intervention:

The case for nurturing, responsive parenting

How ABC is implemented

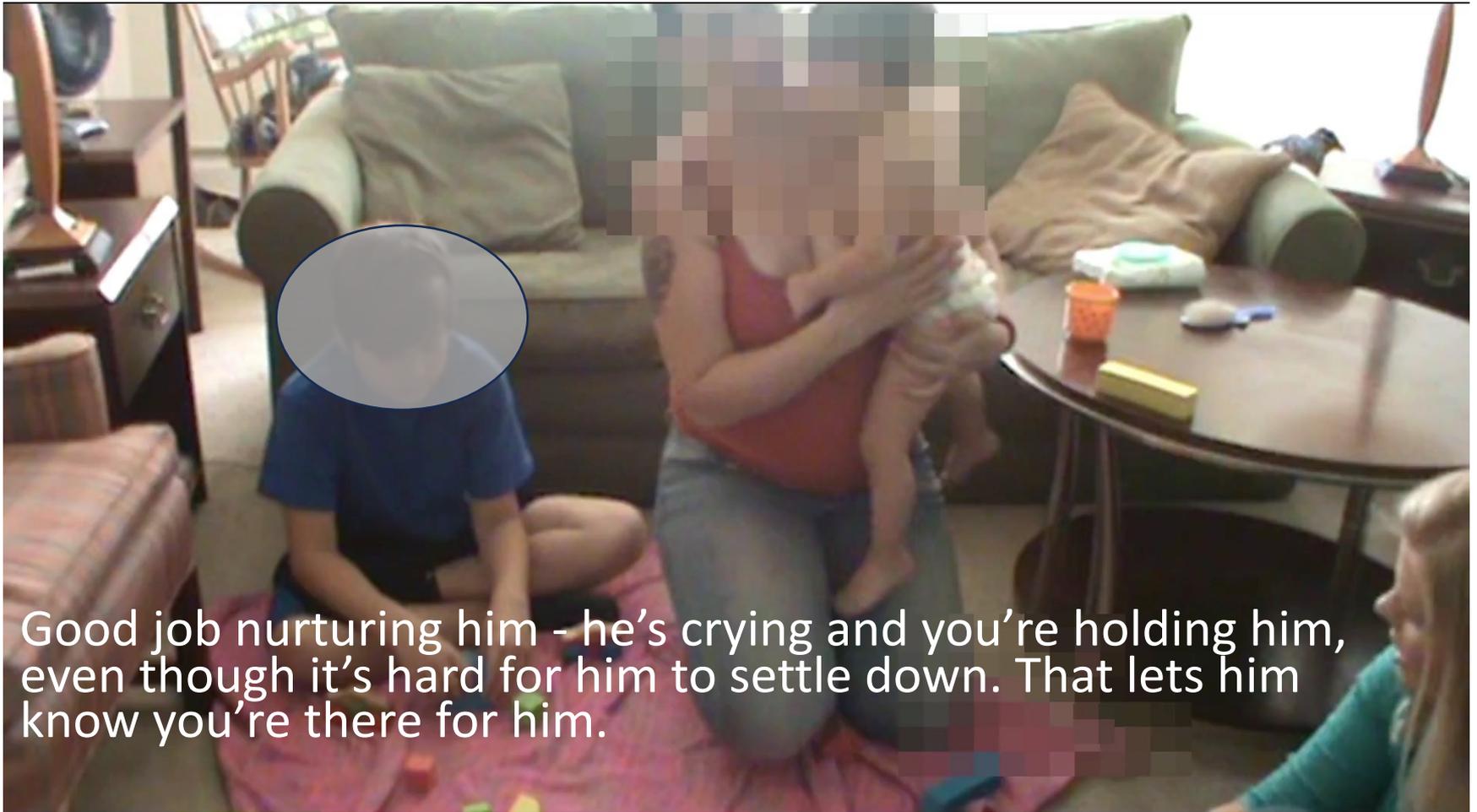


Manualized content



In-the-moment comments

Supporting nurturance through in-the-moment comments



Good job nurturing him - he's crying and you're holding him, even though it's hard for him to settle down. That lets him know you're there for him.

Comments can have 1-3 components

1. Description of parent behavior

“He’s crying and you’re holding him”

2. Link parent behavior to intervention target

“Good job nurturing him”

3. Link parent behavior to child outcome

“That lets him know you’re there for him”

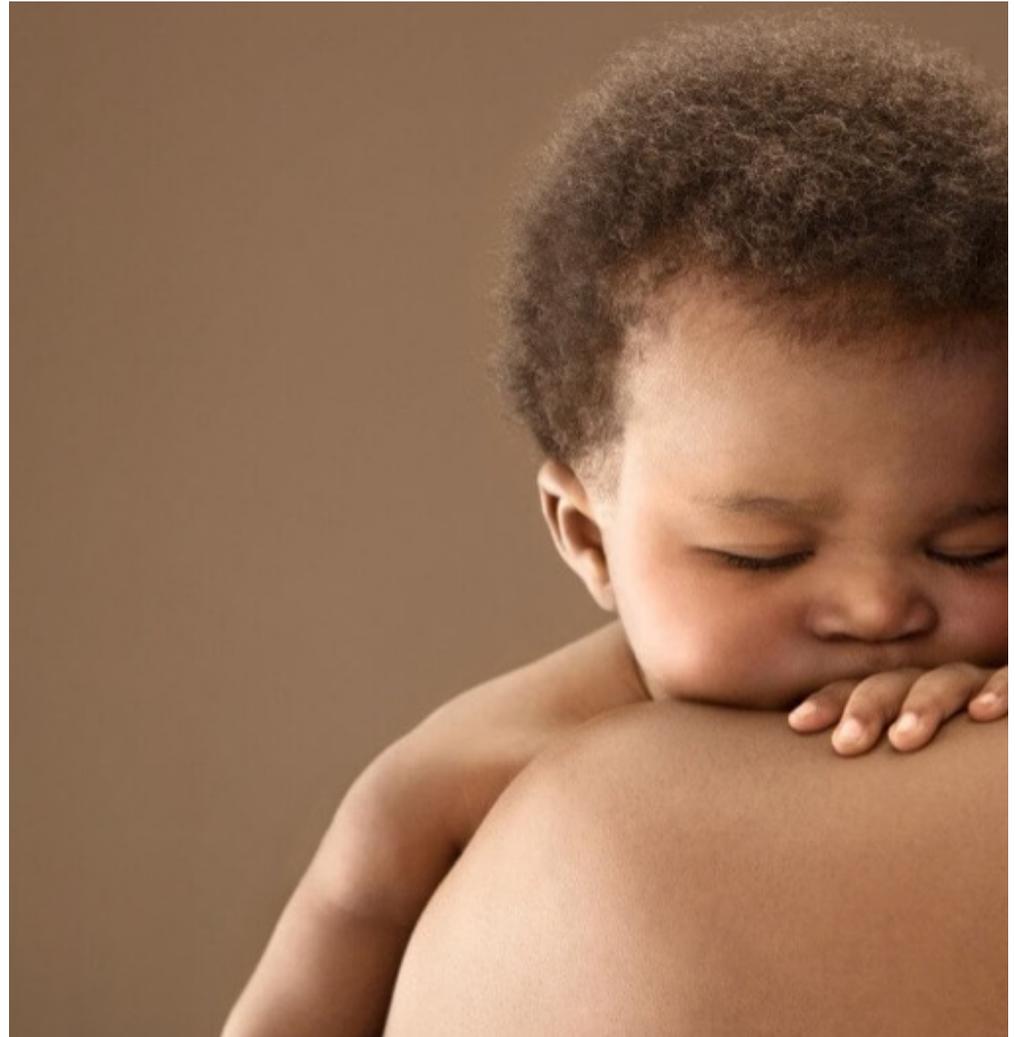
Power of parental sensitivity

- Human infant dependent on parent as:
 - Protector/nurturer
 - **Responsive partner/co-regulator**



Parent serves as co-regulator

- Neuroendocrine regulation
- Protection from danger
- Emotion regulation
- Behavioral regulation



Biological dysregulation

Early adversity leads to biological dysregulation

Human, non-human primate and rodent studies have shown effects of early experience on HPA axis (e.g., Gunnar & Donzella, 2002; Levine, 1994)

HPA axis

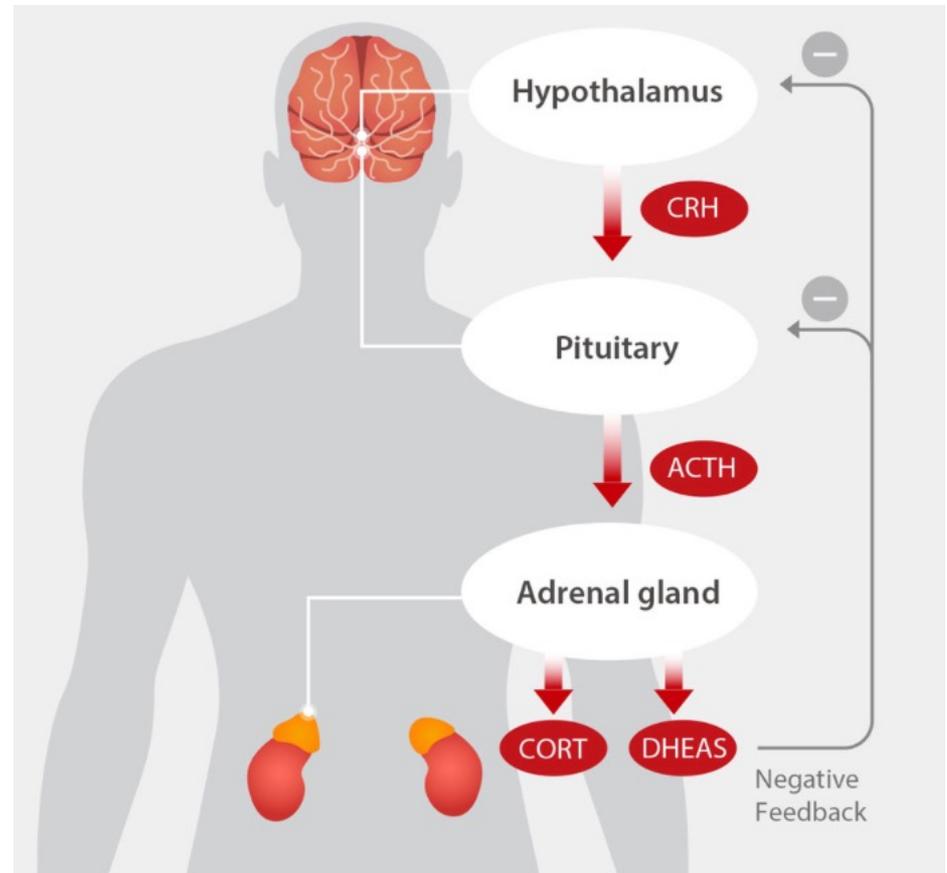
H - Hypothalamus

P - Pituitary

A – Adrenal

Cortisol an end product

Sensitive to effects of early
experience (Gunnar & Donzella,
2002)



