Adversity, Toxic Stress & Resiliency

Baystate Medical Center: Family Advocacy Center
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Adverse Childhood Experiences

- ACE Study (www.acestudy.org)
- 18,000 participants w/Kaiser Permanente
- Completed questionnaire and monitored for long-term impact of ACEs
Adverse Childhood Experiences

ACEs include living in home with:

– Recurrent physical, emotional, or sexual abuse.
– An alcohol or drug abuser.
– An incarcerated household member.
– Someone who is chronically depressed, suicidal, institutionalized or mentally ill.
– Mother being treated violently.
– One or no parents.
– Emotional or physical neglect.
Adverse Childhood Experiences

- Adverse Childhood Experiences determine the likelihood of the ten most common causes of death in the United States:

  - Smoking, obesity, physical inactivity, depression, suicide attempts, alcoholism, illicit drug use, injected drug use, 50+ sexual partners, history of STDs
Negative Coping Mechanisms

- Smoking
- Severe obesity
- Suicide attempts
- Alcoholism
- Drug abuse
- 50+ sex partners
- Repetition of original trauma
- Self Injury
- Eating disorders

Source: Think Trauma Toolkit (NCTSN, 2012)
The “ACE” and Maladaptive Coping

- Early Death
- Disease, disability, social problems
- High Risk Behavior
- Childhood Adversity

Source: Think Trauma Toolkit (NCTSN, 2012)
Variability in Responses to Stressors and Traumatic Events

- The impact of a potentially traumatic event depends on several factors, including:
  - The child’s age and developmental stage
  - The child’s perception of the danger faced
  - Whether the child was the victim or a witness
  - The child’s relationship to the victim or perpetrator
  - The child’s past experience with trauma
  - The adversities the child faces following the trauma
  - The presence/availability of adults who can offer help and protection
Why Address Toxic Stress?

- To reduce many of society’s most complex and costly medical issues, from heart disease to drug abuse.
  - improve patients’ health across the lifespan
  - improving the nation’s health—and economy.
- Any child who shows risk for toxic stress would receive referrals to specialists for intervention/treatment.
- Teach parents how best to promote children’s social and emotional development to minimize toxic stress.
Toxic Stress

- When toxic stress response occurs continually, or is triggered by multiple sources, it can have a cumulative toll on an individual’s physical and mental health—for a lifetime.

- The more adverse experiences in childhood, the greater the likelihood of developmental delays and later health problems, including heart disease, diabetes, substance abuse, and depression.

- Research also indicates that supportive, responsive relationships with caring adults as early in life as possible can prevent or reverse the damaging effects of toxic stress response.
Toxic Stress:

- The missing link between ACE exposure and poor adult outcomes
- Identifying children now for adult health later
<table>
<thead>
<tr>
<th>Positive Stress</th>
<th>Tolerable Stress</th>
<th>Toxic Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Normal part of health development</td>
<td>• Body’s alert system activated to greater degree</td>
<td>• Occurs with strong frequent or prolonged adversity</td>
</tr>
<tr>
<td>• Brief increase in heart rate and blood pressure</td>
<td>• Activation is time-limited and buffered by caring relationship</td>
<td>• No supportive caregiver</td>
</tr>
<tr>
<td>• Mild elevations in hormone levels</td>
<td>• Brain and organs recover</td>
<td>• Disrupts brain architecture and other organ systems</td>
</tr>
<tr>
<td>• Example: Final exam, big game</td>
<td>• Example: Death of grandparent, car accident</td>
<td>• Increased risk of stress-related disease and cognitive impairment</td>
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<tr>
<td></td>
<td></td>
<td>• Example: abuse, neglect, caregiver substance dependence or mental illness</td>
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</tbody>
</table>

National Scientific Council on the Developing Child
Examples of Causes of Toxic Stress

- poverty
- abuse
- neglect
- neighborhood violence
- substance abuse or mental illness of a caregiver
- **absence of a supportive caregiver=constant high alert**
The Impact of Toxic Stress on the Brain

At birth, the brain is not fully formed and contains twice as many nerve cells as there will be at age 6.

- Which cells survive and thrive and which ones do not is determined by a combination of effects involving genes and experiences.

By age 6, the cells which have survived will form thousands of connections with other cells.

Source: Rowe J. Creating Trauma-Informed CW systems, Chapter 3 p: 33
Brain development happens from the bottom up:

- From primitive (basic survival)
- To more complex (rational thought, planning, abstract thinking)
Brain Development

- The brain develops by forming connections.
- Interactions with caregivers are critical to brain development.
- The more an experience is repeated, the stronger the connections become.
Brain process under typical conditions

Observe → Input → Interpret → Process → Evaluate Options → Plan → Act

Joshua Arvidson, 2011
Alarm system "Express Route"

Observe → Interpret

React (Flight - Flight - Freeze)

Act

Process Evaluate Options Plan

Danger

Joshua Arvidson, 2011
With repeated stress, the Alarm System “Express Route” becomes the main road.
Toxic Stress Effects The Brain

- Amygdala hypertrophy
  - Alarm turned on-not able to take input to quiet alarm
  - Remarkable non-verbal skills (street smarts)
  - Often misinterpret non-verbal cues

- Hippocampus atrophy
  - Difficulty with learning and memory

- Frontal Cortex
  - Difficulty with executive functioning
    - Impulse control, working memory and cognitive flexibility
Toxic Stress Derails Healthy Development
Toxic Stress Can Lead To:

- Developmental delays
- Learning disabilities
- Childhood behavior problems
- Diabetes
- Heart disease
- Depression
- Drug abuse/alcoholism
Examples of Symptoms After Exposure to Toxic Stress by Age

