



St. Louis CENTER FOR  
Family Development LLC



# Toxic Stress



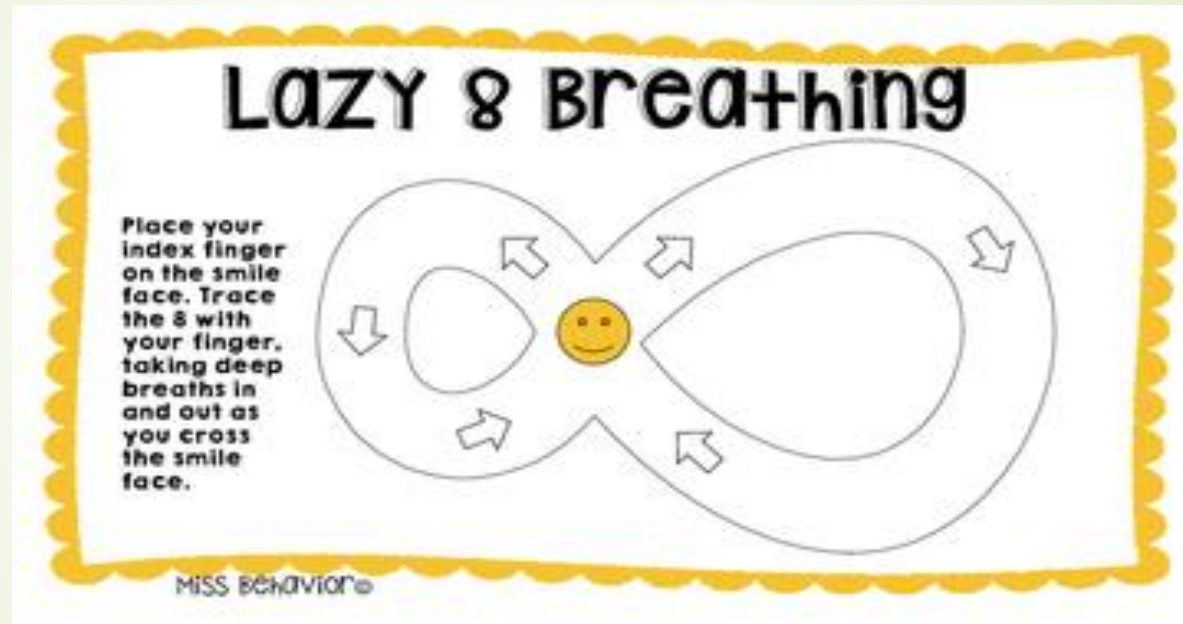
# Training Objectives

Participants will increase their working knowledge of:

- The function of stress in early childhood
- The causes and mechanisms of toxic stress
- Outcomes associated with toxic stress
- Identifying red flags in children and families
- Approaches to care and prevention

