

Please don't take this the
wrong way, but you're
really stressing me out!

Childhood stress and adverse childhood experiences

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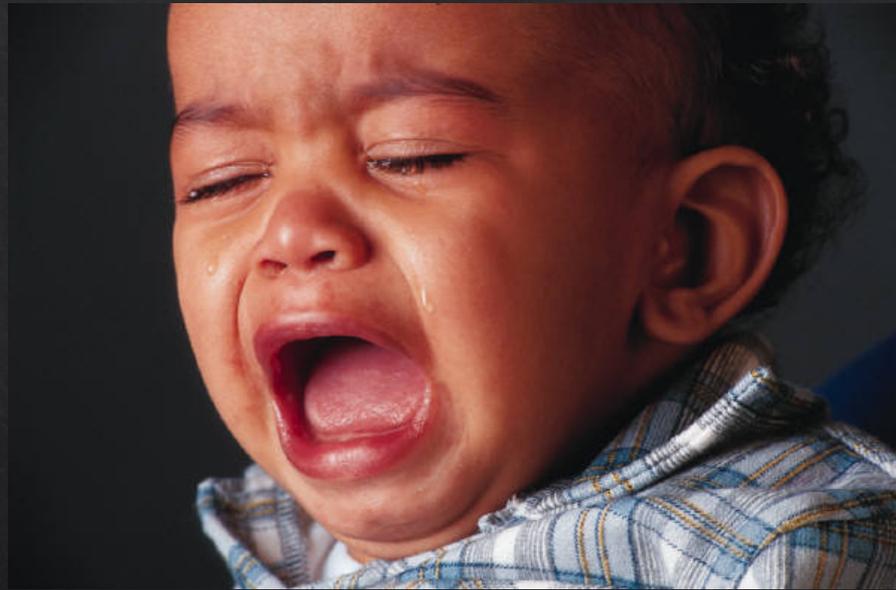
Find your ACE Score

- ◆ Please take some time to read over the ACE Score quiz. You don't have to take the quiz, but please look over and give the items some thought during the presentation.

Objectives

- ◇ Define adverse child experiences (ACE) and childhood stress
- ◇ Explain how childhood development and toxic child stressors interact to effect emotional, cognitive and physical changes in the individual
- ◇ Discuss ways that we can help reduce ACE/toxic stress in families and help child cope when it exists

Children and Stress



Effects of Childhood Stress

Types of stress



Effects of Childhood Stress

- ◆ Positive stress
 - ◆ Results from short-lived experiences



Middlebrooks JS, Audage NC. **The Effects of Childhood Stress on Health Across the Lifespan.** Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2008.

Effects of Childhood Stress

- ◇ Positive stress
 - ◇ With parental support, children learn how to both manage and overcome this stress
 - ◇ This is normal and learning to cope is an important part of the developmental process

Effects of Childhood Stress

- ◆ Tolerable stress
 - ◆ Intense, but still relatively short-lived



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Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2008.

Effects of Childhood Stress

- ◇ Tolerable stress
 - ◇ With support, also can usually be overcome
 - ◇ Without support, may become toxic and lead to long-term negative health effects

Effects of Childhood Stress

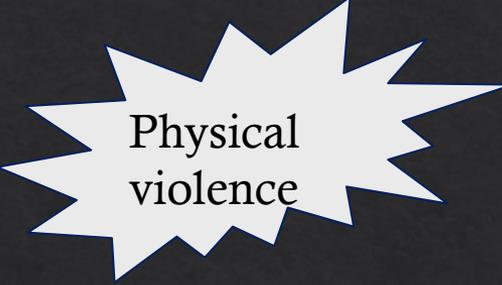
- ◆ Toxic stress
 - ◆ Intense adverse experiences that may be sustained over a long period of time

Effects of Childhood Stress



Lack of
nurturing

- Toxic stress



Physical
violence

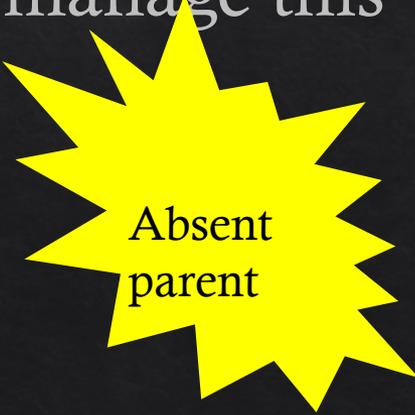
- Intense adverse experiences that may be sustained over a long period of time
- Children cannot effectively manage this type of stress on their own



