

Stress, Neurodevelopment, and Programs that Promote the Well-Being
of Children and Families: Early Childhood

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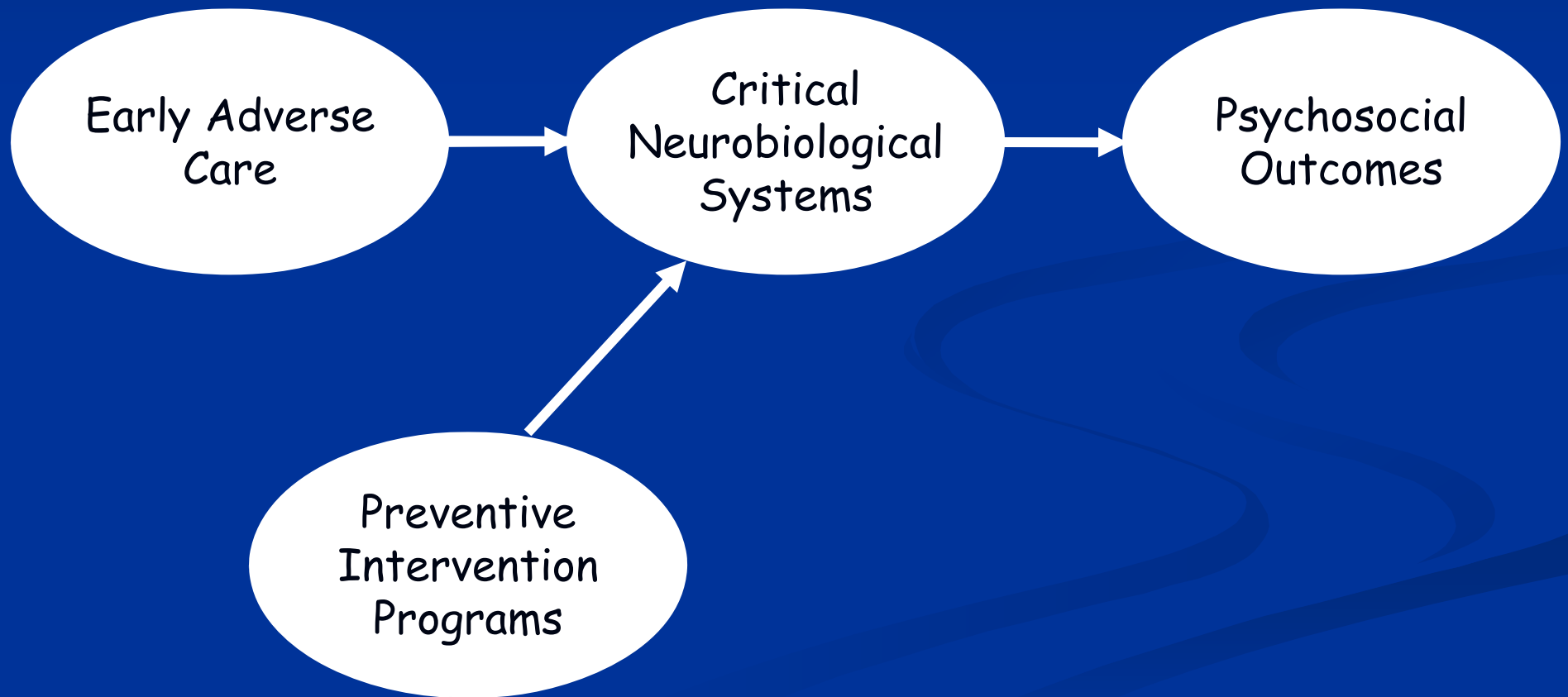
Intervening with Young Children in
the Child Welfare System:
Multidimensional Treatment Foster
Care for Preschoolers (MTFC-P)

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Maltreated Children in Foster Care

- There are over 400,000 children in foster care in the United States, and over 250,000 children enter foster care each year.
- These children are exposed to a range of early adverse care experiences.
- Foster children are an exceptionally high risk group.