<table>
<thead>
<tr>
<th>Age Birth to 5</th>
<th>Age 6-11</th>
<th>Age 12-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep and/or eating disruptions</td>
<td>Nightmares, sleep disruptions</td>
<td>Antisocial behavior</td>
</tr>
<tr>
<td>Withdrawal/lack of responsiveness</td>
<td>Aggression and difficulty with peer relationships in school</td>
<td>School failure</td>
</tr>
<tr>
<td>Intense/pronounced separation anxiety</td>
<td>Difficulty with concentration and task completion in school</td>
<td>Impulsive and/or reckless behavior</td>
</tr>
<tr>
<td>Inconsolable crying</td>
<td>Withdrawal and/or emotional numbing</td>
<td>School truancy</td>
</tr>
<tr>
<td>Developmental regression, loss of acquired skills</td>
<td>School avoidance and/or truancy</td>
<td>Substance abuse</td>
</tr>
<tr>
<td>Intense anxiety, worries, and/or new fears</td>
<td></td>
<td>Running away</td>
</tr>
<tr>
<td>Increased aggression and/or impulsive behavior</td>
<td></td>
<td>Involvement in violent or abusive dating relationships</td>
</tr>
<tr>
<td>Dissociation</td>
<td></td>
<td>Depression</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anxiety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Withdrawal</td>
</tr>
</tbody>
</table>
Young children who have experienced toxic stress may:

- Express their distress through strong physiological and sensory reactions (e.g., changes in eating, sleeping, activity level, responding to touch and transitions)
- Become passive, quiet, and easily alarmed
- Withdrawn, lack of responsiveness, dissociative, numbness
- Intense anxiety, worry, become fearful, especially regarding separations and new situations
- Experience confusion about assessing threats and finding protection, especially in cases where a parent or caretaker is the aggressor
- Engage in regressive behaviors (e.g., baby talk, bed-wetting, crying)
- Experience strong startle reactions, night terrors, or aggressive/impulsive outbursts
- Blame themselves due to poor understanding of cause and effect and/or magical thinking
Effects of Toxic Stress

- Attachment
- Biology
- Mood regulation
- Dissociation
- Behavioral control
- Cognition
- Self-concept
- Development
Adverse Childhood Experiences

• Abuse and Neglect (e.g., psychological, physical, sexual)
• Household Dysfunction (e.g., domestic violence, substance abuse, mental illness)

Impact on Child Development

• Neurobiological Effects- Toxic Stress (e.g., brain abnormalities, stress hormone dysregulation)
  • Psychosocial Effects (e.g., poor attachment, poor socialization, poor self-efficacy)
  • Health Risk Behaviors (e.g., smoking, obesity, substance abuse, promiscuity)

Long-Term Consequences

Disease and Disability
• Major Depression, Suicide, PTSD
• Drug and Alcohol Abuse
• Heart Disease
• Cancer
• Chronic Lung Disease
• Sexually Transmitted Diseases
• Intergenerational transmission of abuse

Social Problems
• Homelessness
  • Prostitution
• Criminal Behavior
  • Unemployment
  • Parenting problems
  • Family violence
  • High utilization of health and social services

Behaviors You Often See:
What Toxic Stress Can Look Like (17 month old)

“The baby is fine”

Never cries

Serious

No distress with medical exams

Quiet

(Kaplow, Dodge, Amaya-Jackson & Saxe, 2005; Shields & Cicchetti, 2001)
Behaviors You Often See: What Toxic Stress Can Look Like

- Anger
- Hostility and coldness
- Inability to trust other people
- Fear
- Problems with change and transitions
- Acting guarded and anxious

(Kaplow, Dodge, Amaya-Jackson & Saxe, 2005; Shields & Cicchetti, 2001)
Behaviors You Often See:
What Toxic Stress Can Look Like

- Difficulty being redirected
- Physical and emotional reactivity
- Difficulty calming down after outbursts
- Difficulty letting go, holding onto grievances
- Inability to sit still
- Rejecting support from peers and adults

(Kaplow, Dodge, Amaya-Jackson & Saxe, 2005; Shields & Cicchetti, 2001)
Getting Development Back on Track

• Traumatized children and adolescents can learn new ways of thinking, relating, and responding.

• New experiences with trusted adults and peers can help them to develop alternative views of themselves, the world, and others.

• Traumatized children can learn new ways of handling overwhelming emotion and new positive coping strategies.

Source: Think Trauma Toolkit (NCTSN, 2012)
What Can You Do?

- Educate yourself about children and families you work with
- Help to communicate physical and psychological safety
- Help parents to understand their children’s behaviors
- Model and assist children and parents in developing and practicing new coping strategies.
Response

- Office Readiness
  - Colleague support
  - Screening
  - Calm spaces to address
  - Resources and referrals
  - Crisis response resources

- Positive Relationship
  - Acknowledge, empathy
  - Resist the urge to react
  - Sensitivity to rejection/abandonment
  - Look at all behavior with a toxic stress lens.
In Conclusion…

- When the stressors are severe and long-lasting and adult relationships are unresponsive or inconsistent, it’s important for families, friends, and communities to intervene with support, services, and programs that address the source of the stress and the lack of stabilizing relationships in order to protect the child from their damaging effects.
Questions and Discussion
Contact Information

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Resources for Today’s Training

- National Child Traumatic Stress Network products
  - Child Welfare Toolkit
  - Think Trauma


- [http://pediatrics.aappublications.org/content/129/1/e232.full.pdf](http://pediatrics.aappublications.org/content/129/1/e232.full.pdf)