


# THE LONG-TERM EFFECTS of TOXIC STRESS IN INFANCY AND CHILDHOOD

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# TYPES OF STRESS

- ▶ Stress can impact a fetus (maternal stress), infant, child or adolescent
- ▶ Not all stress is ‘bad’
  - ‘positive stress’: brief and mild to moderate stress along with a caring, responsive adult to assist with coping
  - ‘tolerable stress’: non–normative experiences with a greater magnitude of stress or adversity with a buffering environment/adult


# TOXIC STRESS

- ▶ Most dangerous form of stress
  - ▶ Results in strong, frequent or prolonged activation of the stress response system
  - ▶ Absence of a buffering, supportive adult relationship
  - ▶ ACE (Adverse Childhood Experiences) Study looks at effects of this process on adults including emotional and medical wellbeing
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# IMPACT ON BRAIN DEVELOPMENT AND GROWTH

- ▶ Fetal, infant and early childhood brains have some plasticity, but persistently elevated stress hormones disrupt the developing architecture of the brain
  - ▶ Increased receptors for adrenocortical hormones in prefrontal cortex, amygdala and hippocampus may alter size and function of these brain areas
  - ▶ Effects on difficulty with learning, memory and executive function
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# CLINICAL MANIFESTATIONS OF BRAIN DEVELOPMENT CHANGES

- ▶ Poor stress management  
(anxiety/fear/impulsive/excessive reactions)
  - ▶ Difficulty learning new skills
  - ▶ Difficulty discriminating between safe and dangerous situations
  - ▶ Altered linguistic, cognitive and social-emotional skills
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# ADOLESCENT EFFECTS OF ACES

- ▶ Early initiation of alcohol use and abuse
  - ▶ Increased use of cigarettes and illicit drugs
  - ▶ Early initiation of high risk sexual activity
  - ▶ Greater likelihood of obesity
  - ▶ Greater risk of school failure
  - ▶ Increased risk of involvement in the Juvenile Justice System and violent crimes
  - ▶ More poverty/homelessness
  - ▶ More likely to become a single parent
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# SYMPTOMATOLOGY


- ▶ 2–5 year olds: behavior and emotions interfere with normal developmental activities
  - ▶ Avoidance of stimuli associated with their trauma
  - ▶ With acute severe stress, new aggressive behavior, separation anxiety and developmental losses
  - ▶ Withdrawal, decreased play, flat affect
  - ▶ Abnormal arousal
  - ▶ Impaired relationships
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# ADULT EFFECTS OF ACEs

- ▶ Mood Disorders
  - ▶ Substance abuse
  - ▶ Unemployment/poverty
  - ▶ Chronic medical conditions including obesity, heart disease, viral hepatitis/liver cancer, asthma/COPD, autoimmune diseases associated with chronic inflammatory markers
  - ▶ Early death
  - ▶ Passage to next generation via environment and epigenetics
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# APPROACHES TO THE PROBLEM

- ▶ Acknowledgement of the problem – a public health issue
  - ▶ Early screening in childhood, and intervention
  - ▶ Financial and policy commitment for change
  - ▶ Stable, responsive relationships
  - ▶ Prioritizing healthy childhood as the best source for healthy adults
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# INCREASING RESILIENCE

- ▶ Build confidence/self esteem
  - ▶ Build competence
  - ▶ Increase connection/relationships
  - ▶ Character – provide standards
  - ▶ Contribution – feels good to give and receive thanks
  - ▶ Coping – demonstrate positive approaches
  - ▶ Control – need some areas of control in their lives
  - ▶ Unconditional support with high expectations
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