HPA axis: 2 orthogonal functions

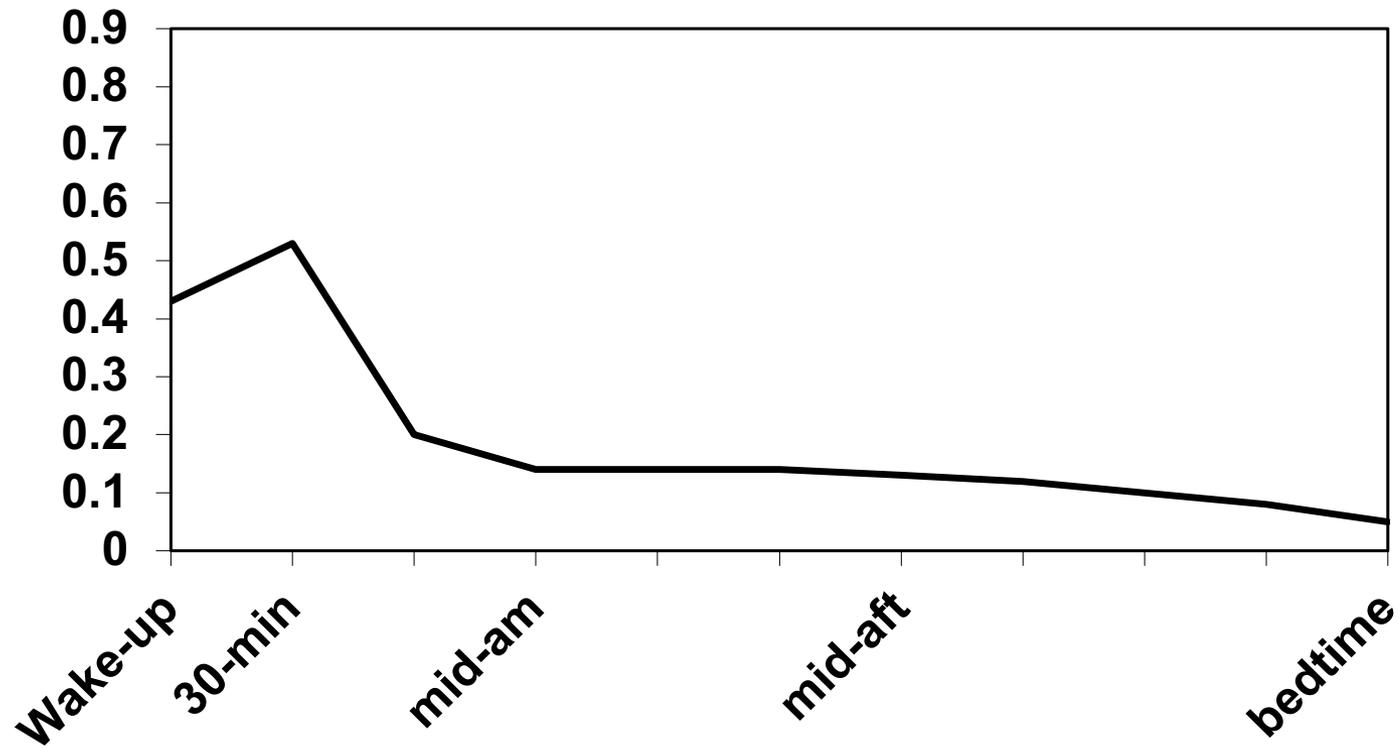
Stress reactive function

- Body's mounting a stress response

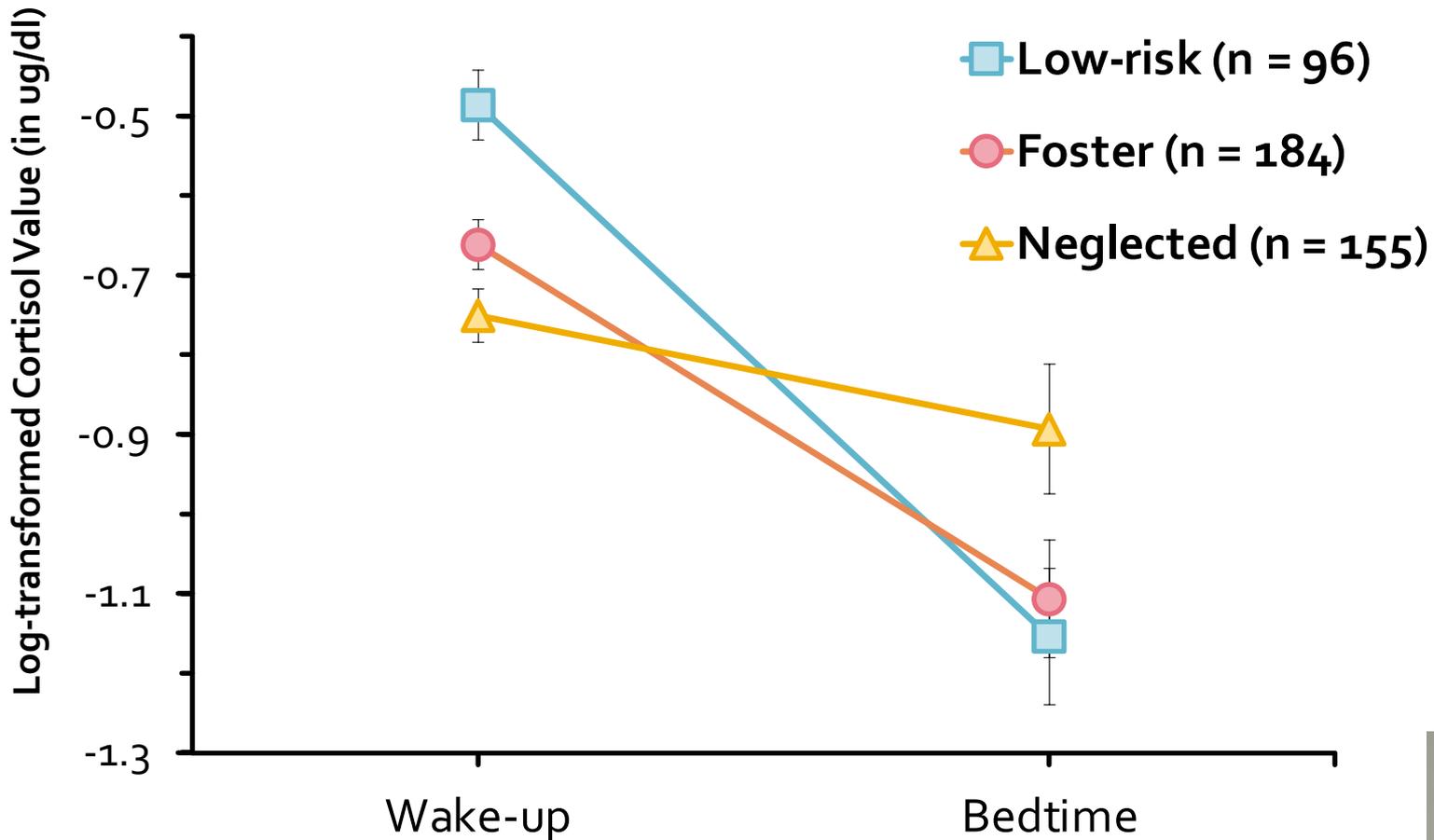
Diurnal function

- Organism functioning as diurnal (or nocturnal) creature

Typical diurnal pattern of cortisol



Early adversity and diurnal cortisol



Bernard et al., 2010, *Archives Ped Adol Med*





Dysregulation

- Biological dysregulation:
cortisol
- Behavioral dysregulation:
 - Behavior problems
 - Inhibitory control

Second target for intervention: Helping children develop better regulatory capacities

- Parental responsiveness predictive of child self-regulation (Raver, 1996)



Following the lead



Not following the lead

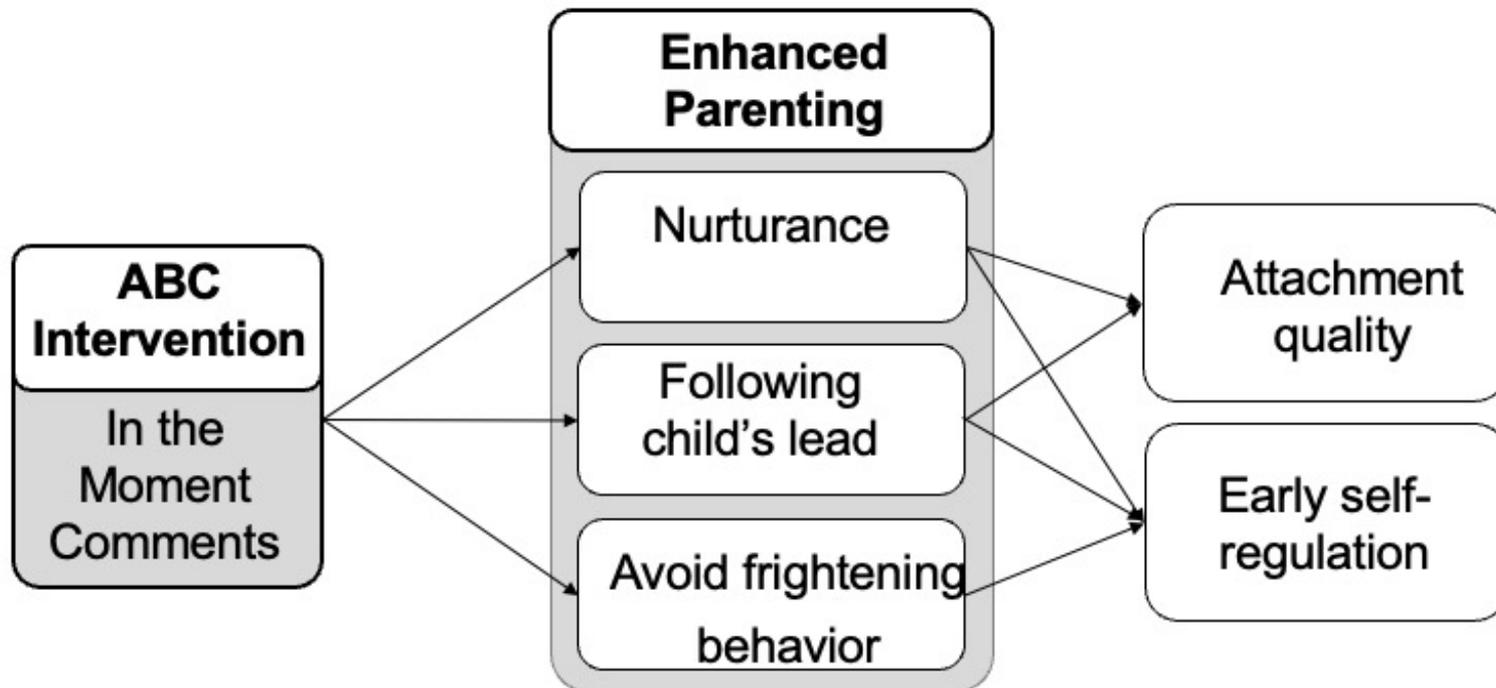


Supporting following the lead



That's perfect. Little things like that – even like her reaching out for something and you giving it to her. That's going to make her feel important and like she can have an effect on things around her

Model of intervention effects



Frightening behavior



Harsh/frightening behavior

- Harsh, frightening, and/or intrusive behavior
 - Undermines child's ability to regulate behavior and biology
 - Associated with disorganized attachment

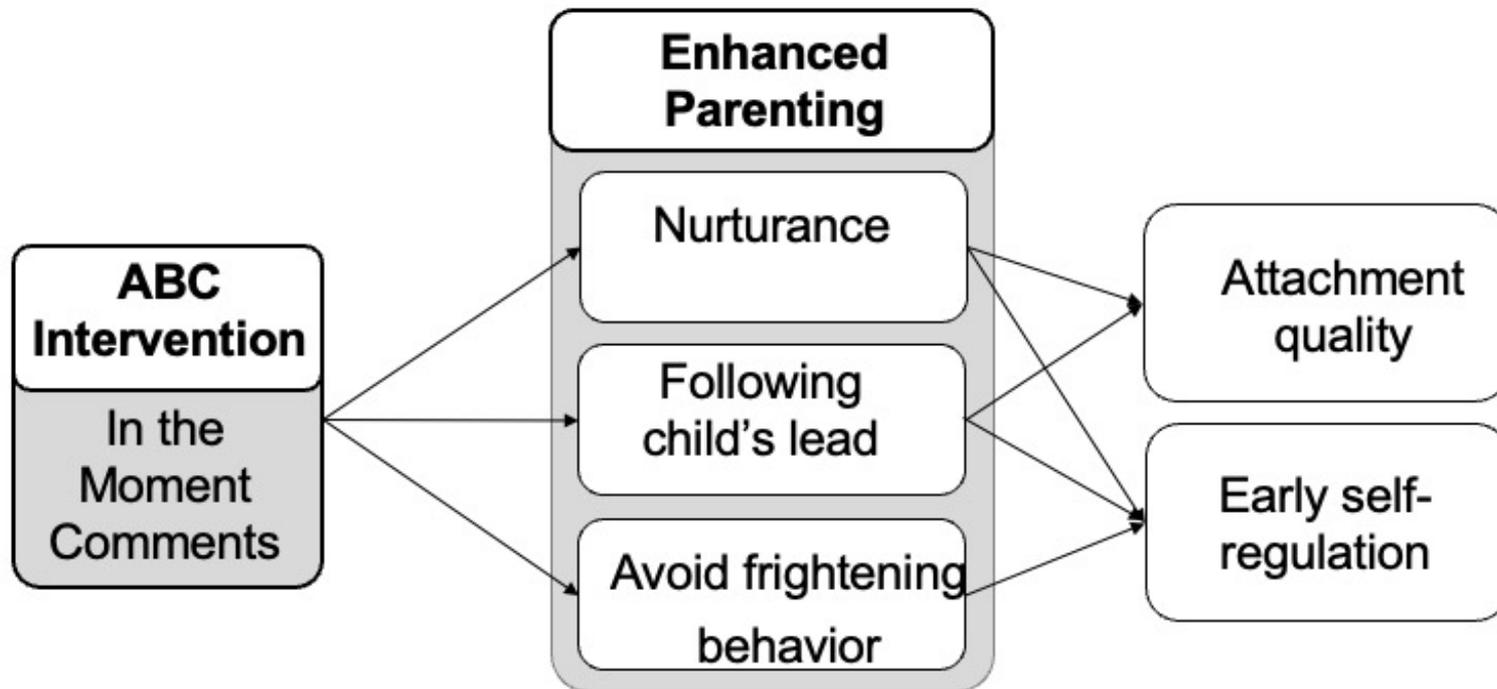
Carlson, 1996



Assessing effectiveness

- Randomly assigned children and parents to Attachment and Biobehavioral Catch-up (ABC) or to an alternate intervention (DEF)
 - Focus here on outcomes for neglected children and children in out-of-home (foster) care
 - Children 3-24 months at start of intervention
 - About 120 participants in most analyses

Model of intervention effects



Control intervention: Developmental Education for Families (DEF)

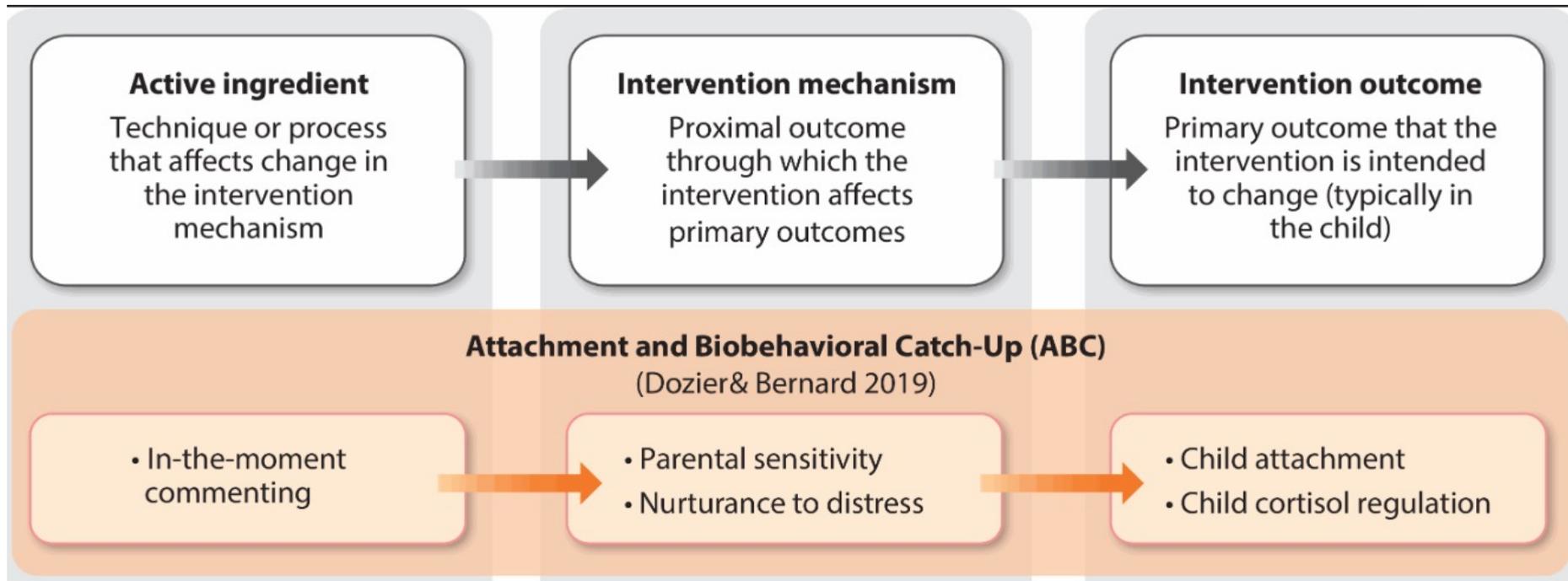
Control intervention
focused on cognitive
and motor
development

Structure same as for
ABC

10 weekly sessions in
home



Model of change



ABC effects on parents' sensitivity

Intervention mechanism

In-the-moment commenting predicts change in parenting

- In-the-moment commenting predicts parenting behavior
 - Higher frequency of on-target comments
 - More components included in comments



- Greater increases in parent following lead and greater decreases in intrusiveness

Caron et al., 2018, *JCCAP*



ABC effects on parental sensitivity

- Parents who received ABC more sensitive and less intrusive than DEF mothers at post-intervention (medium to large effects)
- These gains sustained 3 years later

Bick & Dozier, 2013; Raby et al. 2019;
Yarger et al., 2016



Parents' attachment narratives

Raby et al. (2021). *Development and Psychopathology*

Secure base script knowledge assessment 8 years after intervention (Theo Waters' measure)

Mothers instructed: Come up with the best story you can using the words below starting with Tommy.