# Let's Get Started!

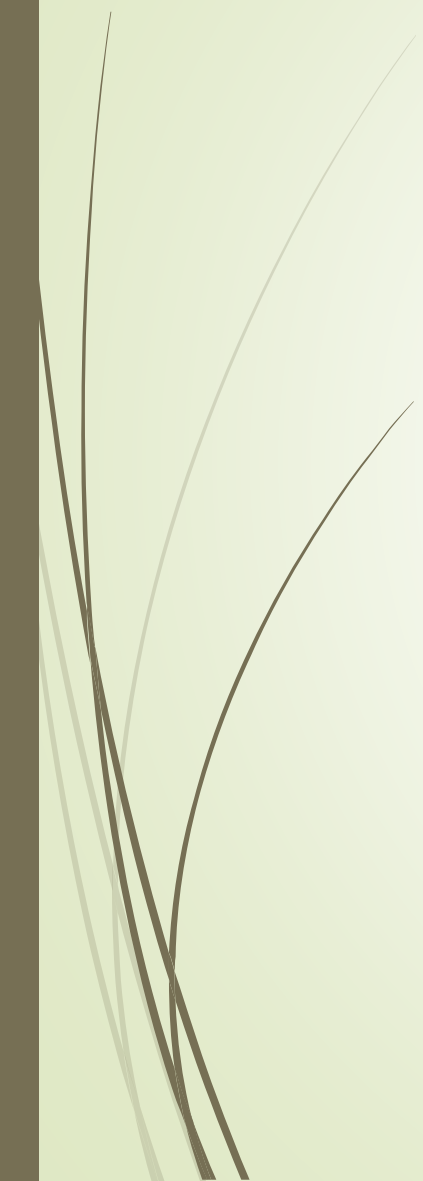
- Mindfulness Exercise



- What is one stress reduction technique that you use to cope when life gets hard to handle?



# Early Childhood Stress

- Most critical period of child development is from birth to 5
  - 3 types of responses to stress:
    - Positive stress response
    - Tolerable stress response
    - Toxic stress response
  - ❖ Stress response is highly dependent on stable and supportive adult relationships that can provide protection and facilitate coping.
- 

# Extreme Adversity



Image: <http://www.examiner.com/article/toxic-stress-early-childhood-can-damage-a-child-s-brain-for-life>

# Living in Poverty

There are several aspects of living in poverty that can contribute to toxic stress:

- Poverty is often aligned with multiple stressors such as: food insecurity, neighborhood violence, inadequate and/or unstable housing, and parental unemployment.<sup>2</sup>
- Lack of parental bonding time due to work schedules.<sup>3</sup>
- Significant maternal stress during pregnancy, as we often see with mothers living in poverty, can affect a child's developing brain.

2. Williams Shanks, T. R., & Robinson, C. Assets, economic opportunity and toxic stress: A framework for understanding child and educational outcomes. *Economics of Education Review* (2012), <http://dx.doi.org/10.1016/j.econedurev.2012.11.002>

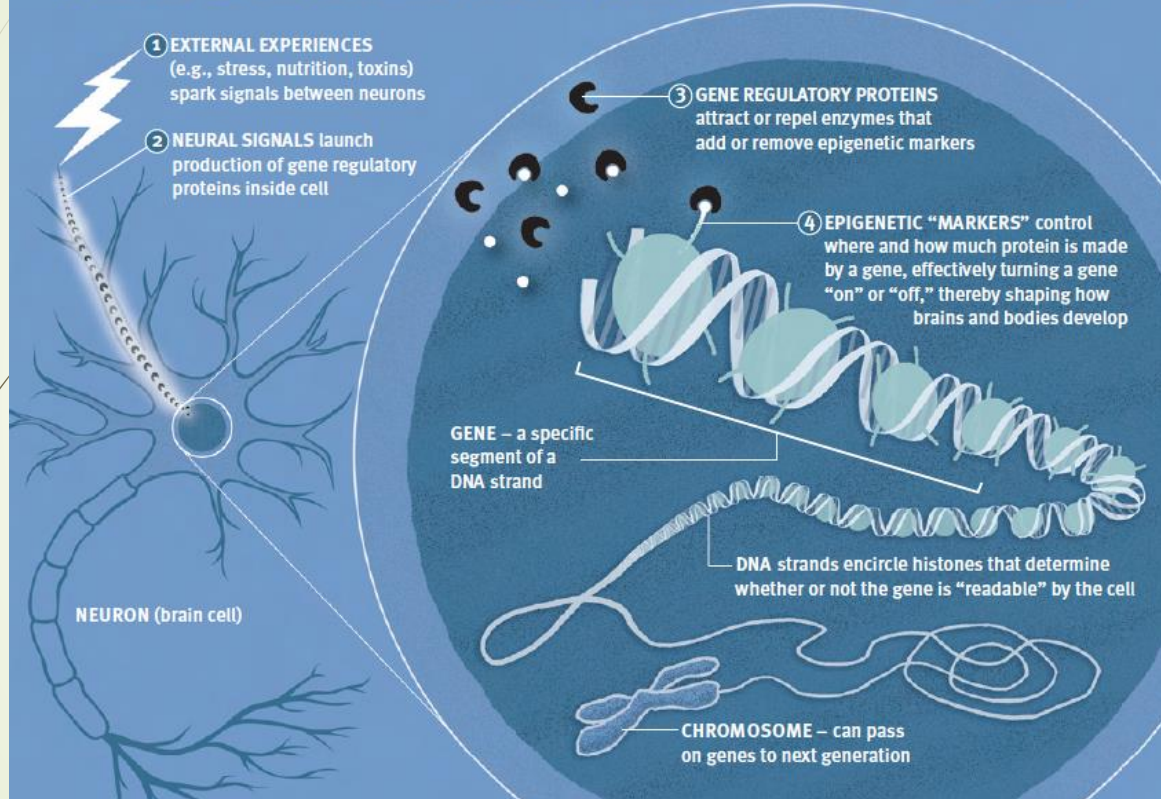
3. National Scientific Council on the Developing Child (2005). Excessive Stress Disrupts the Architecture of the Developing Brain: Working Paper #3. <http://www.developingchild.net>

