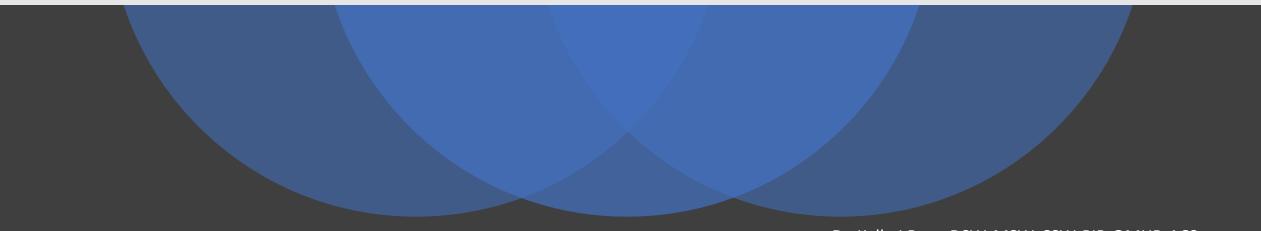


## Exploration of the impact of stressors experienced during infancy, childhood, adolescence, and young adulthood



# Objectives

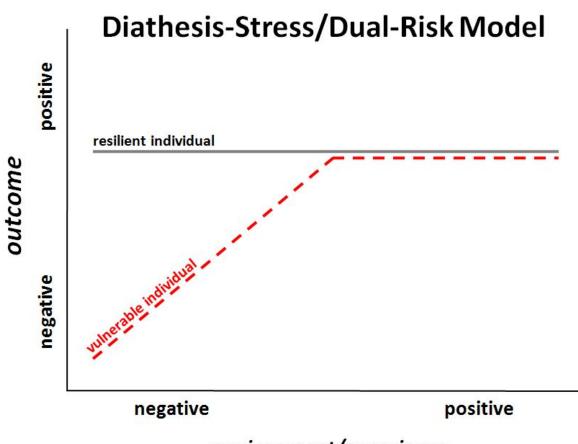


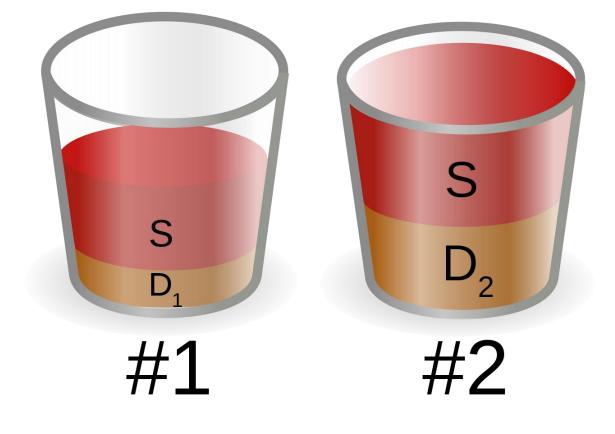
Understand the effect of stress on a child's brain development

Recognize and understand the physical and behavioral health effects of violence, neglect and abuse, including mental health impacts 3

Understand the impact of child maltreatment on suicide ideation, attempt, and completion