Doctor's Office

Tommy

hurry

mother

bike

doctor

toy

hurt

cry

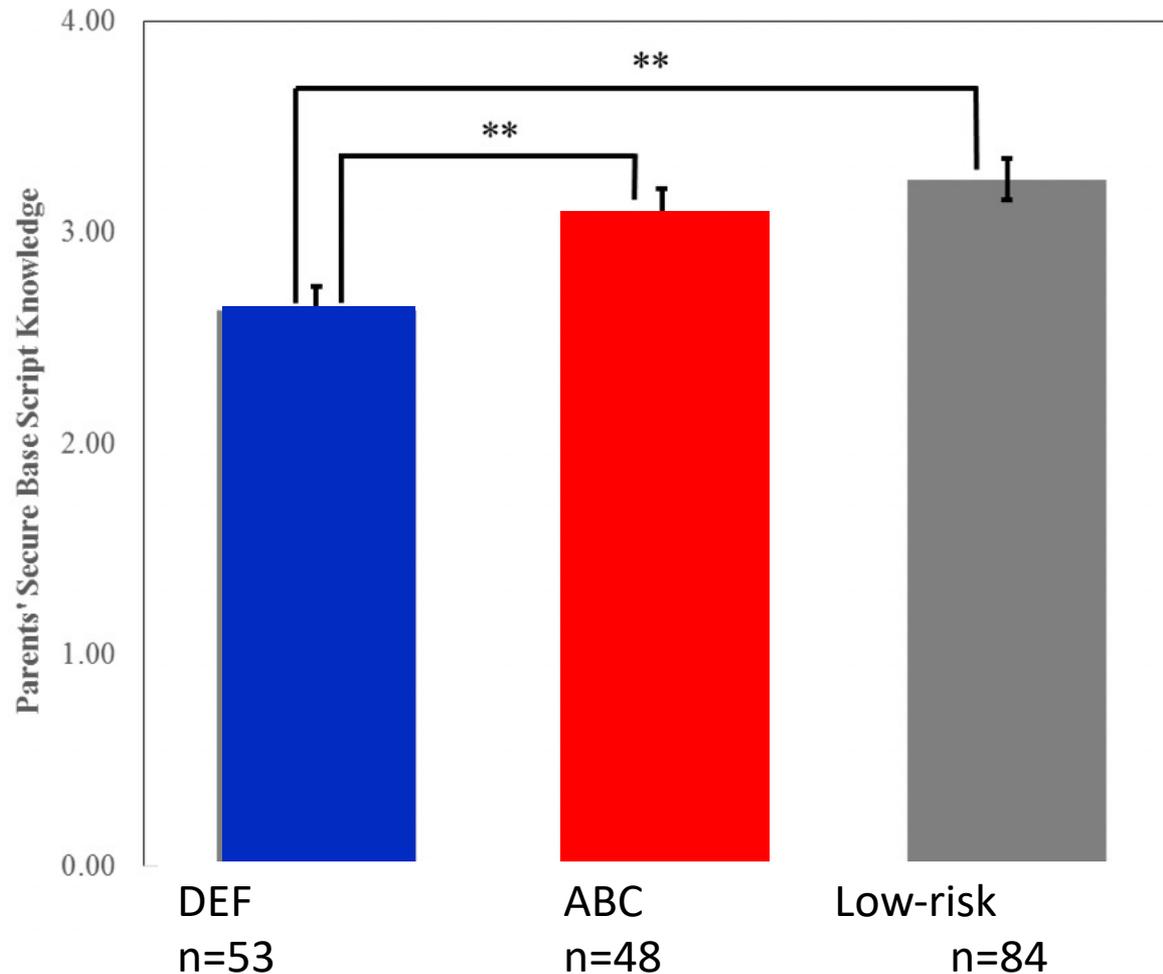
stop

mother

shot

hold

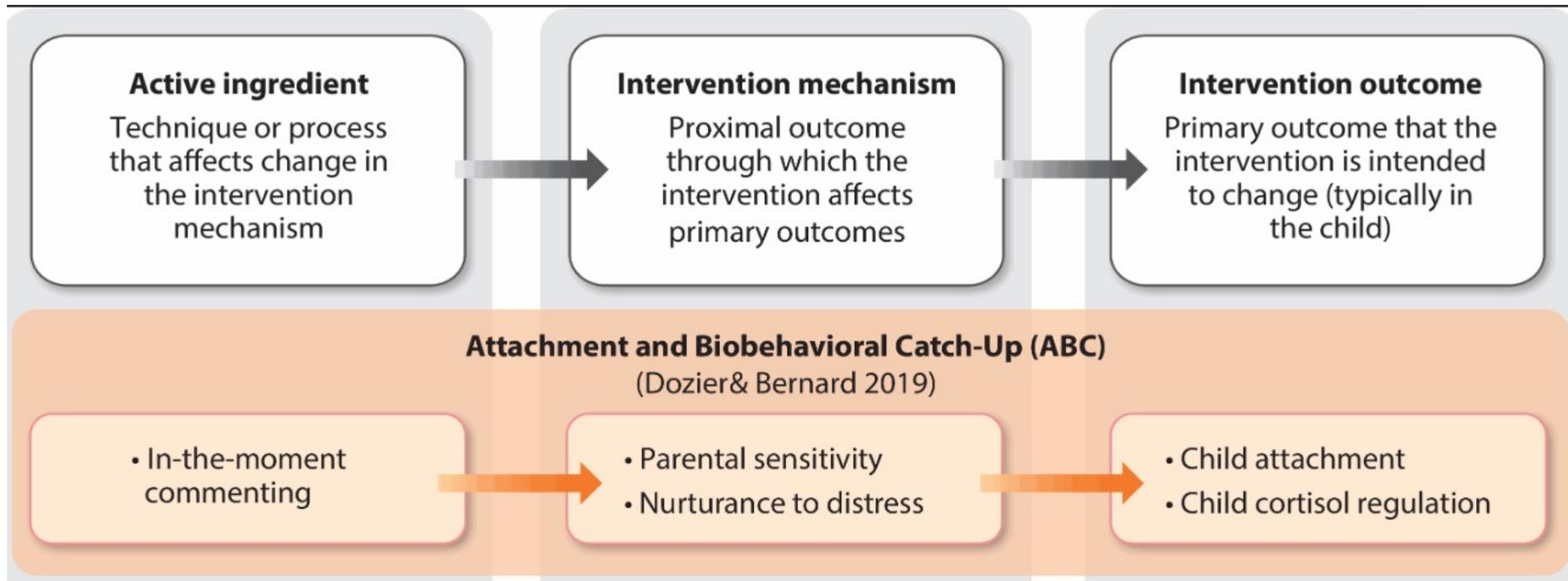
Intervention effects on parents' secure base script knowledge



Raby et al., 2021



Model of change



Intervention effects on attachment

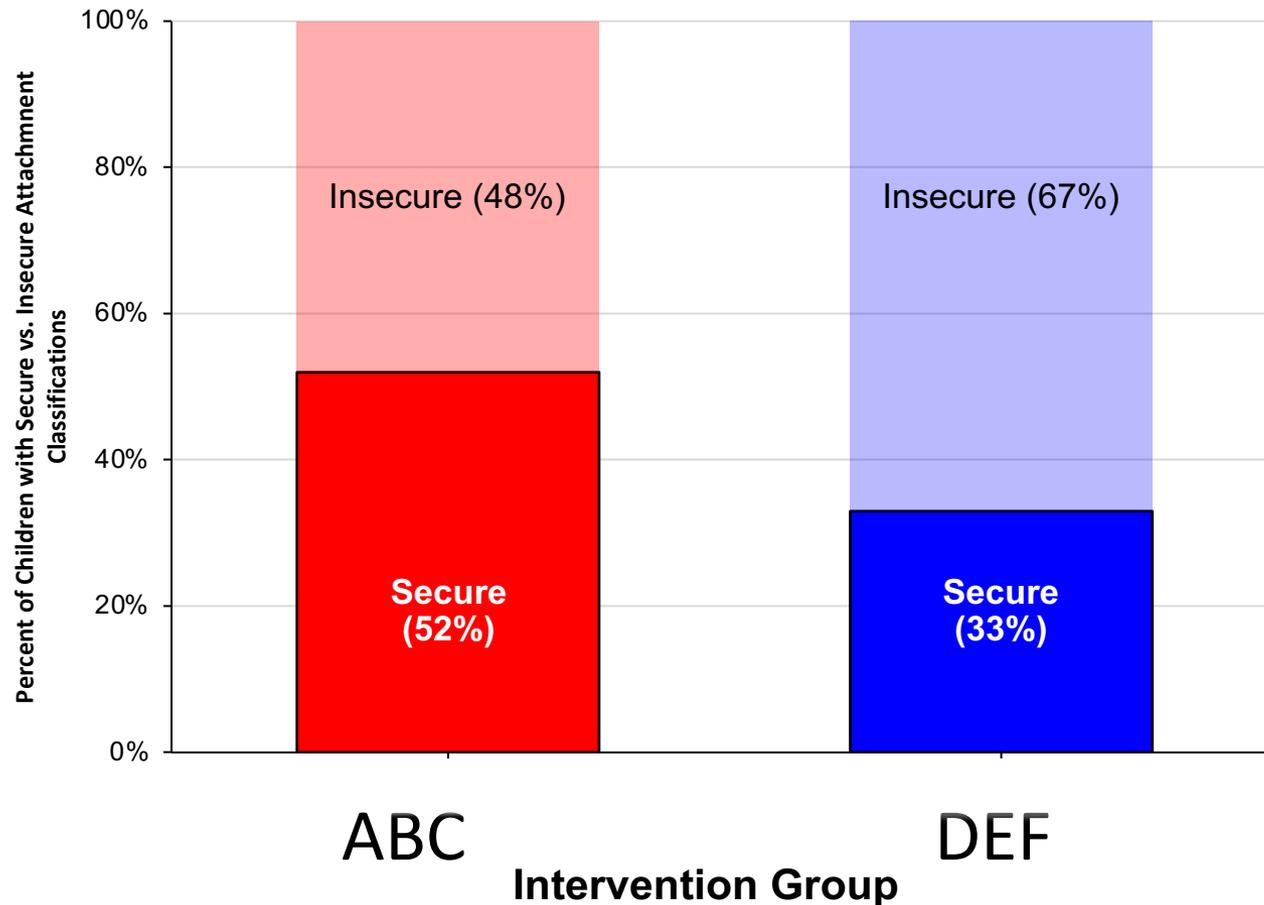
- Adversity places children at risk for disorganized attachment and related brain development
- Can ABC alter this trajectory?