Role of Neurobiology in Preventive Intervention Research



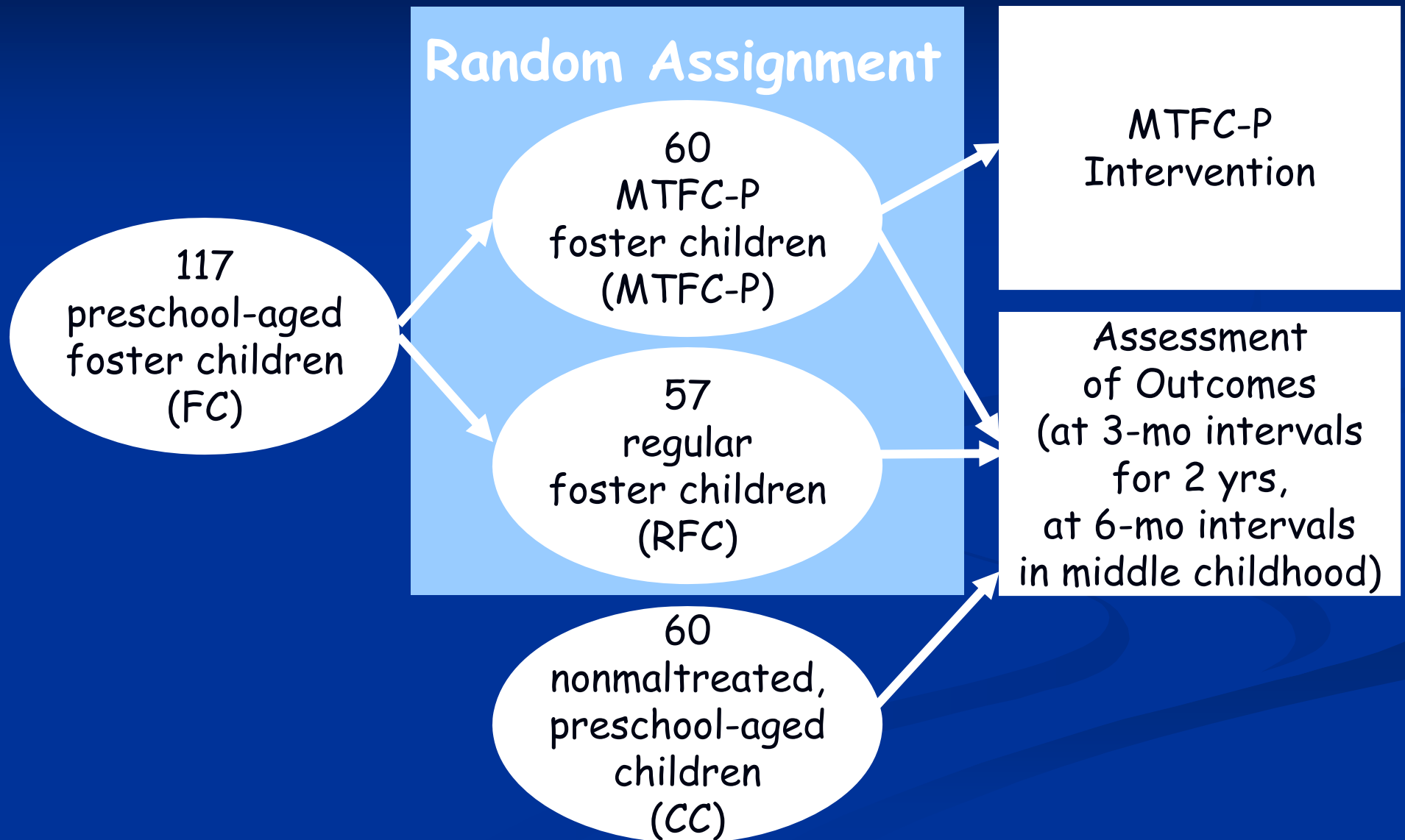
Key Questions

- Does early adverse care alter the development of important neurobiological systems?
- Are specific dimensions of early adverse care associated with these alterations?
- Are these alterations amenable to preventive intervention programs?

Multidimensional Treatment Foster Care for Preschoolers (MTFC-P)

- The goal is to decrease foster children's difficulties by promoting a consistent, responsive, and contingent environment.
- MTFC-P includes:
 - intensive training, support, and supervision for the foster caregivers and
 - targeted services addressing each child's developmental, behavioral, and emotional needs.

MTFC-P Study



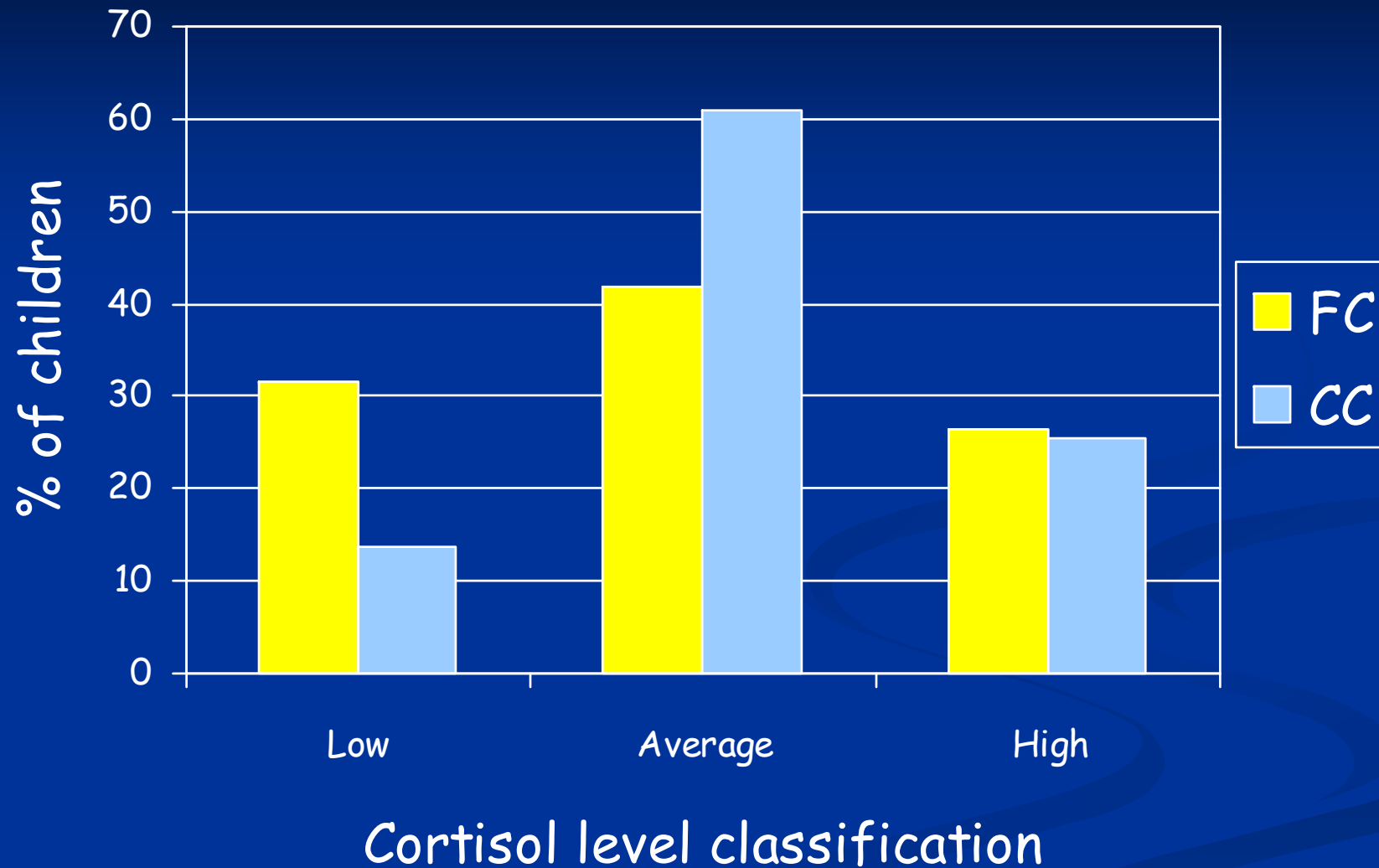
Hypothalamic-Pituitary-Adrenocortical (HPA) System

- In humans, the HPA system produces the steroid hormone cortisol.
- This system serves two functions:
 - maintaining daily hormone production and
 - mounting responses to stressors.
- The HPA system has been implicated in anxiety and affective disorders.