# Chronic Daily Stressors



<http://psychcentral.com/blog/archives/2012/06/06/signs-your-child-is-stressed-5-ways-to-help/>

## How Early Experiences Alter Gene Expression and Shape Development





## Fear and Anxiety Affect the Brain Architecture of Learning and Memory

### PREFRONTAL CORTEX

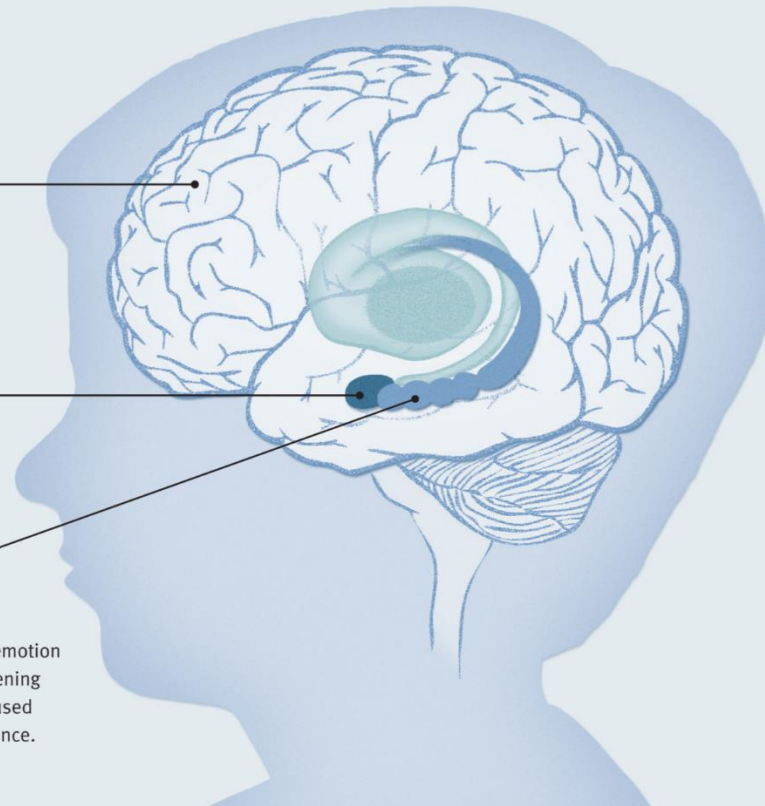
Center of executive functions; regulates thought, emotions, and actions. Especially vulnerable to elevation of brain chemicals caused by stress. Matures later in childhood.

### AMYGDALA

Triggers emotional responses; detects whether a stimulus is threatening. Elevated cortisol levels caused by stress can affect activity. Matures in early years of life.

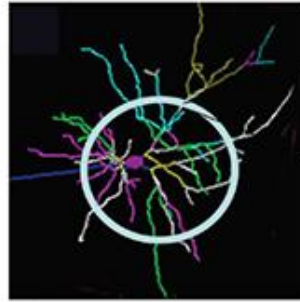
### HIPPOCAMPUS

Center of short-term memory; connects emotion of fear to the context in which the threatening event occurs. Elevated cortisol levels caused by stress can affect growth and performance. Matures in early years of life.