ABC effects on child attachment organization

- Assessed in Strange Situation
- Parents involved in child welfare system
- N=120

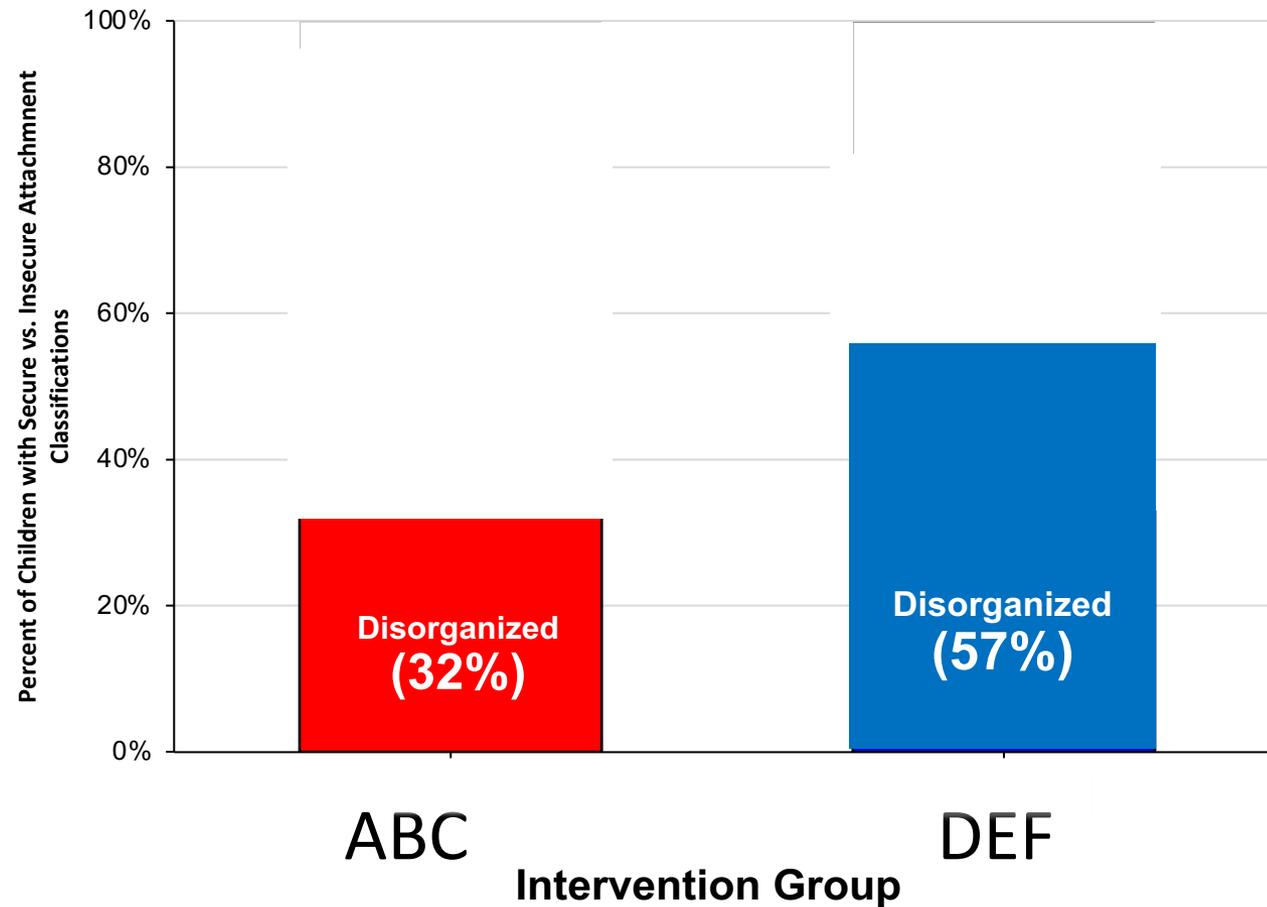


ABC effects on attachment security



Bernard et al., 2012, *Child Development*.

ABC effects on attachment organization



Bernard et al., 2012, *Child Development*.



Kerns Attachment Measure (Age 9)

Example of question

Some kids find it easy to trust their mom.

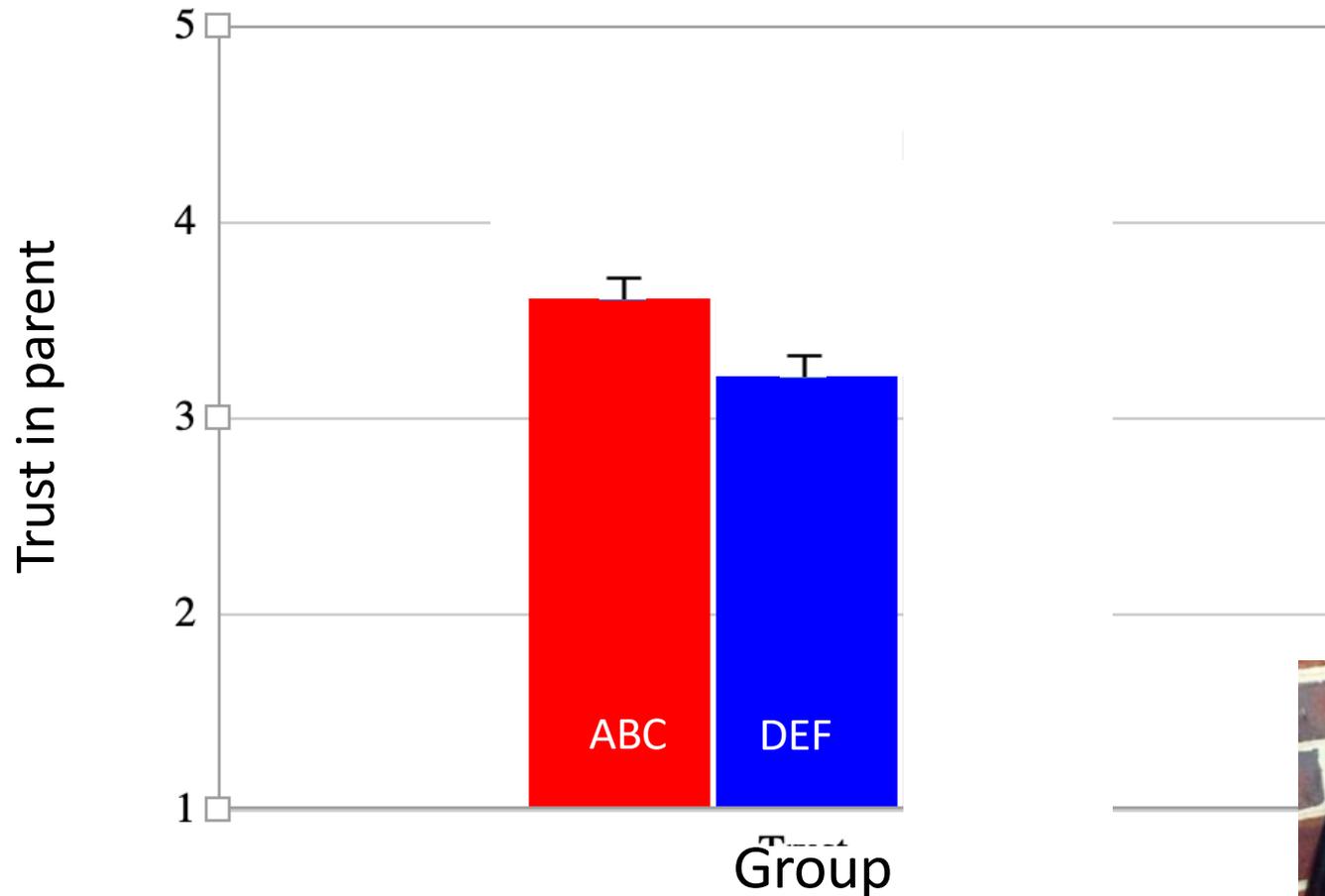
BUT

Other kids are not sure if they can trust their mom.

Which is true of you?

How true? A little or a lot?

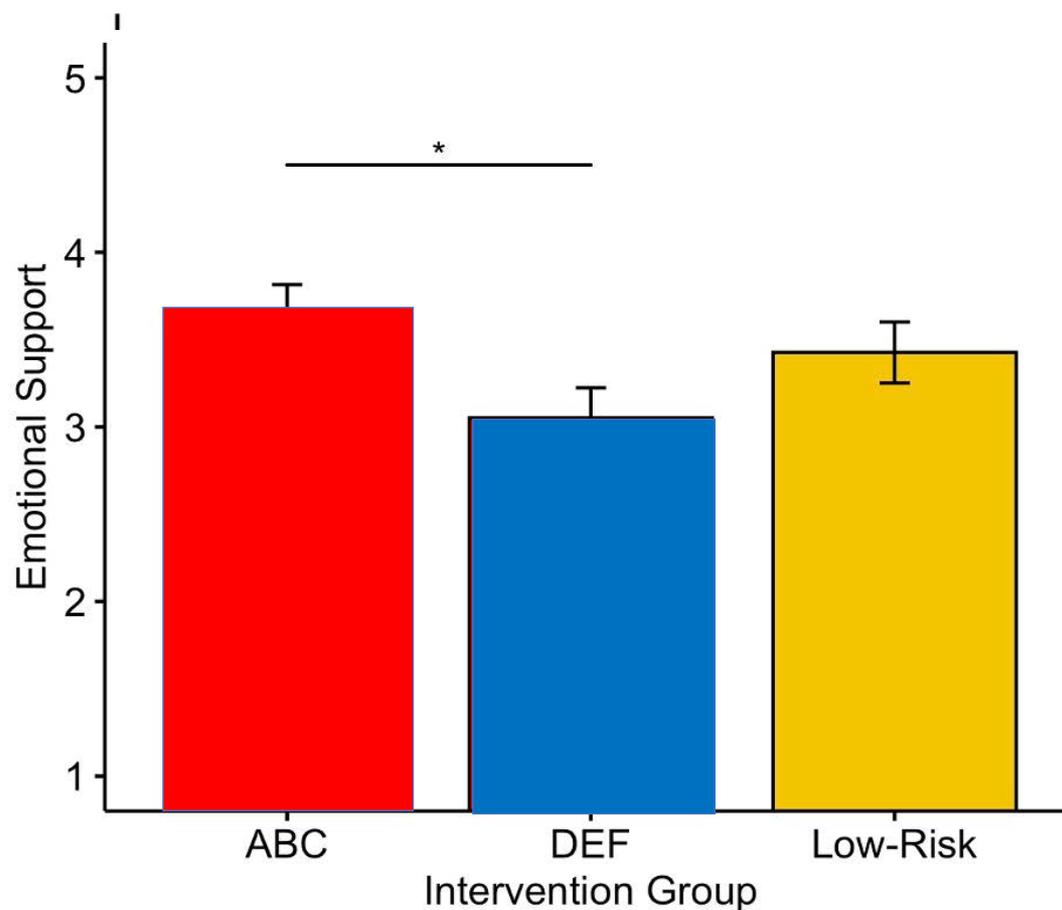
ABC effects on child feelings of trust in parent at age 9 (Kerns)



Zajac et al., 2020, *JCPP*



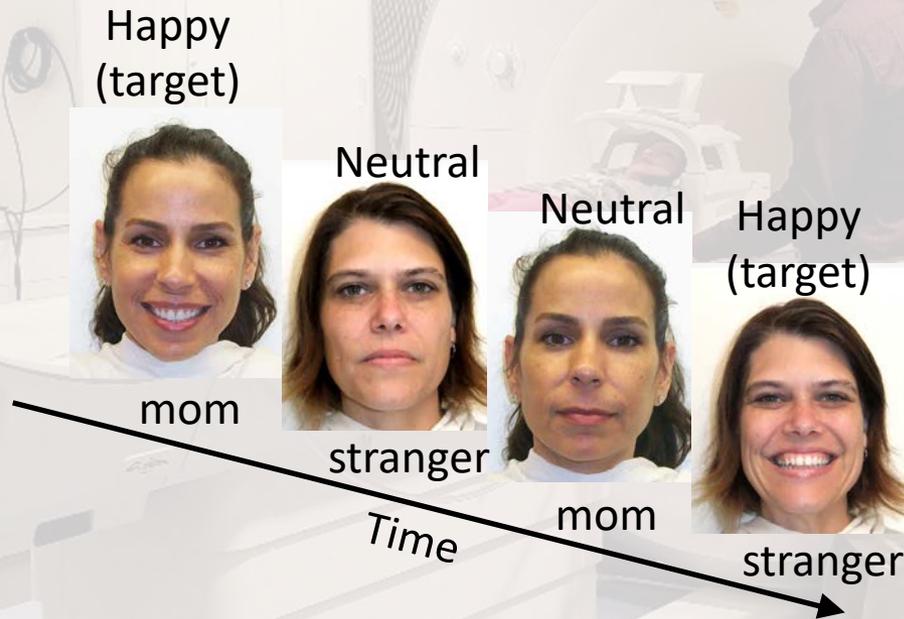
ABC effects on emotional support from mother at age 14 (Network of Relationships Inventory)



Miller et al. 2024, *Development and Psychopathology*



Intervention effects on brain development: Does ABC affect how children respond to maternal cues? (Age 8-12 years)

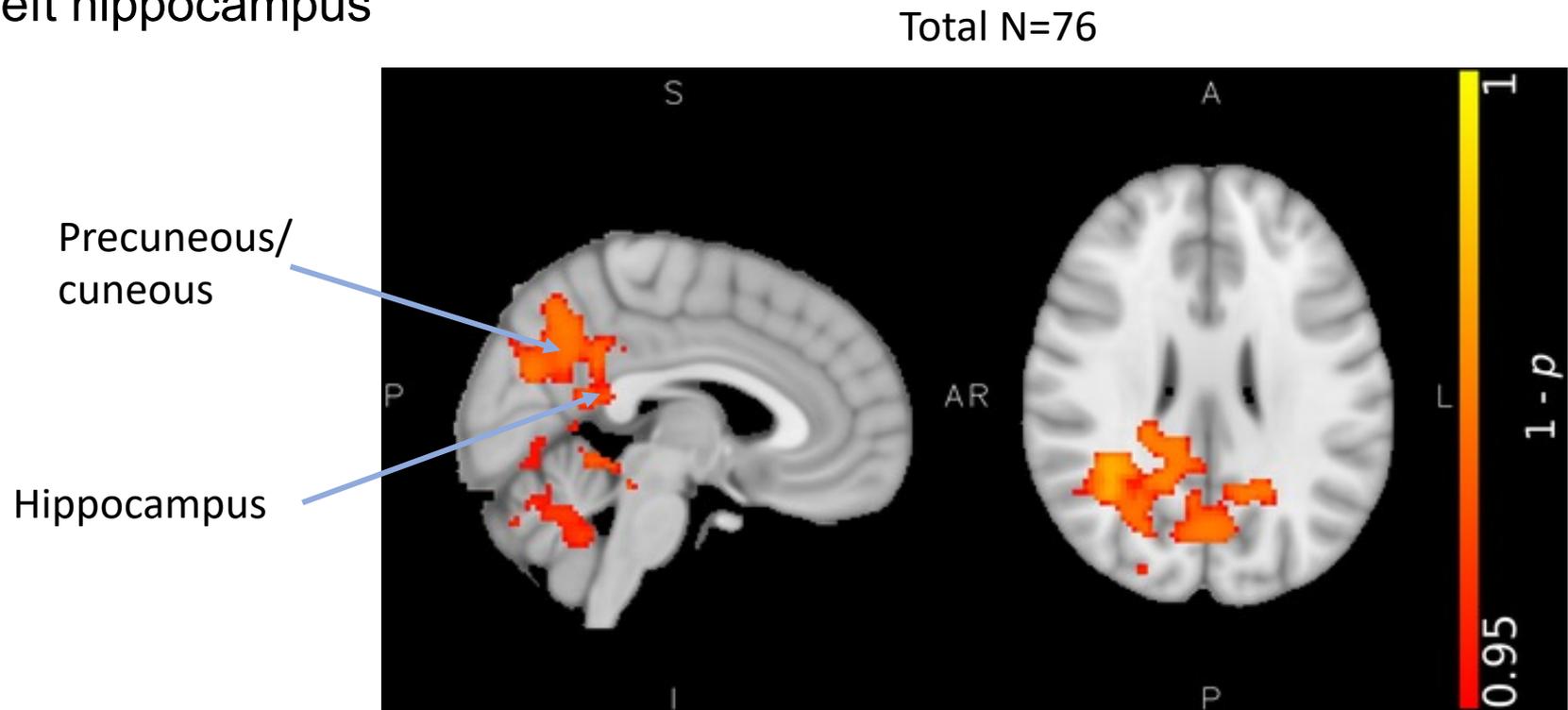


Push button when you see happy face.