Salivary Cortisol Levels

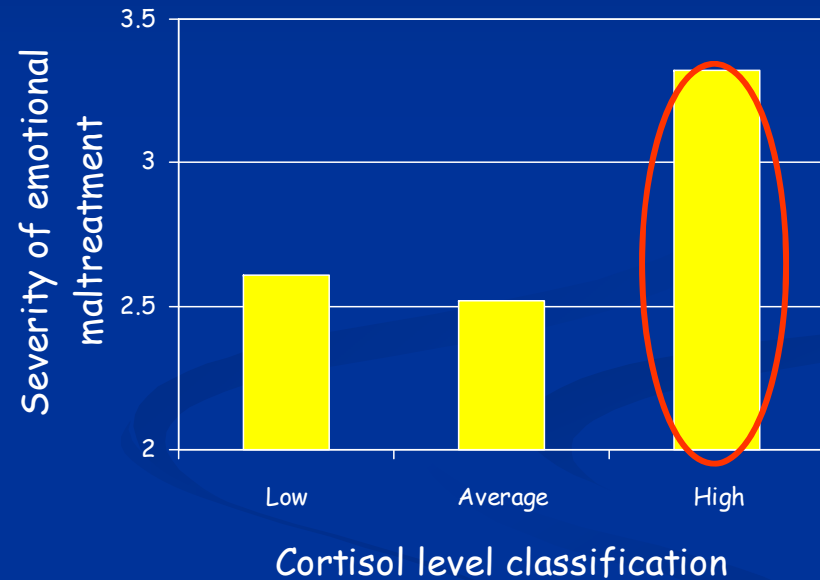
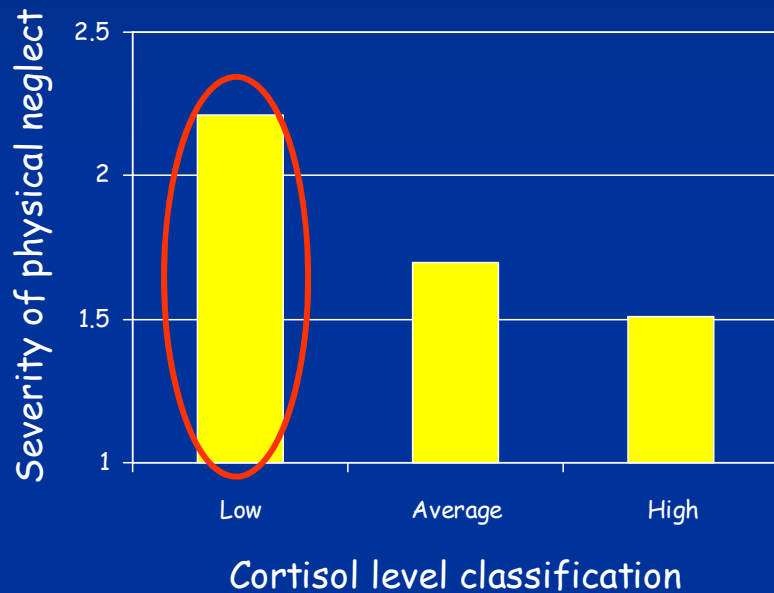


Morning Cortisol Levels



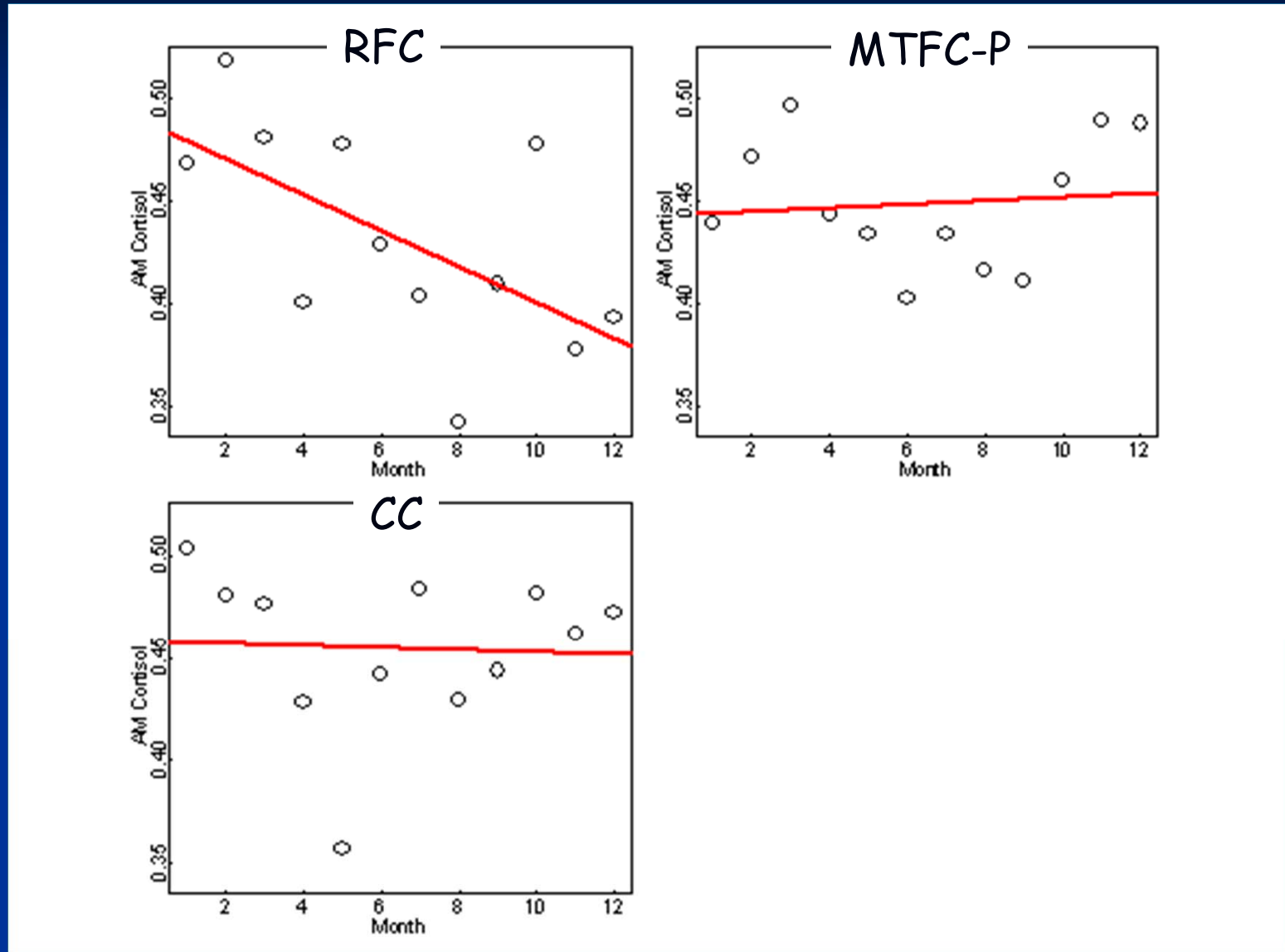
(Bruce, Fisher, Pears, & Levine, 2009)

