Coping with Trauma: Toxic Stress and the Aftermath of Childhood Abuse and Neglect

Meggan Goodpasture, MD
Assistant Professor of Pediatrics
Wake Forest Baptist Health
Objectives:

1. Recognize the social/behavioral, neuroendocrine and genetic outcomes of childhood trauma.
2. Recognize the trauma-induced changes in bodily functions and that behaviors may be adaptive and protective when children are in threatening situations.
3. Identify strategies to help families better understand their child’s response to trauma.
4. Become more familiar with trauma-focused anticipatory guidance.
Case 1

- A 16yo female presents to abuse clinic with h/o sexual abuse between ages 10 and 13 by step father.
  - She has become more defiant and is currently out of school because she “has missed so much she can’t go back.”
  - She cuts her arms but denies suicidal ideation.
  - She sleeps up to 12 hours a day and has recently lost 8 pounds. She occasionally smokes marijuana and drinks on the weekends.
  - Mom is not sure to believe her disclosure because she “lies about everything” and has recently been such a trouble maker.
Case 2

• A 7 year old male presents to pediatrics clinic because of “behavior problems.”
  – Aunt states that he is struggling in school and has repeated Kindergarten once already.
  – Teachers think he has ADHD
    • Can’t sit still
    • Disrupts class constantly
  – Lives with aunt because father is in prison for severe DV against mom. Mom is a drug abuser and has trouble caring for the patient and keeping stable housing.
“If I had an hour to save the world, I would spend 59 minutes defining the problem and one minute finding solutions.”
– Albert Einstein
“ACE” Adverse Childhood Events Study

http://www.cdc.gov/ace/findings.htm
Adverse Childhood Events are Common

**Adverse Childhood Events:**
- Emotional Abuse
- Physical Abuse
- Sexual Abuse
- Emotional Neglect
- Physical Neglect
- Mother Treated Violently
- Household Substance Abuse
- Household Mental Illness
- Parental Separation or Divorce
- Incarcerated Household Member

2/3 of study participants reported at least one ACE

1/5 reported three or more ACE
ACEs and Health Outcomes:

Health risk behaviors:
- Alcoholism / Drug use
- Smoking

Sexual behavior:
- Unintended pregnancy
- Early sexual activity
- STDs / Multiple partners

Victimization and Perpetration:
- Risk for Intimate Partner Violence

Mental health:
- Depression
- Suicide attempt

http://www.cdc.gov/ace/findings.htm
ACEs and Health Outcomes:

- Autoimmune Disease
- Frequent Headaches
- Ischemic Heart Disease
- Liver Disease

http://www.cdc.gov/ace/findings.htm
National Scientific Council on the Developing Child

- Established in 2003
  - Three Core Concepts
    - Experiences Build Brain Architecture
    - Serve and Return
    - Toxic Stress Derails Healthy Development
Experiences Build Brain Architecture

• Genes provide basic blueprint

• Experiences influence how or whether genes are expressed - EPIGENETICS

• Plasticity is greatest in the first years of life and decreases with age
Brain Growth and Development Continues After Birth

• Myelination

• Proliferation of synaptic connections

• Development of glial and circulatory support
Genetic / Epigenetics
Neuroendocrine
Emotional/Behavioral
Epigenetics

• Can genes learn?

• No change in the underlying DNA

• Changes phenotype, not genotype

• External modifications that can turn a gene “on” or “off”

• Affect how cells *read* genes
Epigenetics

- Example

-DNA methylation — the addition of a methyl group to part of the DNA molecule can change its structure and prevent certain genes from being expressed.
Epigenetics

• Meaney 2005
  – Environmental “programming” effects.
  – Differences between “pup licking/grooming” behaviors
    • High and low licking/grooming mothers in 1st week of life
  – Associated with DNA methylation that alters glucocorticoid receptor expression and HPA responses to stress
How do early experiences “program” individual differences in stress responses?

- Meaney 2005

  - Persist into adulthood
    - alters behavior and physiology
    - pups grew up anxious

  - Reversed with cross-fostering
Epigenetics

- Murgatroyd et al 2009
- Separate moms from pups early in life
- Alters methylation of DNA and stress response
- Triggers neuroendocrine and behavior changes
Murgatroyd et al 2009

- Passive Stress Coping
- Memory
Neuroendocrine

• McCrory 2011
  – Children exposed to family violence show the same pattern of activity in their brains as soldiers exposed to combat, new research has shown.
National Scientific Council on the Developing Child

— Three Core Concepts

• Experiences Build Brain Architecture

• Serve and Return

• Toxic Stress Derails Healthy Development
Serve and Return

• Interaction between children and significant adults in their life
• Fundamental to brain architecture
• Children naturally reach out:
  – Expressions
  – Babbling
  – Gestures
  – Need this to be reciprocated by adults
Serve and Return

• Caretakers required to be
  – Present
  – Attentive
  – Consistent/predictable
Romania’s Orphans
National Scientific Council on the Developing Child

—Three Core Concepts

• Experiences Build Brain Architecture

• Serve and Return

• Toxic Stress Derails Healthy Development
Stress is subjective...
What is Toxic Stress?

Positive
Brief increases in heart rate, mild elevations in stress hormone levels.

Tolerable
Serious, temporary stress responses, buffered by supportive relationships.