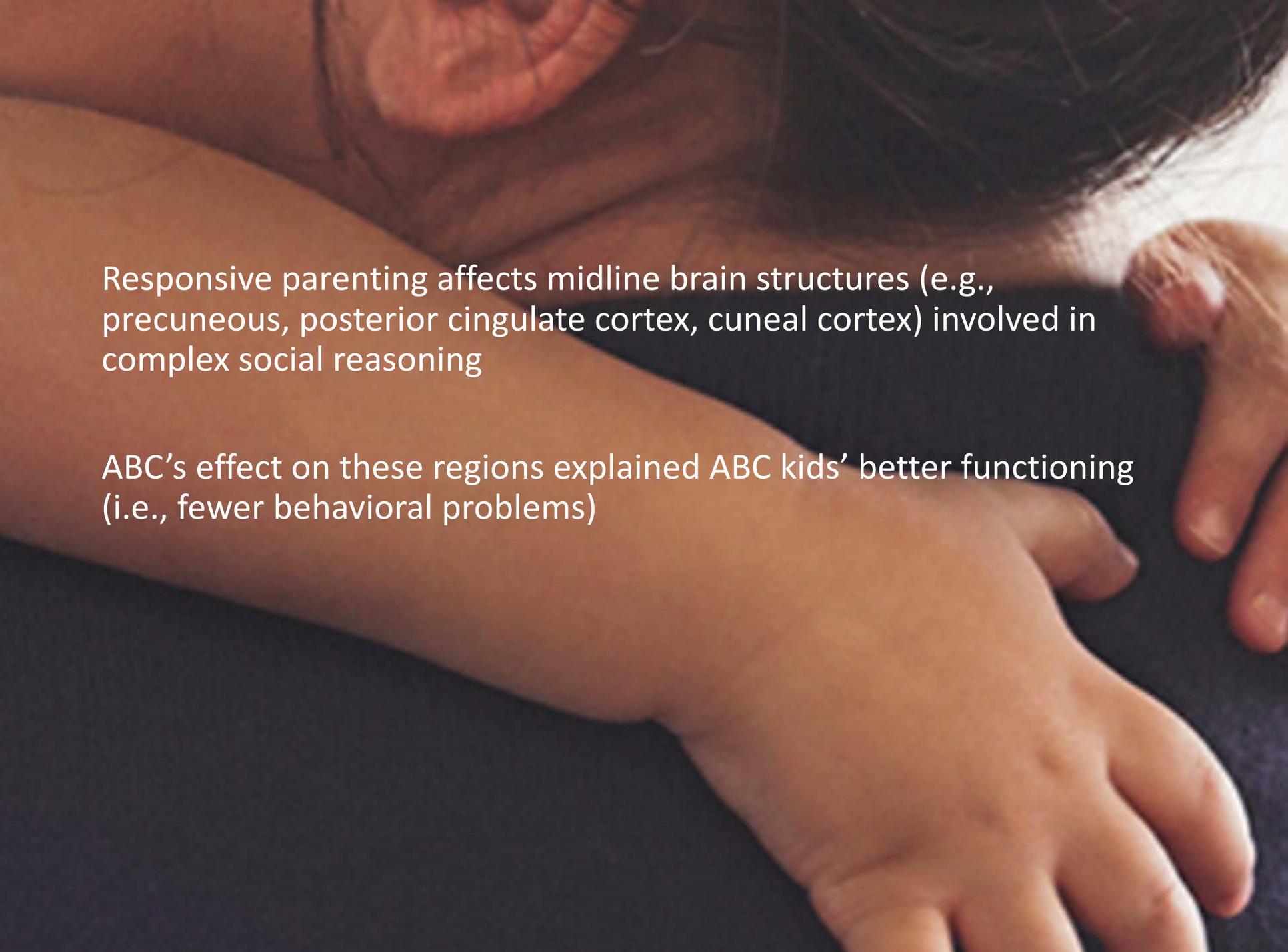


Mother vs. stranger: Intervention effects

- ABC group showed greater activation than DEF group in areas involved in social cognition (development of theory of mind, etc.):
 - Precuneus
 - Cuneal cortex
 - Occipital cortex
 - Left hippocampus



Valadez, et al., 2020, *American Journal of Psychiatry*



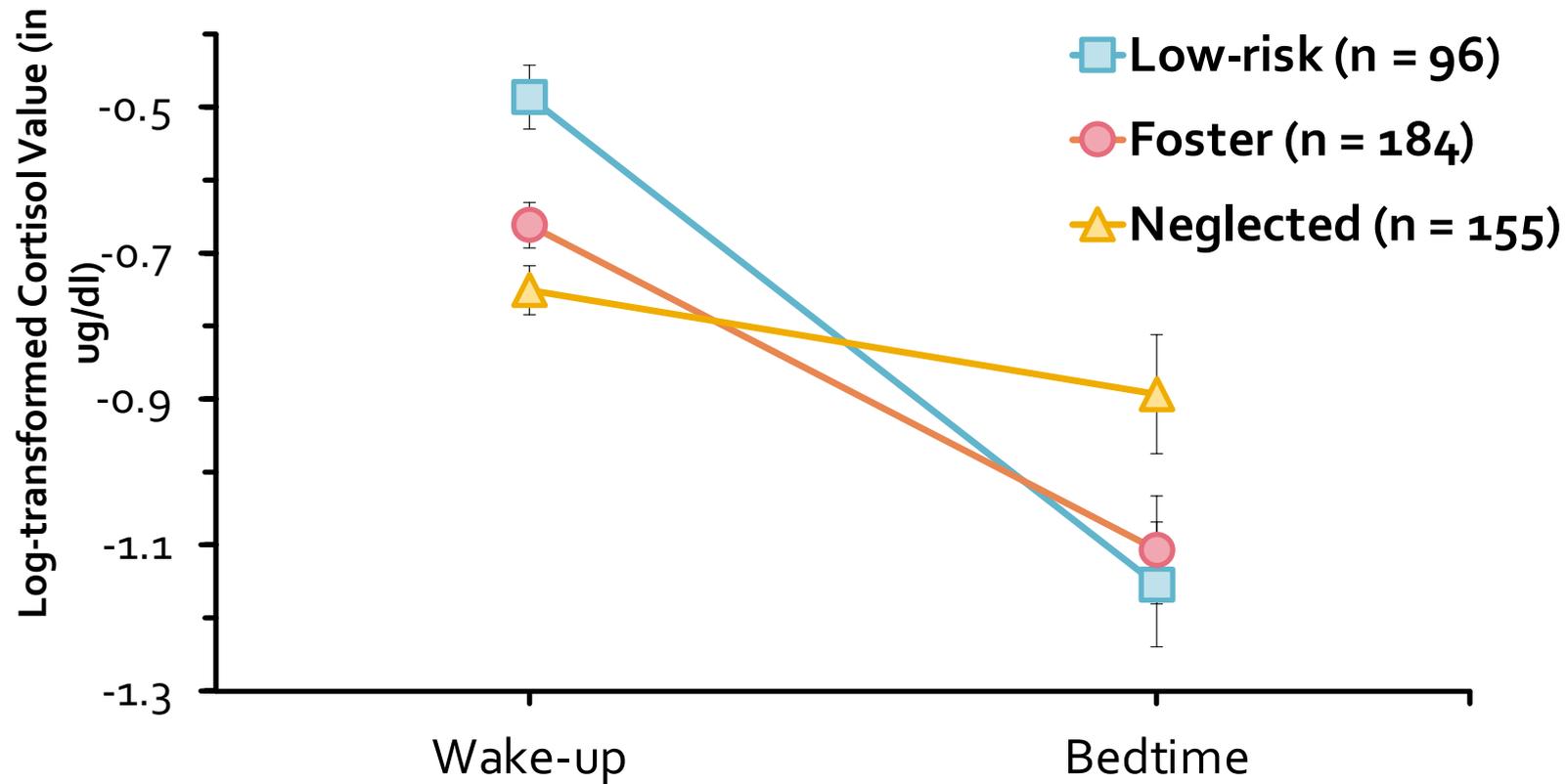
Responsive parenting affects midline brain structures (e.g., precuneous, posterior cingulate cortex, cuneal cortex) involved in complex social reasoning

ABC's effect on these regions explained ABC kids' better functioning (i.e., fewer behavioral problems)

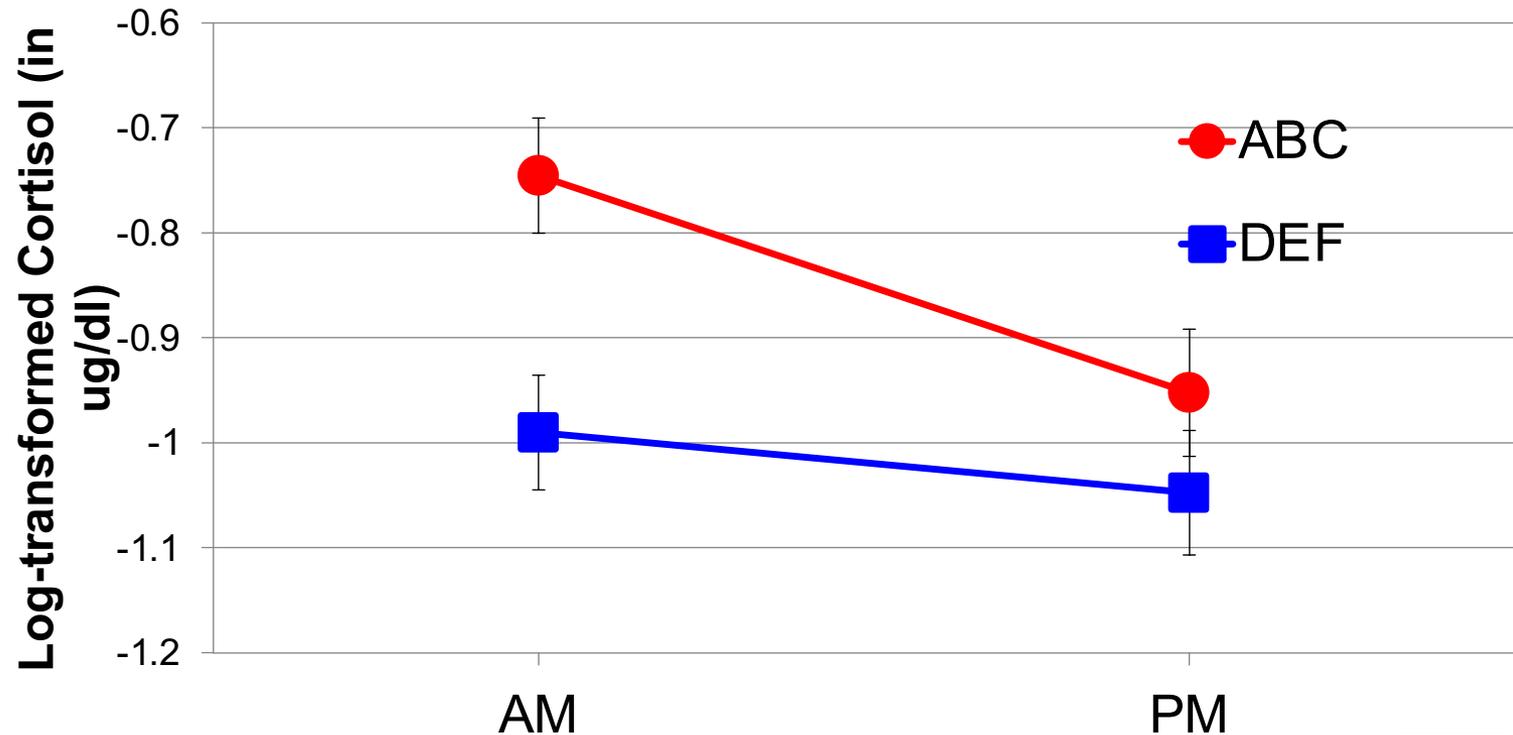
ABC effects on physiological regulation

- Adversity places children at risk for dysregulated physiology
- Can ABC alter this trajectory?