Foster Children's Morning Cortisol Levels



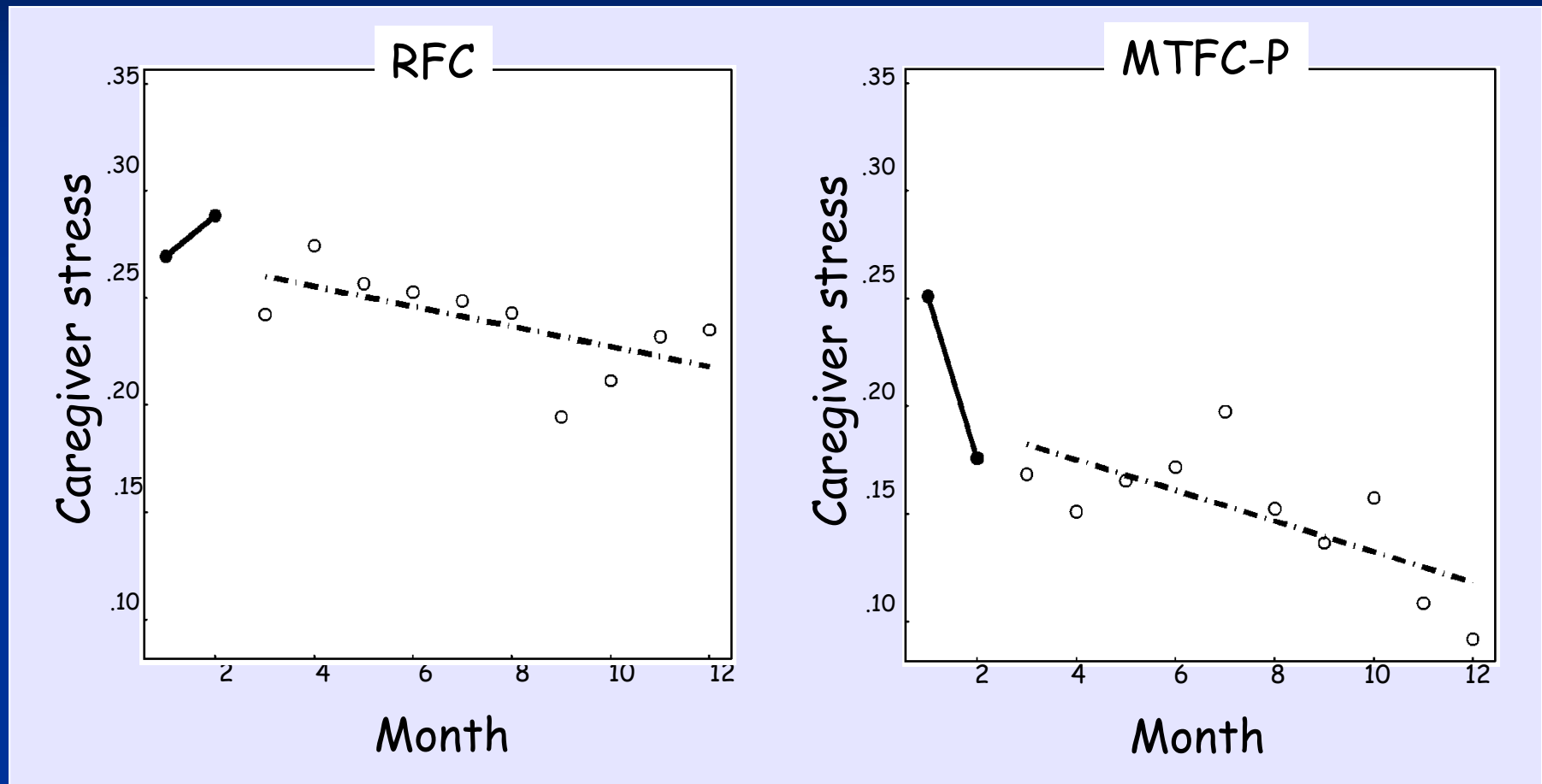
(Bruce, Fisher, Pears, & Levine, 2009)