## Persistent Stress Changes Brain Architecture

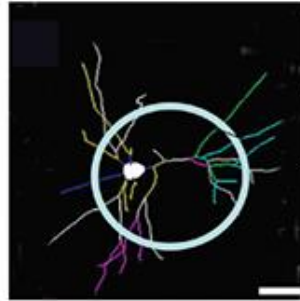
Normal



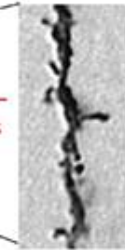
Typical neuron—  
many connections



Toxic  
stress



Damaged neuron—  
fewer connections



Prefrontal Cortex and  
Hippocampus

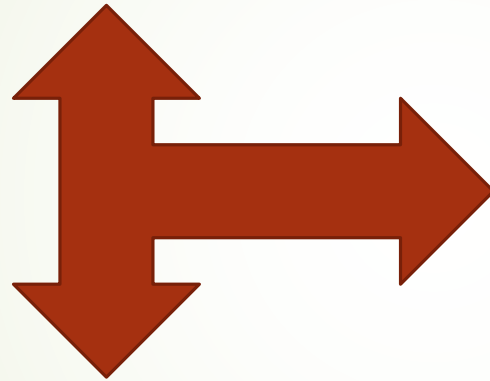


Center on the Developing Child  
HARVARD UNIVERSITY



Changes in  
brain  
architecture

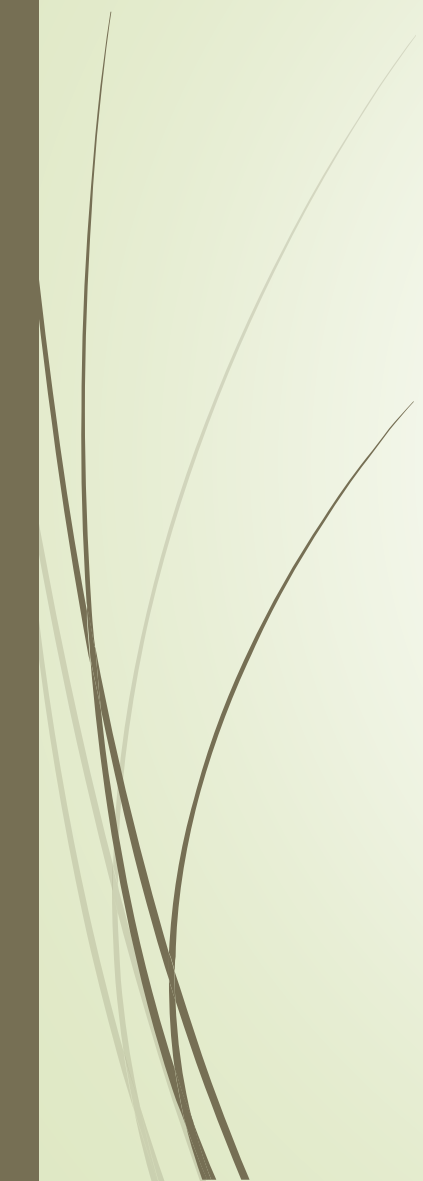
Epigenetic  
changes



Development  
al  
neurobiology  
now allows to  
move past the  
idea of  
“moral  
failures”



# Our Assumption:

- Parents are doing the best they can with the resources they have
  - Parenting is HARD. Parenting with limited resources and support is harder. Parenting kids with toxic stress is an added challenge.
  - We don't get anywhere by blaming parents
  - We have nothing to work with if we can't acknowledge the strengths and good intentions of the parents we serve.
- 

# Buffers



Image: <http://www.vimeo.com/52097539>



# Brain Plasticity



- The brain is malleable all the way into adulthood.
- The plasticity of brain circuits mean that stress can remodel them and change the balance between anxiety, mood, memory, and decision making
- New neural pathways can be created.
- Parts of the brain that have been underdeveloped due to toxic stress, such as the frontal cortex, can be expanded with future use.
- There is hope!