Early adversity and diurnal cortisol



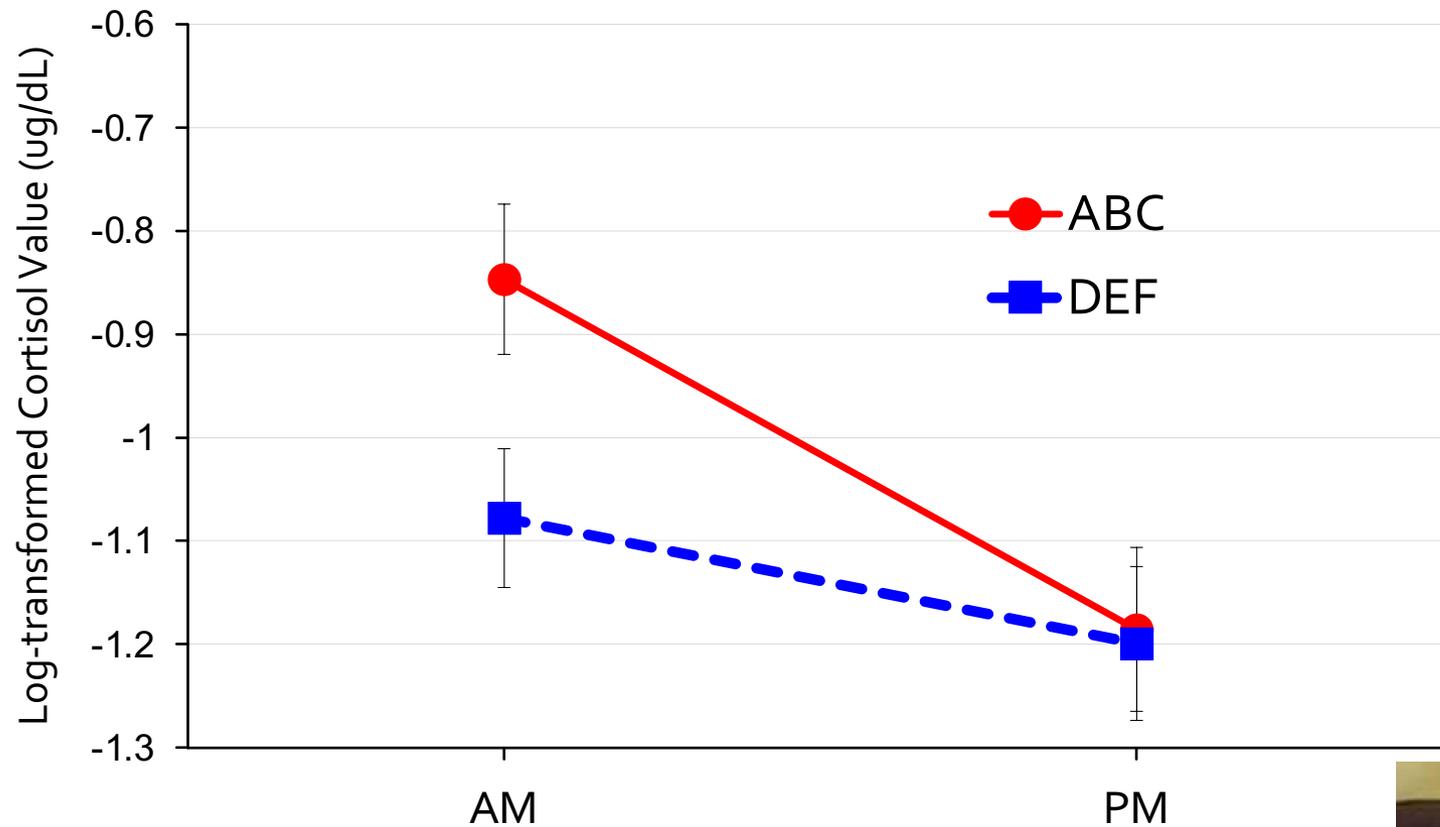
ABC effects on diurnal cortisol 1 month post-intervention



Bernard, Dozier, et al., 2015, *Development and Psychopathology*



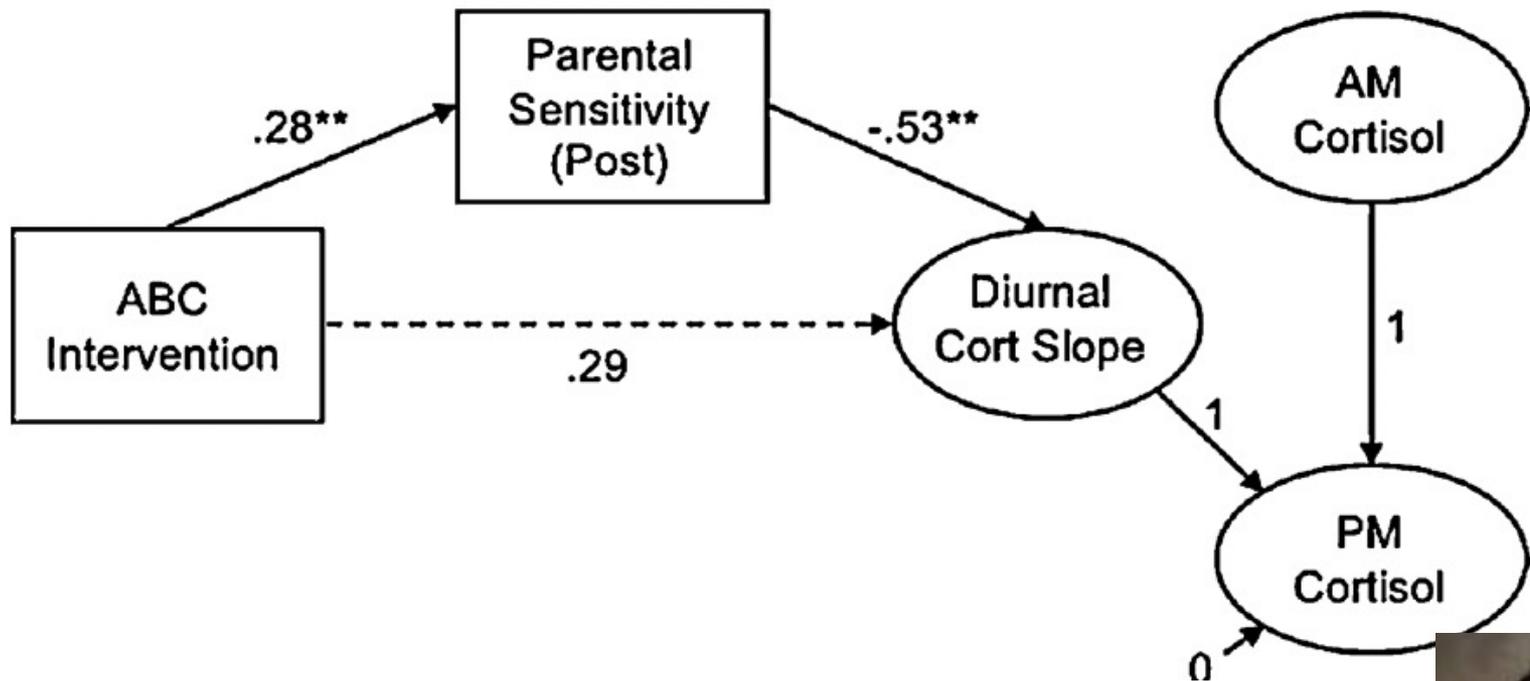
ABC effects on diurnal cortisol 3 years post-intervention



Bernard, Hostinar, & Dozier, 2015, *JAMA - Peds*



ABC effects on diurnal cortisol 8 years post-intervention mediated by parental sensitivity



Garnett et al., 2020, *Psychoneuroendocrinology*



Other evidence of ABC effects on physiological regulation

- Autonomic nervous system regulation
 - Infancy – greater RSA reactivity for ABC than DEF infants (Tabachnick, Eiden et al., 2022, *Developmental Psychobiology*)
 - Middle childhood – higher resting RSA for ABC than DEF (Tabachnick et al., 2019, *Biological Psychiatry*)

Intervention effects on executive functioning, regulation of behavior and emotions, and related brain development

Adversity leads to deficits in executive functioning, regulation of behavior and emotions

Can ABC enhance executive functioning and related brain development?

Inhibitory control

- Being able to sit quietly in school key to success
 - Doing what one is supposed to do
 - Inhibiting urge to do what one wants to do



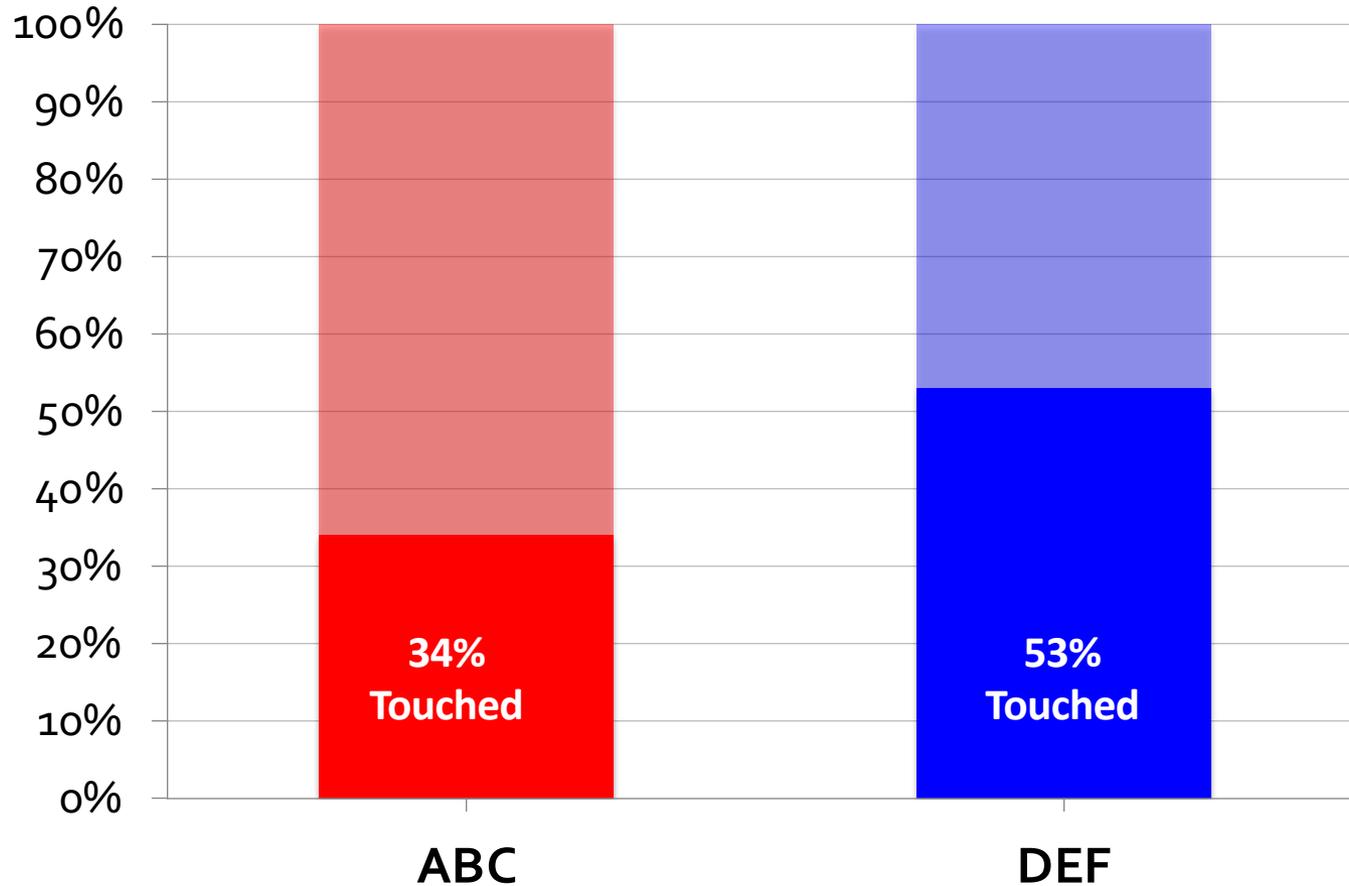
Assessment of inhibitory control

- Put attractive toys in front of child
- Tell him or her not to play with them, instead play with crayons (boring in this context)