Morning Cortisol Levels Over Time



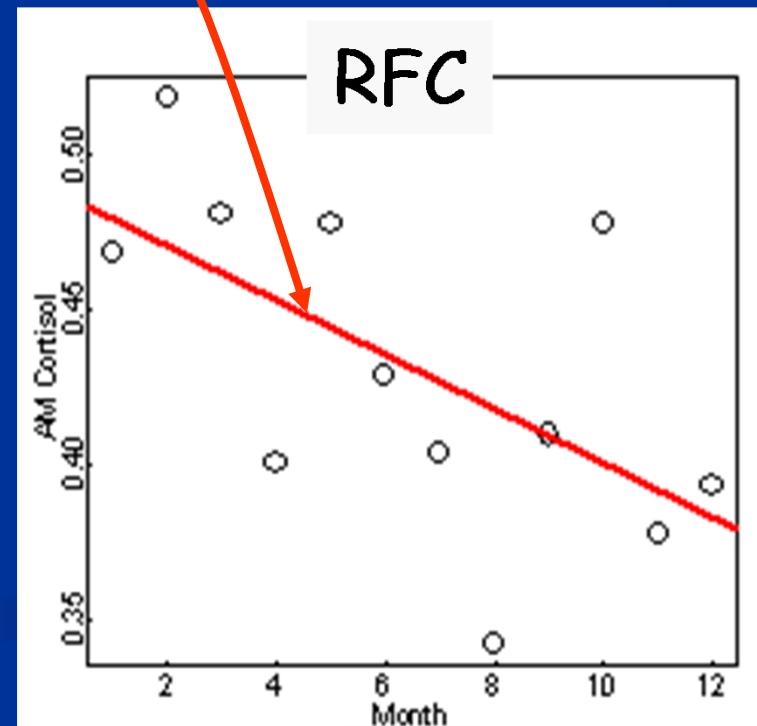
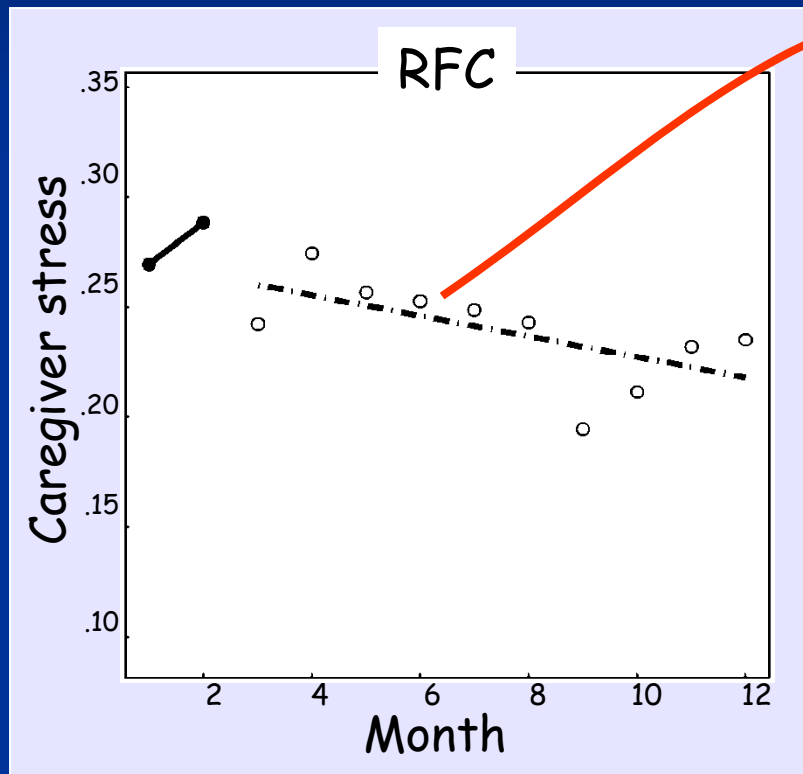
(Fisher, Stoolmiller, Gunnar, & Burraston, 2007)

Caregiver Stress Levels Over Time



(Fisher & Stoolmiller, 2008)

Morning Cortisol Levels and Caregiver Stress Levels over Time



(Fisher & Stoolmiller, 2008)

Executive Functions

- Executive functions such as inhibitory control and response monitoring involve the prefrontal cortex and anterior cingulate cortex.
- Deficits in executive functioning have been implicated in conduct disorder and attention deficit/hyperactivity disorder.

Modified Stroop Task

Sun Card



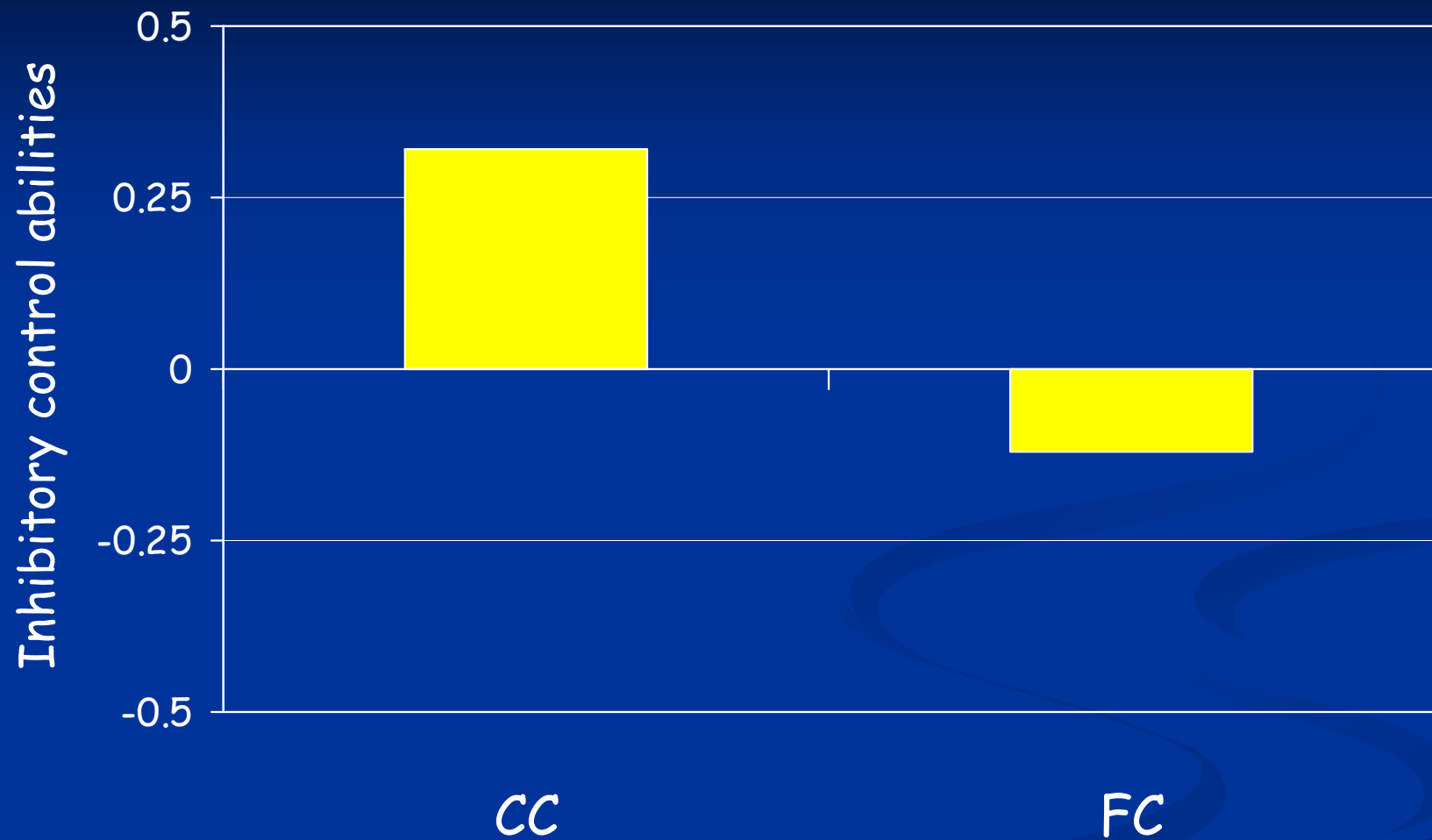
Say "night."