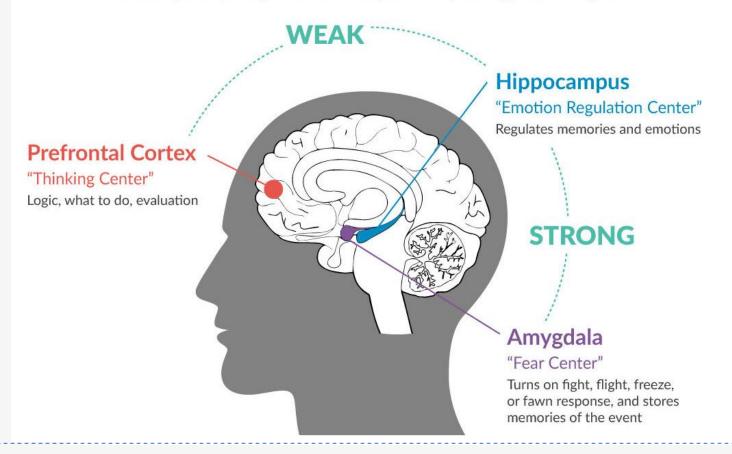
# Stress Variations – Individual



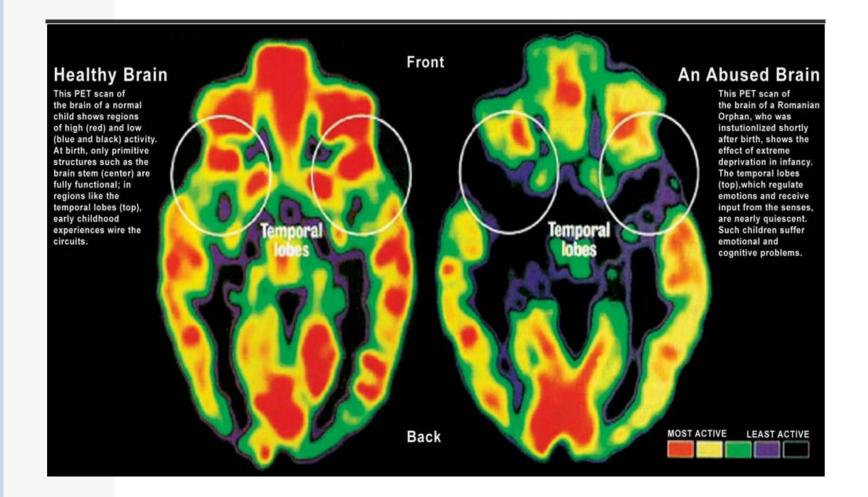


environment/experience

This graphic depicts the three parts of the brain – prefrontal cortex, hippocampus, and amygdala – most relevant to understanding the impact of trauma on the brain. In the traumatized brain, the prefrontal cortex and hippocampus regions are weakened, meanwhile, the amygdala is on high alert.

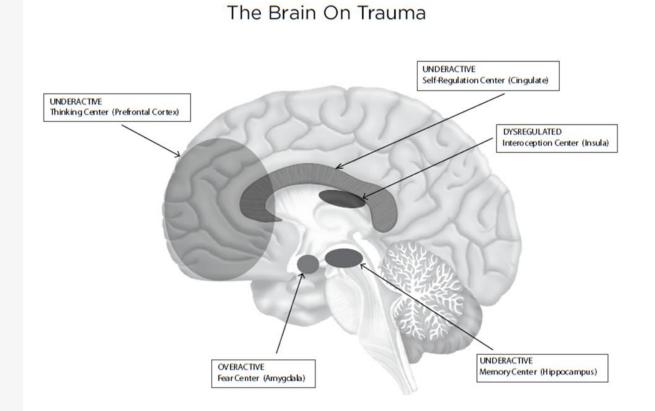


Impact of Trauma on Brain Development



### Trauma & the Brain: Early Childhood

NCTSN, 2019



Trauma and the Brain: School-Age Children

#### NCTSN, 2019

#### "Thinking about Thinking" Higher Reasoning Executive Function

#### Prefrontal Cortex

9 Functions of the Prefrontal Cortex

1. Empathy 2. Insight 3. Response Flexibility 4. Emotion Regulation 5. Body Regulation 6. Morality 7. Intuition 8. Attuned Communication 9. Fear Modulation

### Limbic Brain 1. Fight, flight, freeze

stress response 2. Thinks, "Am I safe? Do people want me?" 3. Emotions live here Trauma & the Brain: Adolescents

#### NCTSN, 2019

## Effects of Trauma Exposure

- Attachment
- Biology
- Mood regulation
- Dissociation
- •Behavioral control
- •Cognition
- •Self-concept
- Development



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#### **Developmental Delays**