Intervention effects on inhibitory control

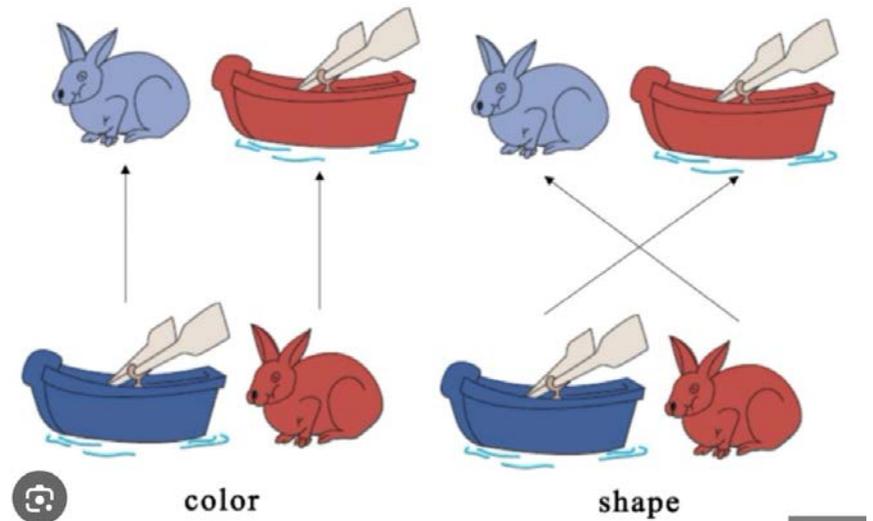


Lind, et al., 2017, *Child Development*

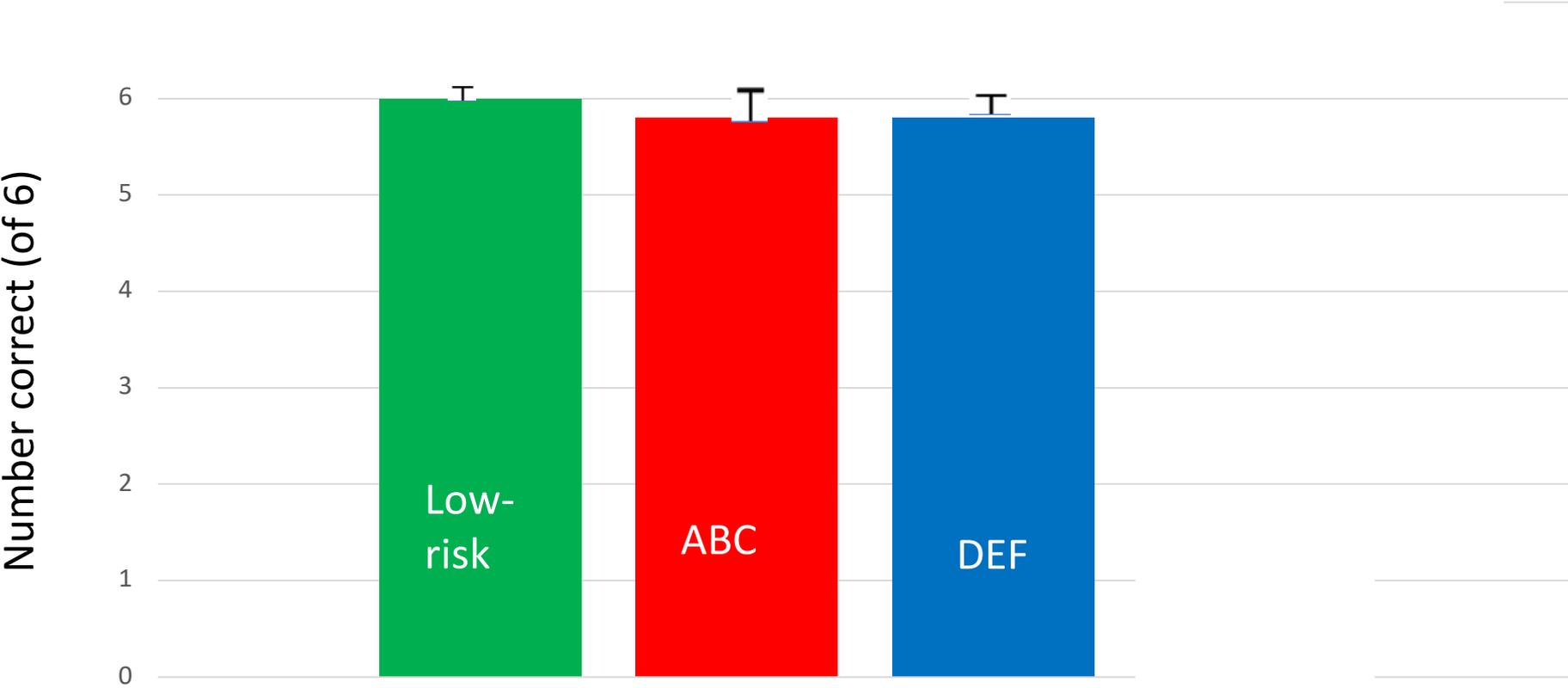


Intervention effects on executive functioning: Set shifting

- Assess executive functions in Dimensional Change Card Sort (DCSS)
 - Foster children
 - Sort according to one dimension, then switch dimensions
 - Assess number correct pre- and post-dimensional change

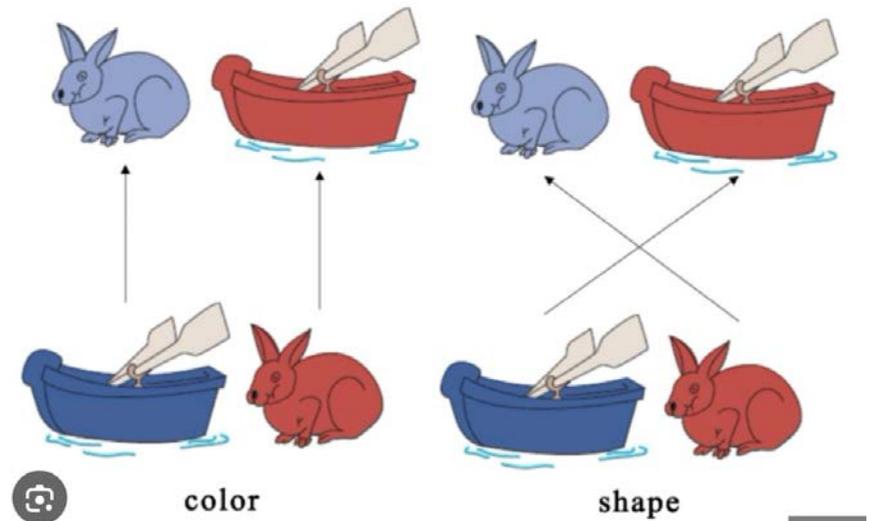


Pre-switch

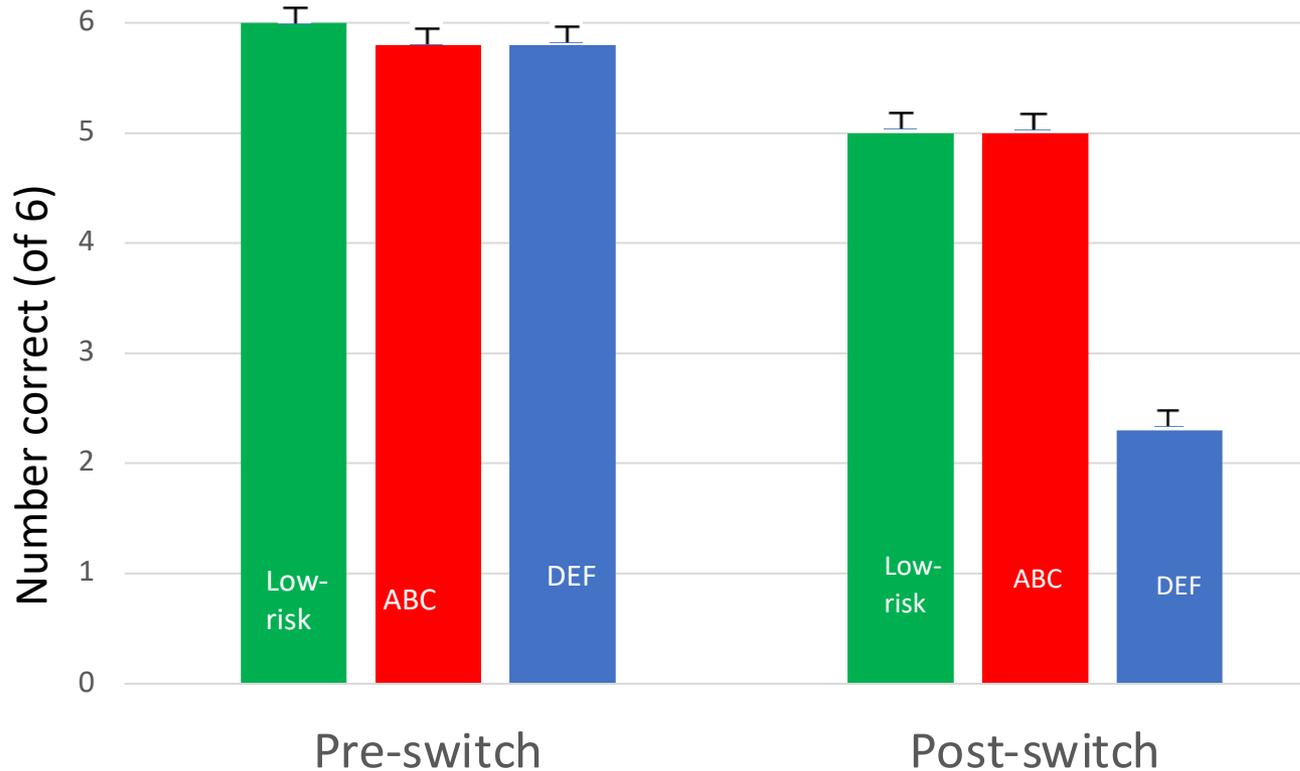


Intervention effects on executive functioning: Set shifting

- Assess executive functions in Dimensional Change Card Sort (DCSS)
 - Foster children
 - Sort according to one dimension, then switch dimensions
 - Assess number correct pre- and post-dimensional change

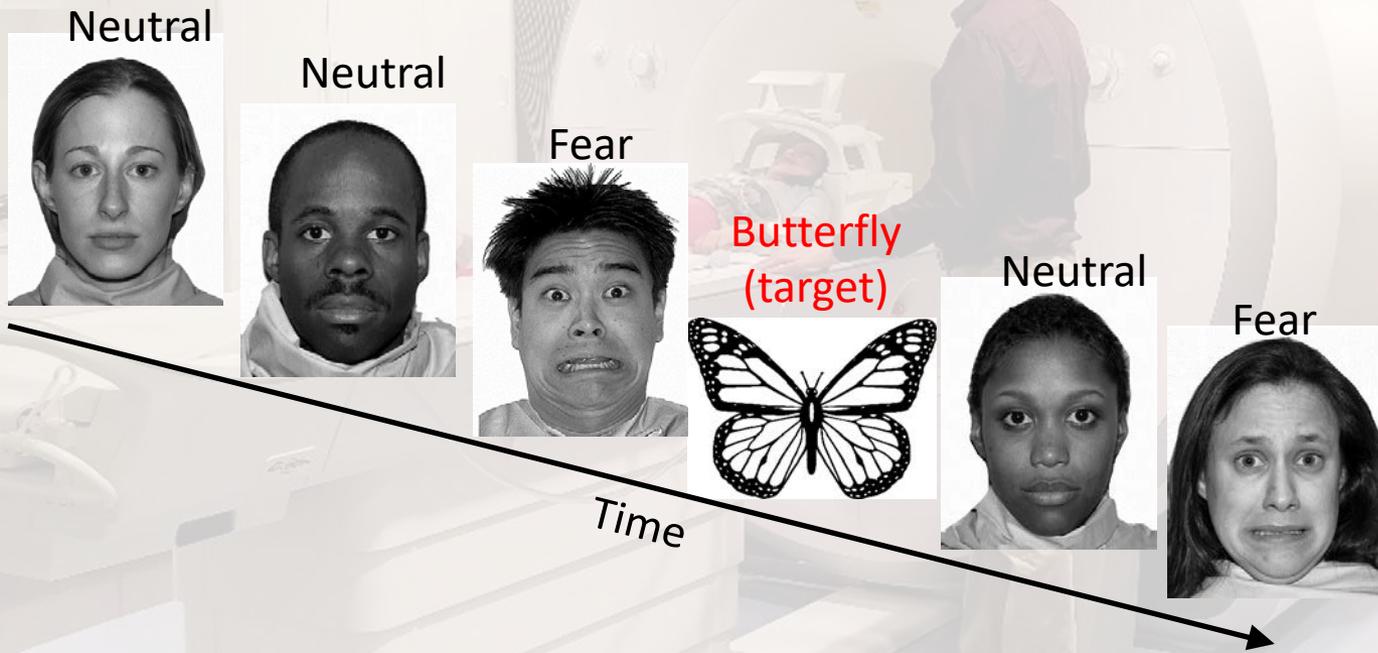


ABC effects on pre-switch to post-shift (foster children)