Moon Card



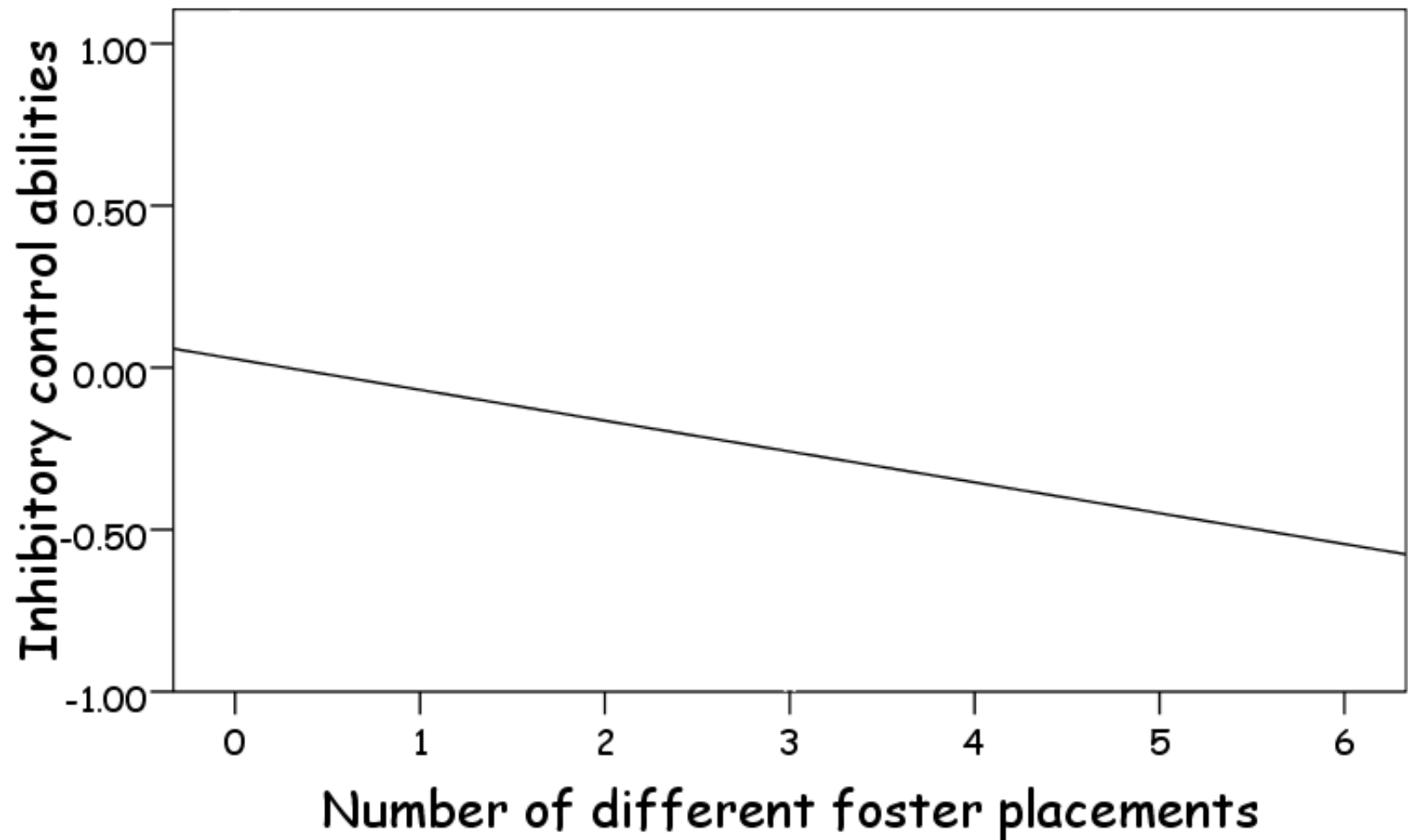
Say "day."