- Trauma can disrupt the development of critical brain regions such as the prefrontal cortex, limbic system, and hippocampus, which are essential for cognition, emotional regulation, attention, and executive function
  - This disruption can lead to developmental delays and responses that are unexpected (*behavior*)
- Children with disabilities who experience trauma may exhibit cognitive impairments, including deficits in working memory, attention, and executive function, which can hinder their ability to achieve developmental milestones

#### **Psychological & Behavioral**

- Children with disabilities who experience traumatic events, such as natural disasters or violence, are more likely to develop posttraumatic stress disorder (PTSD) and other stress-related symptoms
  - Higher rates of post traumatic stress disorder and stress related symptoms
- Children with autism spectrum disorder (ASD) and intellectual disabilities (ID) are more prone to behavioral and mood dysregulation following trauma
- Exacerbate existing psychological and behavioral conditions
  - Manifesting as increased aggression, anxiety, and difficulties with emotional regulation

#### Social & Behavioral

- Children with cognitive disabilities: exacerbate externalizing behaviors
- Children with attention-deficit/hyperactivity disorder (ADHD): exacerbate behavioral issues
- Interfere with social interactions and development of social skills

#### **Physical & Mental Health**

Acute:

- Headaches
- Sleep difficulties
- Changes in eating or drinking habits
- Fatigue
- Muscle pain
- And severe distress

★ These symptoms can persist for at least one-month post-trauma and are more prevalent in children with disabilities compared to their non-disabled peers

#### Chronic:

 Persistent inflammatory responses = susceptible to physical health issues such as asthma and metabolic syndrome = delay physical developmental

## What this looks like







Over-controlled behavior

Under-controlled behavior

Sensory processing difficulties

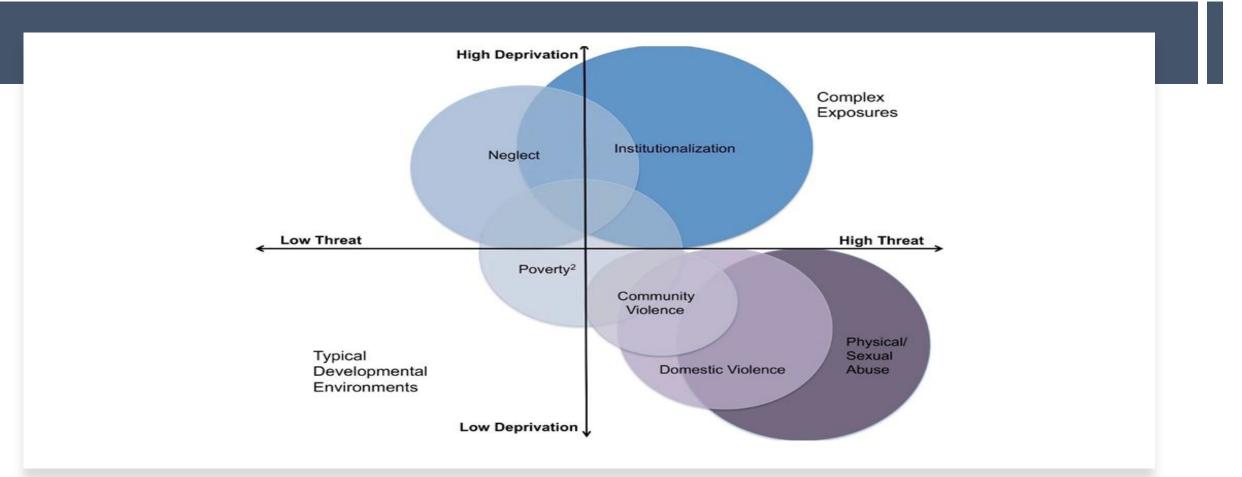
## Suicide Risk Factors



# Long Term Impact

 In summary, trauma can profoundly affect the developmental milestones in children with disabilities by exacerbating psychological, behavioral, and physical health issues. These compounded challenges necessitate early and targeted interventions to mitigate these effects and support the developmental progress of these children.