Sexual
violence



IPV



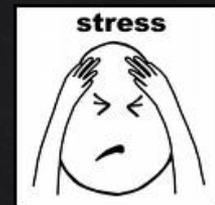
Absent
parent

Adverse Childhood Experiences Study (ACE)

- ◇ Examined the relationship between
 - ◇ abuse + social dysfunction in childhood
 - ◇ health outcomes in adulthood

What is an ACE?

- ◇ Recurrent physical abuse
- ◇ Recurrent emotional abuse
- ◇ Emotional or physical neglect
- ◇ Contact sexual abuse
- ◇ Mother is treated violently
- ◇ An alcohol and/or drug abuser in the household
- ◇ An incarcerated household member
- ◇ Someone who is chronically depressed, mentally ill, institutionalized, or suicidal
- ◇ One or no parents



ACE: Outcomes

Risk in the following health conditions increases in a strong and graded manner

- ◇ Alcoholism and alcohol abuse
- ◇ Chronic obstructive pulmonary disease
- ◇ Depression
- ◇ Fetal death
- ◇ Health-related quality of life (decrease)
- ◇ Illicit drug use
- ◇ Ischemic heart disease
- ◇ Liver disease

- ◇ Risk of IPV
- ◇ Multiple sexual partners
- ◇ STDs
- ◇ Smoking
- ◇ Suicide attempts
- ◇ Unintended pregnancies
- ◇ Early initiation of smoking and sexual activities
- ◇ Adolescent pregnancy

Effects of Childhood Stress

People with six or more ACEs died nearly **20** years earlier on average than those without ACEs

Toxic stress: Examples



IPV as child abuse

- ◇ Increased risk of violence during pregnancy may lead to injuries to fetus
- ◇ Estimated co-occurrence of IPV and CA is 30-60%
- ◇ If IPV in first six months of life, child is 3.4 times likely to be victim of physical abuse by age 5
- ◇ Evidence of physical, emotional and mental damage to children
- ◇ Relationship to adverse childhood experiences (ACE)

Reflection

- ◇ <http://www.youtube.com/watch?v=KY4GejdDGp0>
- ◇ Lisa 911 call

Exactly what kind of changes are happening?

Maltreated children show same pattern of brain activity as combat soldiers

5 December 2011

Children exposed to family violence show the same pattern of activity in their brains as soldiers exposed to combat, new research has shown.

In the first functional MRI brain scan study to investigate the impact of physical abuse and domestic violence on children, scientists at UCL in collaboration with the Anna Freud Centre, found that exposure to family violence was associated with increased brain activity in two specific brain areas (the anterior insula and the amygdala) when children viewed pictures of angry faces.

Previous fMRI studies that scanned the brains of soldiers exposed to violent combat situations have shown the same pattern of heightened activation in these two areas of the brain, which are associated with threat detection. The authors suggest that both maltreated children and soldiers may have adapted to be 'hyper-aware' of danger in their environment.

Stress and physiology

- ◆ Children raised in abusive, violent, or neglectful homes are often denied the tools that would help them adapt
 - ◆ Impairments in language abilities and cognitive skills

(One recent study found 36% of preschoolers in foster care to be developmentally delayed)



Stress and physiology

- ◇ Neurons develop myelin sheaths and proliferate
- ◇ Neuronal connections develop
 - ◇ Experience → more connections
- ◇ The typical adult brain has lost nearly half of the neuronal connections it possessed at age 5



Basic learning & performance

Learning

- ◇ When you learn something, neurons have made connections (neural pathways) that get activated when you need to use that information or skill
- ◇ Where there is toxic stress, those pathways get emphasized so as to readily available
- ◇ Other pathways are ignored, and “pruned” (use it or lose it)