Toxic
Prolonged activation of stress response systems in the absence of protective relationships.

http://developingchild.harvard.edu/topics
Fight or Flight Response

**Saliva**
flow decreases

**Eyes**
pupils dilate

**Skin**
blood vessels constrict;
chills and sweating

**Heart**
beats faster
and harder

**Stomach**
output of digestive enzymes decreases

**Blood vessels**
become more tense;
trembling can occur

**Lungs**
quick, deep breathing

**Bowels**
food movement slows down

**Blood vessels**
blood pressure increases as major vessels dilate
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Acute or Chronic
Toxic Stress

• Child experiences
  – strong, frequent, and/or prolonged adversity
  – physical or emotional abuse
  – chronic neglect
  – caregiver substance abuse or mental illness
  – exposure to violence, and/or the accumulated burdens of family economic hardship
  – without adequate adult support
Impacts Brain Function

• Focus
• Filter distractions
• Executive functioning – focus on multiple streams of information at the same time
• Revise plans
• Cope with adversity

Garner et al. 2012
• aap.org.traumaguide

• November Issue of Pediatrics
aap.org.traumaguide

- Identify traumatized children
- Educate families about toxic stress and the possible biological, behavioral, and social manifestations of early childhood trauma
- Empower families to respond to their child’s behavior in a manner that acknowledges past trauma but promotes the learning of new, more adaptive reactions to stress
“You have told me that your child is having some problems with aggression, acting out, attention and sleep. Just as fever means the body is dealing with an infection, when these behaviors happen, they may mean that the brain and body are responding to a stress or threat. Do you have any concerns that your child is being exposed to a threat or feeling stressed?”
# Identifying Trauma

## Bodily functions response to trauma

| Sleep               | Stimulation of reticular activating system | 1. Difficulty falling asleep  
|                    |                                            | 2. Difficulty staying asleep  
|                    |                                            | 3. Nightmares                |
| Eating             | Inhibition of satiety center, anxiety      | 1. Rapid eating             
|                    |                                            | 2. Lack of satiety          
|                    |                                            | 3. Food hoarding            
|                    |                                            | 4. Loss of appetite         |
| Toileting          | Increased sympathetic tone, increased catecholamines | 1. Constipation            
|                    |                                            | 2. Encopresis               
|                    |                                            | 3. Enuresis                 
|                    |                                            | 4. Regression of toileting skills |
## Response to Trauma: Behaviors

<table>
<thead>
<tr>
<th>Category</th>
<th>More common with</th>
<th>Response</th>
<th>Misidentified as and/or co-morbid with</th>
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| Dissociation (Dopaminergic) | -Females  
-Young children  
-Ongoing trauma | -Detachment  
-Numbing  
-Compliance  
-Fantasy | -Depression  
-ADHD – inattentive type  
-DD |
| Arousal (Adrenergic)      | -Males  
-Older children  
-Witness to violence | -Hypervigilance  
-Aggression  
-Anxiety  
-Exaggerated response | -ADHD  
-ODD  
-CD  
-Bipolar disorder  
-Anger management difficulties |
Response to Trauma: Development and Learning

- Infant/toddler/preschooler:
  - Delay or difficulty meeting milestones
  - Frequent tantrums
  - Aggressive
  - Easily frustrated
  - Attachment may be impacted
Response to Trauma: Development and Learning

• School-aged child
  – Difficulty with school skills
  – Losing details –confabulation—viewed as lying
  – Frequently in trouble with peers for fighting and disrupting
  – Organizational difficulties
  – Can look like LD or ADHD
Response to Trauma: Development and Learning

• Adolescent
  – Can’t keep up academically
  – Disorganized
  – Confabulation increasingly interpreted by others as integrity issue
  – Impulsive: may threaten health
  – May be involved with LE
  – Difficulty with driving, working, etc (tasks requiring rapid interpretation of information)
Helping Caretakers Recognize Trauma Response

• “Think about what it would be like if “a tiger” is in the house. This causes the fight, run or hide response. Rather than lasting for a short time, imaging if it keeps going.”
Helping Caretakers Recognize Trauma Response

• “Remember a time when you felt threatened or anxious (car accident, fight), and remember how your body felt. The heart raced, muscles were ready to go.”
Helping Caretakers Recognize Trauma Response

- “Our bodies and brains are wired to fight, run or hide at times of threat, NOT to learn or remember facts about the event.”
Medication Management

• Medications may need to be used to treat behavioral health concerns while a child is undergoing therapy.

• Parents can be counseled that medications are like a cast for a broken arm. It helps stabilize the child so that healing can take place.
Trauma Specific Anticipatory Guidance

• What you will see:
  – Quick, forceful responses to perceived threat
  – More likely to misread facial and nonverbal clues
  – Difficulty finding words to express feelings
  – Lack skills for self-regulation or for calming down once upset
  – Challenge caretakers
How family can respond

• Don’t take behaviors personally
• Avoid yelling/aggression
• Lower the tone and intensity of your voice
• Come down to child’s eye level
• Use simple direct words/instructions
• Give directions without using strong emotions
• Tell the child it is okay to feel they way she does
How family can respond

• Give child words to label emotions
• Develop breathing techniques and relaxation skills
• Praise child when child calms down
• Give messages that say child is safe, wanted, capable and worthwhile
• Praise even neutral behavior
How family can respond

• Give choices

• Remain available, reliable and responsive

• Repeat, repeat, repeat

• Be patient

• Be aware of your own emotional responses to the child’s behavior.
Therapies for Traumatized Children

• Trauma Focused Cognitive Behavioral Therapy
  TF-CBT

  – REQUIRES ACTIVE CARETAKER
TF-CBT

- Psychoeducation and parenting skills
- Relaxation
- Emotional expression and regulation
- Coping with thoughts
- Creation of trauma narrative
- In vivo exposure
- Joint parent-child sessions
- Staying safe and maintaining recovery
“There can be no keener revelation of a society’s soul than the way in which it treats its children.” – Nelson Mandela
References:

• American Academy of Pediatrics “Helping Foster and Adoptive Families Cope with Trauma.” aap.org.traumaguide