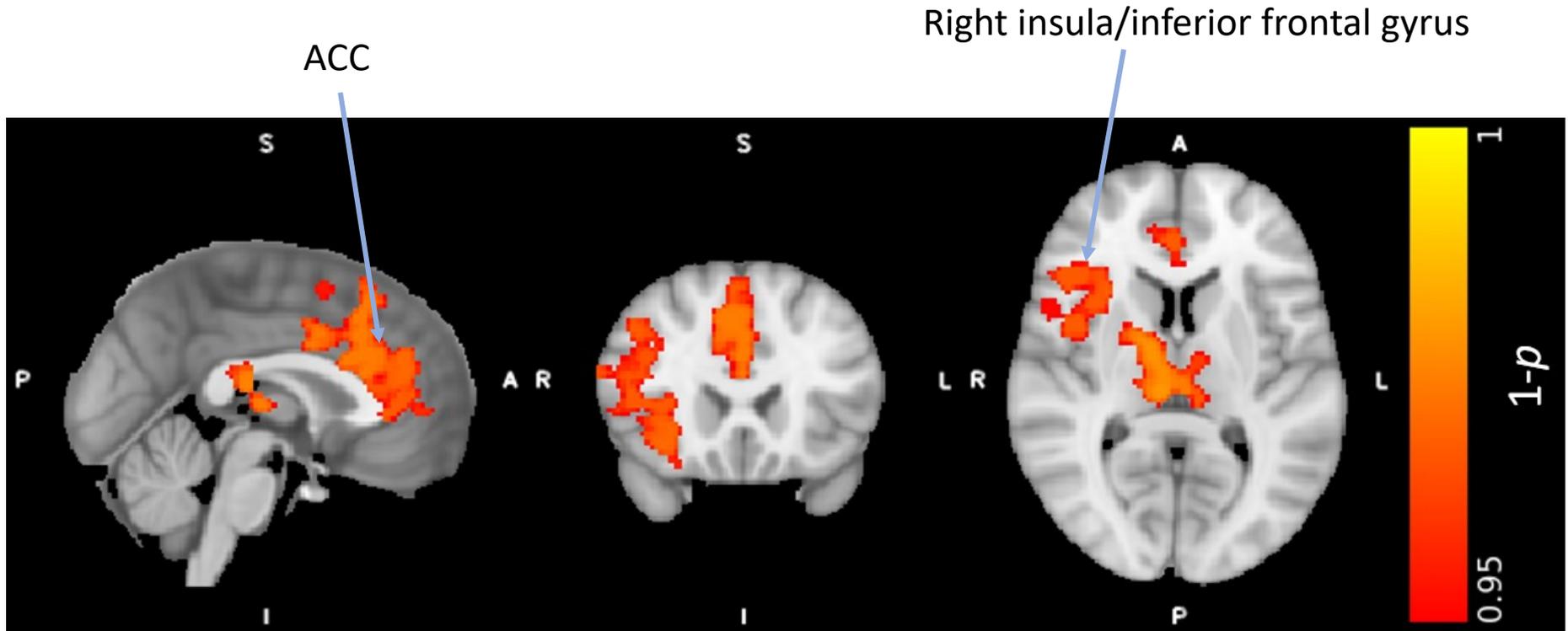


Emotional faces task – age 8-12 years



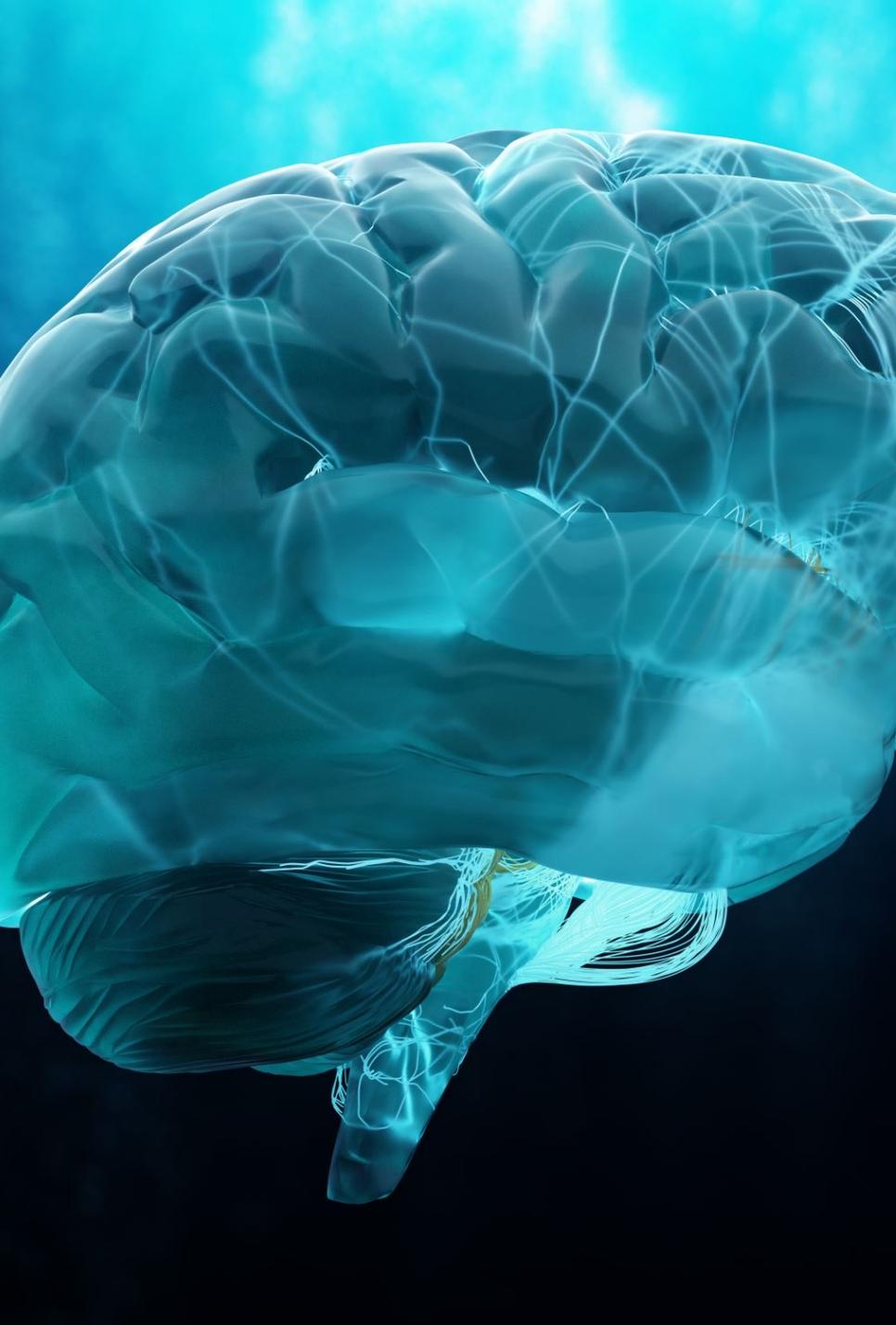
Push button when you see butterfly

Faces vs. blank screen: Intervention effects



Children whose parents received ABC show greater activation than control children in ACC, inferior frontal gyrus, right insula, and right OFC

Valadez et al., 2024, *Journal of American Academy of Child and Adolescent Psychiatry*



- Amygdala-PFC connectivity mediates intervention effect on PFC activation
- ABC may help build brain that supports strong emotion regulation

Effects of ABC (nurturing, responsive parenting)

Infancy

- Attachment (Bernard et al., *Child Development*, 2012)
- Cortisol production (Bernard et al., *Development and Psychopathology*, 2015)
- DNA methylation (Hoye, *Development and Psychopathology*, 2020)

Early childhood

- Inhibitory control (Lind et al., *Child Development*, 2020)
- Set-shifting (Lewis-Morrarty et al., *Journal of Adolescent Health*, 2012)
- Emotion expression (Lind et al., *Child Abuse and Neglect*, 2014)
- Cortisol production (Bernard et al., *Development and Psychopathology*, 2015)
- Language development (Raby et al., *Developmental Science*, 2020; Bernard et al., *Child Maltreatment*, 2017)

Middle childhood

- Cortisol production (Garnett et al., 2020)
- Brain activation (Valadez et al., 2020 *AJP*; 2024 *JAACAP*)
- EEG oscillatory activity (Bick et al., *Biological Psychiatry*, 2019)
- ANS regulation (Tabachnick et al., *Biological Psychology*, 2020)
- Security (9-years-old) (Zajac et al., *Journal of Child Psychology and Psychiatry*, 2020)

Adolescence

- Brain structure (Korom et al., 2024)
- Brain function (Korom et al., 2025)
- Trust in parent (Miller et al., 2024)
- Depression and self-esteem (Chen et al., in prep)

Implementing in community

- As a field, dismal results
- Few programs implemented with adequate fidelity to model (Santa Ana, et al., 2008)

ABC Fidelity

In-the-moment commenting



In-the-moment comments often difficult for parent coaches

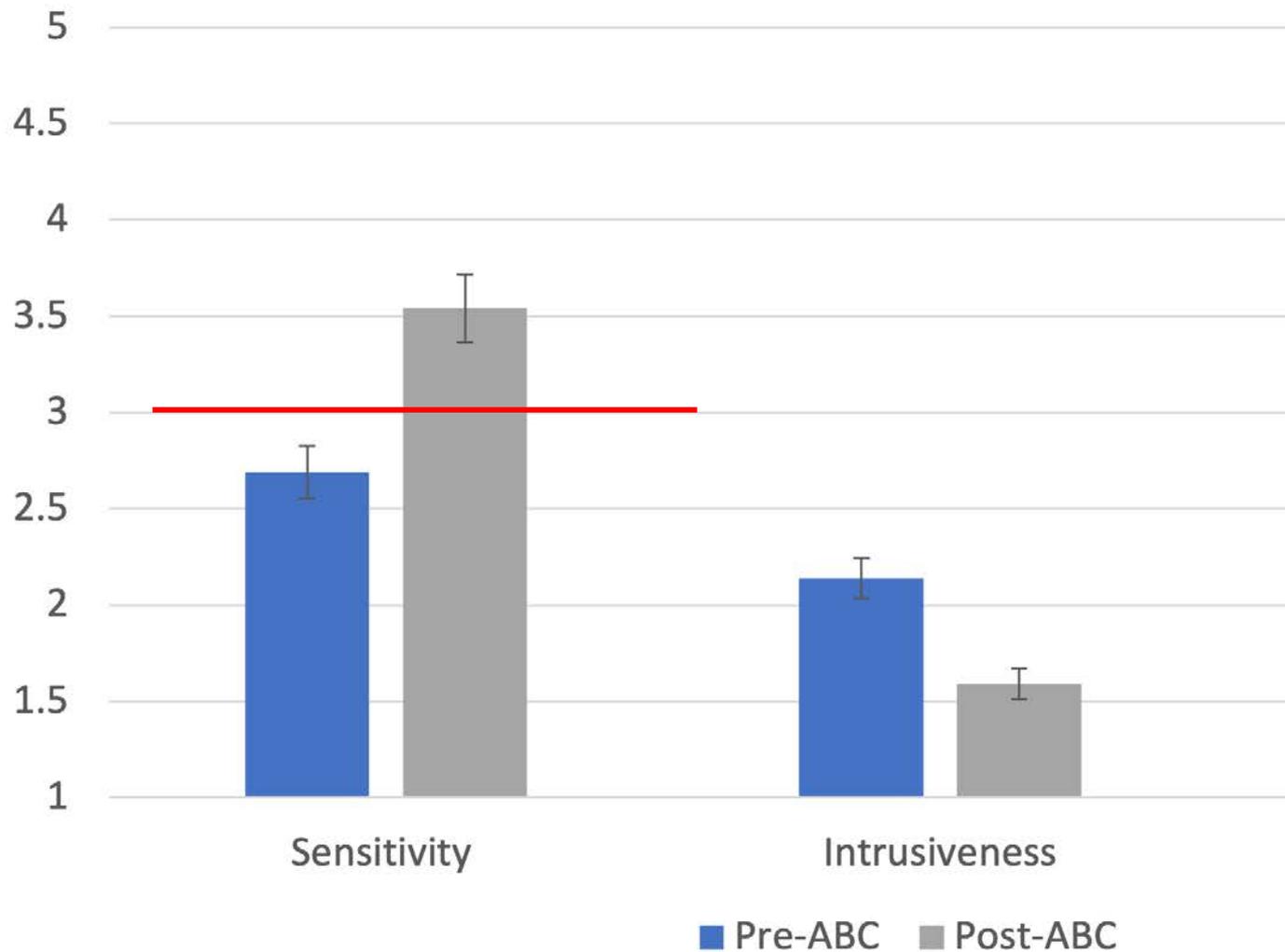
- Concerned about interrupting parent-child interaction
- Worried about being condescending to parent
- Not accustomed to being this active



Iterative process

- Through supervision, asked parent coaches to make more comments
 - Didn't increase in frequency
- Developed system for quantifying comments
 - Provided feedback regarding performance
 - Still didn't increase comments
- Had parent coaches code themselves
 - Voila!

Pre- and post-intervention parenting behaviors in community
(N = 502, 73 sites, 8 countries, 194 parent coaches)





Montage created at end of ABC





Grant support

NIH R01 MH074374

NIH R01 MH052135

NIH R01 MH084135

NIH R01 HD098525

NIH R01 MH119310

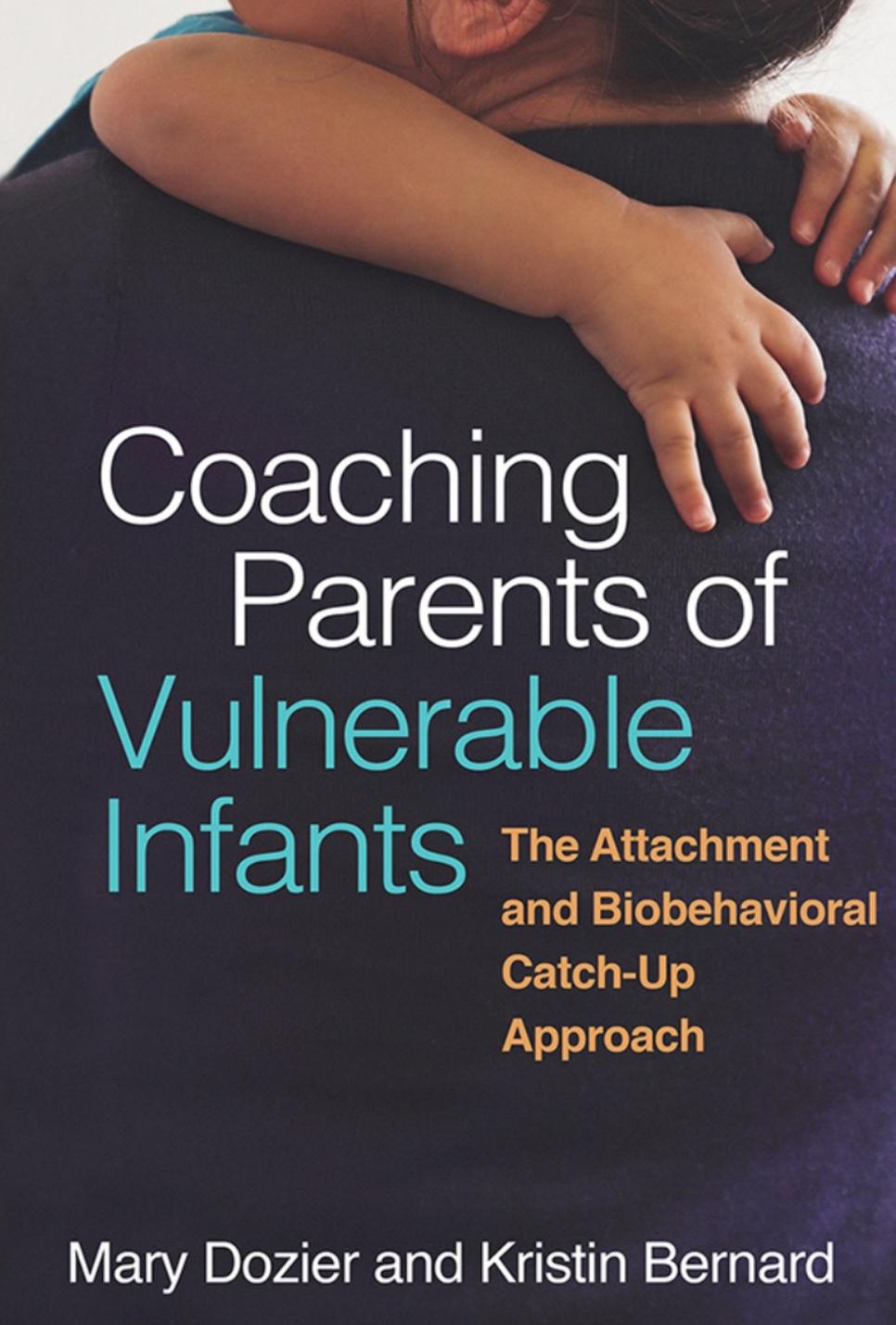
Edna Bennett Pierce (2006-2022)

Donor support

Longwood Foundation

Bennett Family Foundation

MacCready Family Foundation



Coaching Parents of Vulnerable Infants

**The Attachment
and Biobehavioral
Catch-Up
Approach**

Mary Dozier and Kristin Bernard

My email:

mdozier@udel.edu

Website:

www.abcparenting.org

Guilford Press