Inhibitory Control Abilities



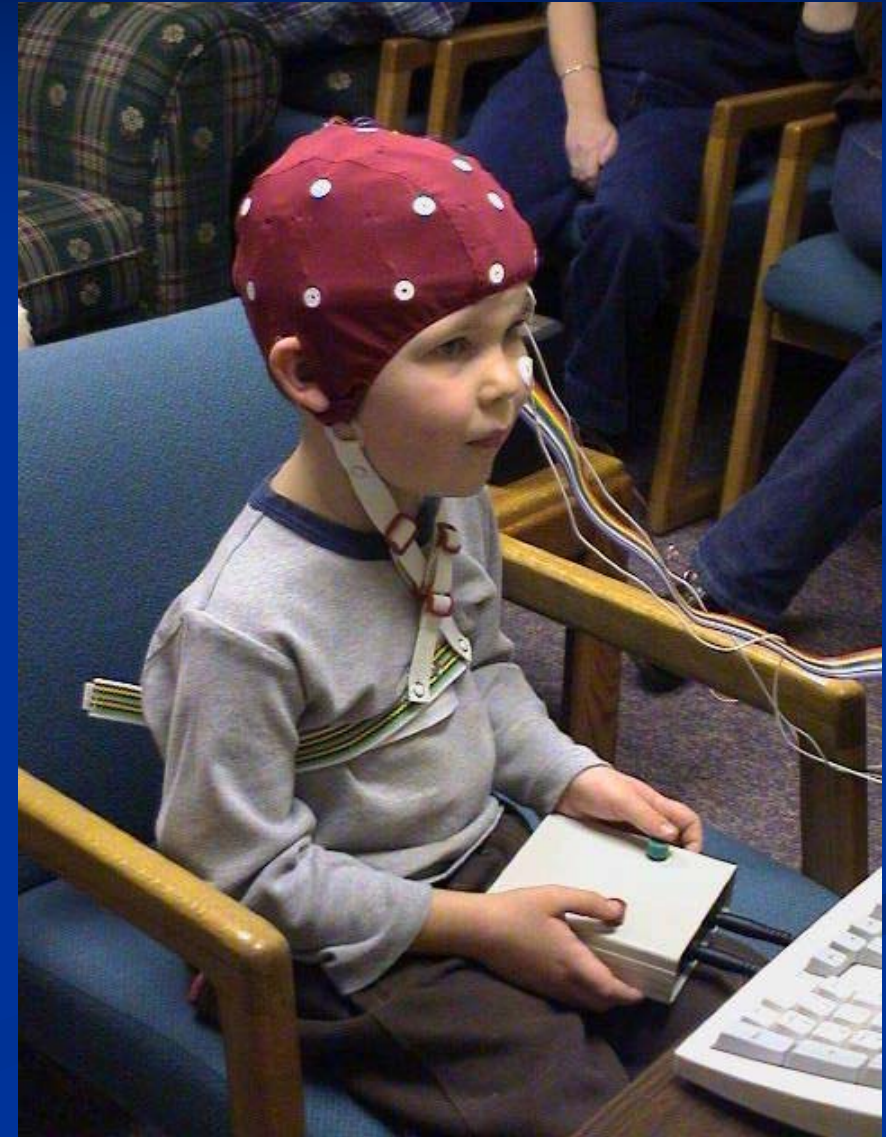
(Pears, Fisher, Bruce, Kim, & Yoerger, 2010)