Performance

- ◇ Our learning and development leave physical markers on our brains
- ◇ The brain that is maximized for survival may be less able to handle other activities as those pathways have been pruned
- ◇ More difficult to learn (alter) as adults

Stress and physiology

◆ A more threatening world may influence a brain to develop a heightened fight-or-flight response



◆ **Structural** changes affect the brain's response



◆ Altered **behavioral** response to stress

Effects of Childhood Stress

One pathway: Stress hormone—cortisol

- ◆ Cortisol can impair brain circuit formation
- ◆ Low threshold for stress can result
- ◆ Immune system suppressed
- ◆ Damage to area of brain that is responsible for learning and memory

Direct effects on brain structure

- ◇ Childhood abuse has been associated with volume loss in the brain in particular:
- ◇ Areas responsible for executive function
 - ◇ Mediating conflicting thoughts
 - ◇ Making choices between right and wrong
 - ◇ Governing social control

Direct effects on brain structure

- ◇ Childhood abuse has been associated with alterations in brain areas responsible for
 - ◇ Interpreting feedback from the environment
 - ◇ Risk taking
 - ◇ Compliance with rules
 - ◇ Associated learning
 - ◇ Self-reflective thought
 - ◇ Memory and emotional regulation

Attachment



- ◇ Sense of the parent's availability and responsiveness to protect him and see to his needs
- ◇ An attentive caregiver teaches the child to recognize and regulate her own emotions
- ◇ With such a parent the infant is secure to learn and explore

Attachment



- ◆ When the parent is abusive, the attachment can be confused or disorganized
- ◆ Less-severe mistreatment can ALSO affect attachment
 - ◆ A caregiver who is absent, preoccupied, or inconsistent makes it difficult for the infant to feel safe

Stress and relating to the external environment

◆ Alexithymia = inability to “read” emotion



- ◆ Cannot perceive emotions of others
- ◆ Cannot monitor own emotional response

◆ Abused and neglected children may grow up unable to discriminate emotions (sadness, anger) in their daily interactions

Facial discrimination

Happy



Sad

Fearful

Angry



Sad

Fearful



Interaction with Individuals

- ◆ Abused children and nonabused controls (matched on age and IQ to the maltreated children) performed a facial discrimination task
- ◆ Maltreated children are uniquely sensitive to detecting anger over other facial expressions of emotion

Stress and the Environment

- ◆ Classic symptoms in children after trauma
 - Disordered sleep
 - Intrusive “flashback” memories
 - Altered emotional responses to everyday situations
- ◆ In cases of child abuse/neglect the stresses are often prolonged and unavoidable
 - Long-term stress reactions are common

Stress and psychology

- ◆ Significant behavior problems
 - ◆ Emotional instability
 - ◆ Depression
 - ◆ Tendency to be aggressive or violent with others