# Threat/deprivation model for assessment of maltreatment



(Sheridan and McLaughlin, 2014)





# **Protective Factors**

## Understanding Adam's Environment

**Social Impact** 

■ Social Learning Theory

 $\circ$  Exposure to Early Experiences - Risk Factors

• Coping Mechanisms - Protective Factors

Paradoxical Consequences – Attempted Interventions

# Protective and Compensatory Experiences (PACEs)

"... if we want children to live up to their developmental potential and to lead meaningful lives, we must afford them that opportunity by limiting their exposure to adversity: we must ensure that their brains receive the types of experiences that foster healthy brain development (and at the right times in development); and we must be mindful of the fact that deviations from the expectable environment during critical periods of development can lead to particularly egregious outcomes."

Charles Nelson, 2017, p.266

# PACES: Relationships and Resources

- Relationship factors
  - Unconditional love
  - Best friend
  - Volunteering
  - Social group
  - Adult support outside family
- Resources
  - Clean, safe home with food
  - Resources and opportunities to learn
  - Engaging hobby, artistic, or intellectual pursuit
  - Organized sport or physical activity
  - Family has routines and rules

# Research on PACEs

- Higher PACEs associated with lower ACEs, higher education and income, and protected against negative parenting attitudes among individuals with high ACEs (Hays-Grudo & Morris, 2018)
- PACEs associated with mental well-being, higher income and education (Morris et al., 2016)

#### FIGURE 2.2. Protective and Compensatory Experiences (PACEs)

#### When you were growing up, prior to your 18th birthday:

 Did you have someone who loved you unconditionally (you did not doubt that they can about you)?

2. Did you have at least one best friend (someone you could trust, had fun with)?

3. Did you do anything regularly to help others (e.g., volunteer at a hospital, nursing home church) or do special projects in the community to help others (food drives, Habitat for Humanity)?

4. Were you regularly involved in organized sports groups (e.g., soccer, basketball, track) or other physical activity (e.g., competitive cheer, gymnastics, dance, marching band)?

5. Were you an active member of at least one civic group or a non-sport social group such scouts, religious group, or youth group?

6. Did you have an engaging hobby—an artistic/creative or intellectual pastime either alon or in a group (e.g., chess club, debate team, musical instrument or vocal group, theater, spelling bee, or did you read a lot)?

7. Was there an adult (not your parent) you trusted and could count on when you needed help or advice (e.g., coach, teacher, minister, neighbor, relative)?

8. Was your home typically clean AND safe with enough food to eat?

Overall, did your schools provide the resources and academic experiences you needed to learn?

10. In your home, were there rules that were clear and fairly administered?

## Key Principles in Trauma-Informed Approach



## Trauma-Informed Language

FROM	ТО
What is wrong with you?	What happened to you?
Do not assume pronoun based on name or appearance.	What pronoun do you prefer?
Do not assume that individuals will be willing to say or do anything you ask them to do.	Ask permission for everything.
Symptoms	Adaptations
Disorder	Response
Attention-seeking	Trying to connect in best way he or she knows how

## Trauma-Informed Language

FROM	ТО
Controlling	Trying to assert his or her power
Malingering	Seeking help in a way that feels safer
Non-compliant	Difficulty engaging with expectations
Drug seeking	Trying to regulate inner-state
Unpredictable	Seeking structure and regularity
Poor self-regulation	Experiencing a trauma response
Manipulative	Difficulty asking for what he or she needs
Borderline	Doing the best he or she can do given their experiences

## Conclusion

- Dose-response effect of ACEs on physical, behavioral, and mental health
- Individuals with disabilities may experience higher levels of adversity
- Disability and trauma can co-occur make sure to consider all contributing factors
- Healthcare team
  - Developmental approach
  - Recognition of ACEs and trauma
  - Prevention > remediation
  - Family & community protective factors
  - Evidence based, trauma-informed evaluation & intervention

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