Foster Children's Inhibitory Control Abilities

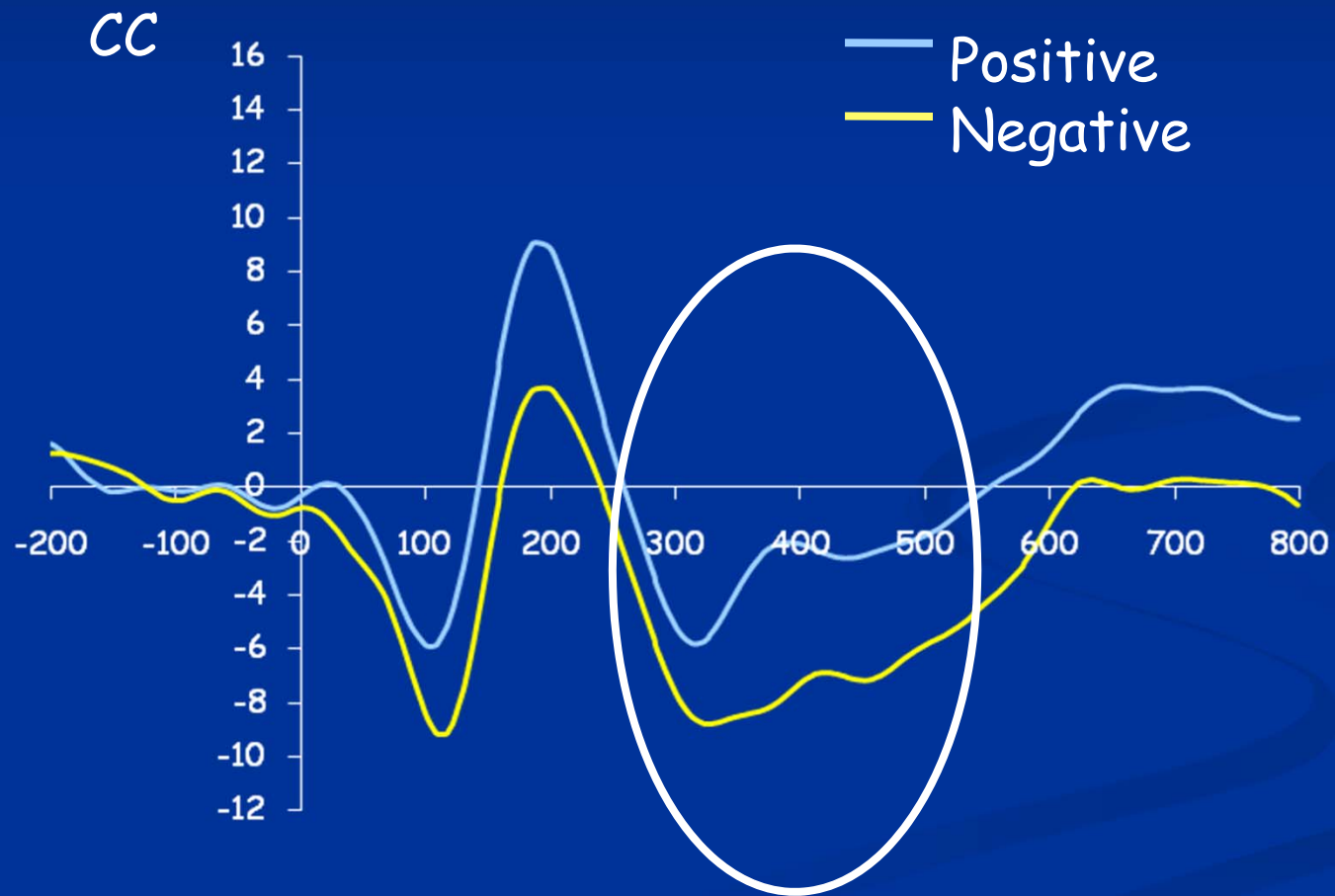


(Pears, Fisher, Bruce, Kim, & Yoerger, 2010)

Electroencephalogram (EEG)



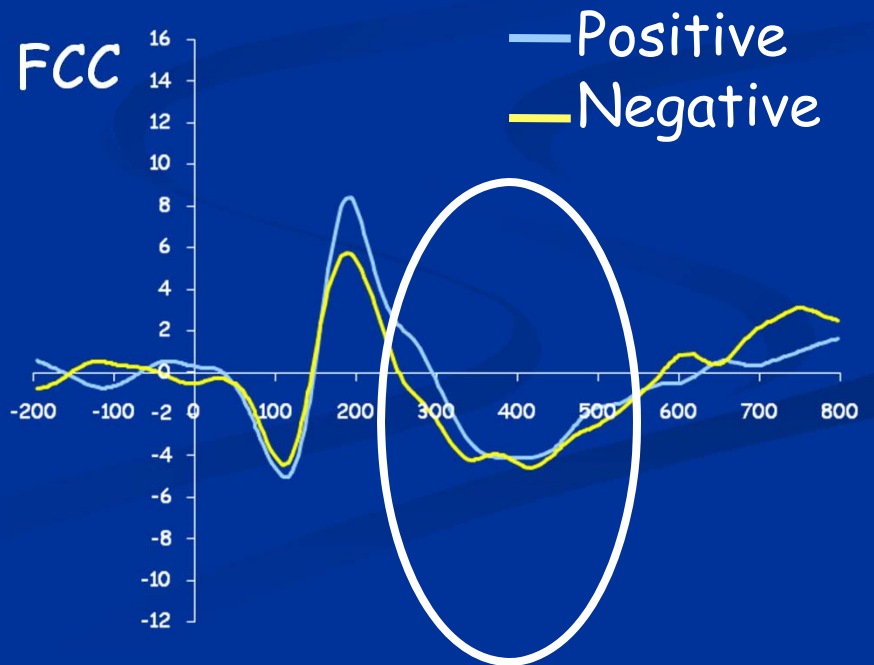
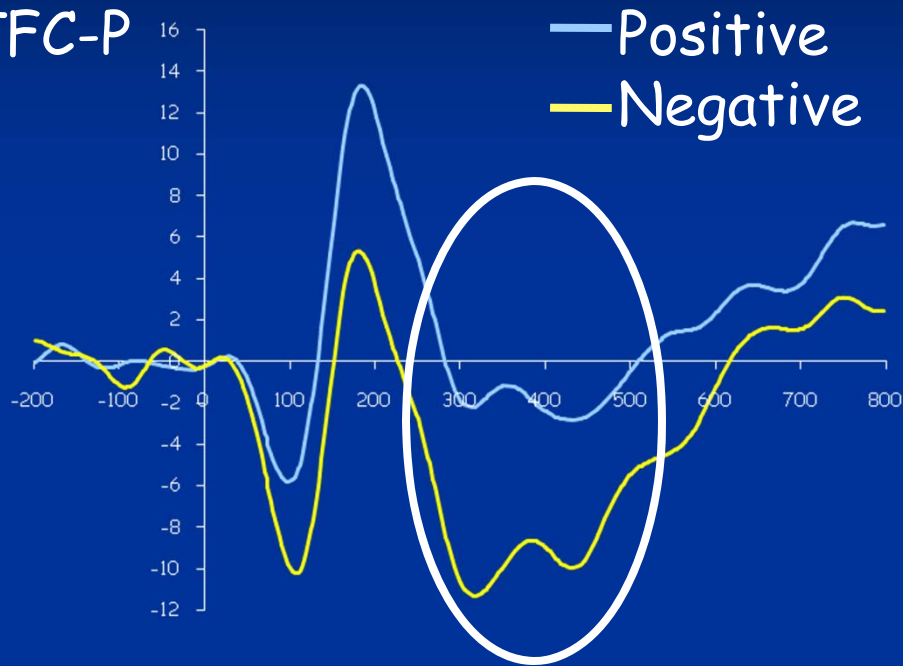
Feedback-Related Negativity



(Bruce, McDermott, Fisher, & Fox, 2009)

Feedback-Related Negativity

MTFC-P



Conclusions

- Early adverse care seem to negatively affect critical neurobiological systems.
- Specific dimensions of early adverse care may have differential effects on these systems.
- However, there is evidence to suggest that appropriate interventions may be able to reverse these effects.

Type of Cost	RFC	MTFC-P
1. MTFC-P Intervention	NA	\$6,168
2. Total RFC Services Cost	\$21,253	\$16,003 **
<i>Cost of Negative Transitions</i>	\$406	\$317
<i>Room and Board</i>	\$10,204	\$10,159
<i>All Other Services</i>	\$10,643	\$5,527 **
3. Nonprotocol Service Cost	\$8,749	\$5,058 **
4. Total Foster Care Costs (sum of items 1 and 2)	\$21,253	\$22,171
5. Total Public Agency Cost (sum of items 3 and 4)	\$30,090	\$27,204 **

Collaborators

MTFC-P Study

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