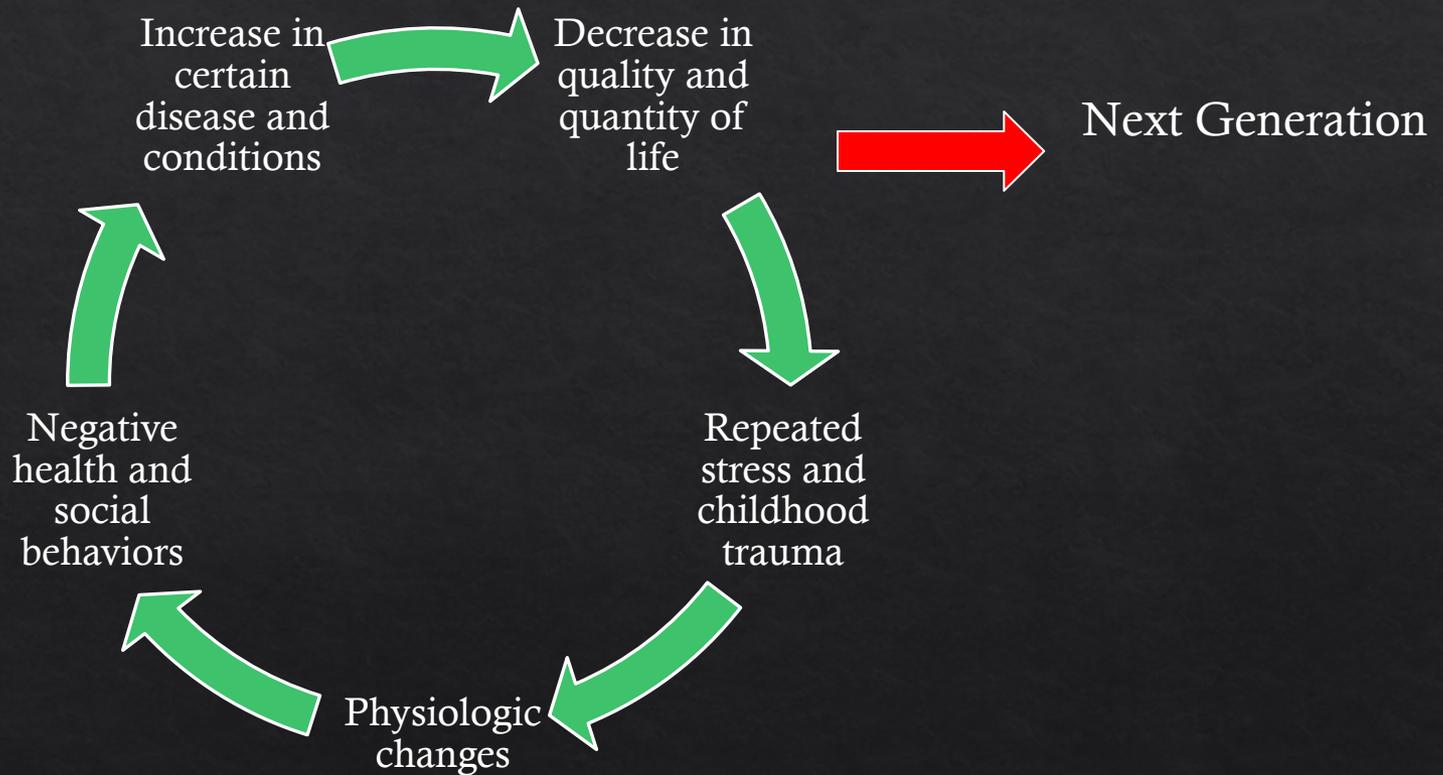


◆ They may be children, but they can have PTSD

Additional psychosocial effects

- Emotional instability
 - Depression
 - Tendency toward aggression
 - Poor or tentative attachment
 - Decreased self-esteem, -worth and -efficacy
 - Chaotic interpersonal relationships
 - Sleep disturbance
- ◊ Disordered sleep
 - ◊ Intrusive “flashback” memories
 - ◊ Altered emotional responses to everyday situations
 - ◊ Restricted range of affect
 - ◊ Hypervigilance
 - ◊ Exaggerated startle response
 - ◊ Attention and concentration problems
 - ◊ Sleep disturbance

The cycle?



Preventing Abuse

- ◇ Foster supportive families and social networks
- ◇ Nurturing parenting skills
- ◇ Stable family relationships
- ◇ Household rules and child monitoring
- ◇ Parental employment
- ◇ Adequate housing
- ◇ Access to health care and social services
- ◇ Caring adults outside the family who can serve as role models or mentors
- ◇ Communities that support parents and take responsibility for preventing abuse

Building Child Resilience

- ◇ 10 Tips (American Psychological Association)
 - ◇ Make connections
 - ◇ Help others
 - ◇ Structure/Routine
 - ◇ Take a break
 - ◇ Self-care
 - ◇ Goal setting and attainment
 - ◇ Positive self-view
 - ◇ Perspective and hopeful outlook
 - ◇ Self-discovery
 - ◇ Accept change

Policy implications?

- ◇ More money to prevention
 - ◇ Evidence based programs
 - ◇ School based interventions
 - ◇ Community organizations with increased resources to expand reach
 - ◇ Increased research funding for resiliency building initiatives
- ◇ Government interventions
 - ◇ Child welfare moves to more of child centered approach
 - ◇ Increased funding for high quality child care
 - ◇ Expansion of affordable health and mental health care

Make the cookie you
want to eat

THANK YOU!