# Potential Psychosocial Outcomes

Toxic stress can reduce ability for:

- ▶ regulating stress physiology
- ▶ learning new skills
- ▶ developing the capacity to make healthy adaptations to future adversity
- ▶ Executive functioning (attention, working memory, inhibition control, planning skills)

...which impacts:

- ▶ school readiness
- ▶ academic achievement
- ▶ relational functionality
- ▶ capacity for self-control



# Potential Health Outcomes

- ▶ alterations in immune function
- ▶ measurable increases in inflammatory markers
- ▶ chronic obstructive pulmonary disease
- ▶ cardiovascular disease
- ▶ type II diabetes
- ▶ viral hepatitis
- ▶ liver cancer
- ▶ asthma
- ▶ chronic obstructive pulmonary disease,
- ▶ autoimmune diseases
- ▶ poor dental health
- ▶ depression



```
graph TD; A[Changes in developing brain's structure] --> B[Potentially permanent changes in brain function  
Altered learning, behavior, and physiology]; B --> C[Altered developmental outcomes & life-course trajectories  
Fractured social networks, adoption of unhealthy lifestyles,  
changes in immune function/inflammation]; C --> D[Health Disparities];
```

Changes in developing brain's structure



Potentially permanent changes in brain function  
Altered learning, behavior, and physiology



Altered developmental outcomes & life-course trajectories  
Fractured social networks, adoption of unhealthy lifestyles,  
changes in immune function/inflammation



Health Disparities

# How can I identify toxic stress in young children?

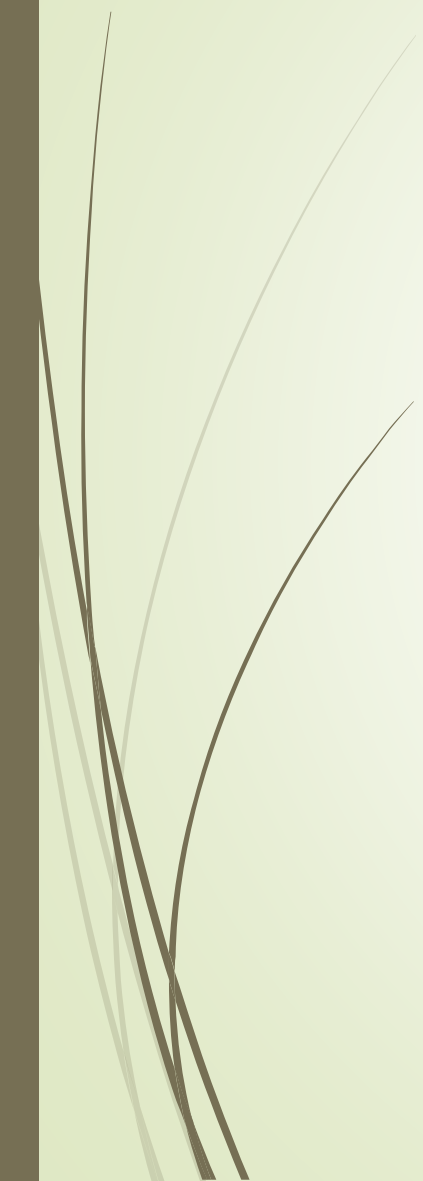
- Identifying Toxic Stress handout
- Externalizing and Internalizing symptomatology
- How to recognize worrisome behaviors? Practice!




<http://eclectikrelaxation.com/blog/?p=2275>



# What Can Be Done?

- Provide interventions for children already affected by toxic stress
  - Train parents, childcare workers, pediatricians
  - Early childhood care and education programs can provide stable, supportive relationships with caring adults to mitigate toxic stress.
  - Address social inequalities
- 



Adding a trauma lens  
to change the question:



What is  
wrong  
with  
you?

What  
happen  
ed to  
you?



## Implementing Trauma-Informed Care

- Trauma-Informed Care emphasizes safety, choice, control, partnership, transparency, historical and cultural considerations, and empowerment.
- Trauma-Informed Care is strengths-based and interventions are intentional.
- The absence of protective supports increases the likelihood of experiencing trauma.
- Trauma-Informed Care builds competencies that will strengthen a person's sense of autonomy.

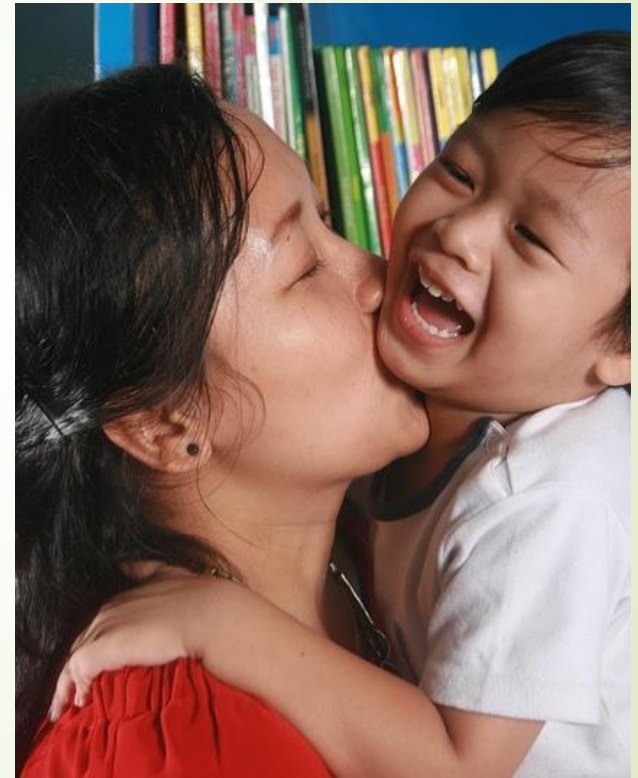
# Role of the Provider



- Provide Structure and Routine
- Use a Compassionate and Nonjudgmental Approach
- Promote Future Orientation
- Provide Hope/ Belief in Something Better
- Stay Present/ Pay Attention/ LISTEN
- Help Channel and Manage Emotions
- Provide Opportunities for Success and Mastery
- Demonstrate Understanding
- Utilize Feedback from Clients to Improve Services

# In Families

- Providing attuned care and emotional support to children during adversity can decrease their likelihood of developing toxic stress.
- For children who experienced toxic stress at a young age, positive supportive relationships with adults can undo some of the damage that was done earlier.





# Working with Parents

- Empathy and active listening
- Assume a nurturing position, avoid shaming & blaming
- Show respect and kindness, not blame
- Work together
- Avoid directives
- Encourage one-on-one play
- Link them to necessary resources
- Encourage self-care





# Educating Parents

- Frame teaching on shared goal of child well-being
- Stress that their child(ren)'s relationship with them is the most important for their well-being and can help them overcome lots of challenges
- Give accessible, non-blaming resources such as articles, websites, or brochures that not only explain what toxic stress is, but how its impact can be mitigated

# Final Points to Remember

- Not all children who experience significant early stress will develop stress-related disorders or be unable to cope with adversity.
- Toxic stress is a risk factor, not a determinant of any outcome.
- The stressful experience(s) is not the problem, but rather how our body responds to that stressor.
- By taking proactive approaches with at-risk families and providing early structures for support and education, we can reduce the likelihood that a child will experience toxic stress.
- Using TIC can help re-build a sense of self and lead to more positive outcomes

# Personal Stress Reduction

- ▶ What works for you?
  - ▶ Physical activity
  - ▶ Meditation
  - ▶ Reflection
  - ▶ Humor
  - ▶ Connection
- ▶ Don't forget the basics for your body: sleep, eating, exercise
- ▶ How can you make more space for stress reduction in your professional and personal life?



<http://www.superstock.com/stock-photos-images/1555R-308917>

# References

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- ▶ Honig, A. S. *Little kids, big worries: Stress-busting tips for early childhood classrooms*. (2010). Baltimore, Maryland: Brookes.
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- ▶ National Association of Pediatric Nurse Practitioners: <http://napnap.org>
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