CHILD VICTIMS & CHILDREN IN VIOLENT ENVIRONMENTS
PART I

9th National Strengthening Indian Nations Justice for Victims of Crime Conference
“Reviving Our Sacred Legacy: Lighting the Path to our Future”
December 9, 10 & 11, 2004

THE IMPACT OF VIOLENCE AND EARLY TRAUMA ON THE DEVELOPING BRAIN

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Wounds That Time Won't Heal: The Neurobiology of Child Abuse

“Society reaps what it sows in nurturing its children. Whether abuse of a child is physical, psychological, or sexual, it sets off a ripple of hormonal changes that wire the child's brain to cope with a malevolent world.

It predisposes the child to have a biological basis for fear, though he may act and pretend otherwise.

Early abuse molds the brain to be more irritable, impulsive, suspicious, and prone to be swamped by fight-or-flight reactions that the rational mind may be unable to control.

The brain is programmed to a state of defensive adaptation, enhancing survival in a world of constant danger, but at a terrible price.

To a brain so tuned, Eden itself would seem to hold its share of dangers; building a secure, stable relationship may later require virtually superhuman personal growth and transformation.”

Martin H. Teicher, M.D., Ph.D.

National Findings (2002)

- 1.8 million reports on 3 million children

- 896,000 child victims (a rate of 12.3 / 1000 children)

- Boys and girls equally at risk for maltreatment
  
  (48.1% boys vs 51.9% girls)

- Children 3 and younger are more likely to be maltreated (a rate of 16.0 / 1000 children)

- Almost 2 children per 100,000 died from abuse
  
  (nearly 75% were under 4 yrs old; 37.6% due to neglect only)

National Findings

- 60.5% neglect (includes medical neglect)
- 18.6% physical abuse
- 9.9% sexual abuse
- 6.5% psychological maltreatment
- 18.9% additional types of maltreatment

(overlapping cases, therefore does not equal 100%)


Race and Ethnicity

<table>
<thead>
<tr>
<th>Race</th>
<th>% Abused</th>
<th>% of Pop</th>
<th>Rate**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian:</td>
<td>54.2%</td>
<td>69%</td>
<td>10.7</td>
</tr>
<tr>
<td>African American:</td>
<td>26.1%</td>
<td>12%</td>
<td>20.2</td>
</tr>
<tr>
<td>Hispanic:</td>
<td>11.0%</td>
<td>13%</td>
<td>9.5</td>
</tr>
<tr>
<td>Native American:</td>
<td>1.8%</td>
<td>1%</td>
<td>21.7</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>.9%</td>
<td>4%</td>
<td>3.7</td>
</tr>
</tbody>
</table>

** Rate per 1000 children

The Scope of the Problem Locally

2002 Regional Data

<table>
<thead>
<tr>
<th></th>
<th>Total Findings</th>
<th>Abuse Rate</th>
<th>Physical</th>
<th>Neglect</th>
<th>Medical Neglect</th>
<th>Sexual</th>
<th>Emotional</th>
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<tbody>
<tr>
<td>WY</td>
<td>743</td>
<td>5.7</td>
<td>213</td>
<td>420</td>
<td>20</td>
<td>85</td>
<td>5</td>
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<td></td>
<td>30.8%</td>
<td>60.7%</td>
<td>2.9%</td>
<td>12.3%</td>
<td>.7%</td>
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<tr>
<td>MT</td>
<td>2511</td>
<td>9.2</td>
<td>1349</td>
<td>689</td>
<td>33</td>
<td>205</td>
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<tr>
<td></td>
<td>67.6%</td>
<td>34.5%</td>
<td>1.7%</td>
<td>10.3%</td>
<td>.6%</td>
<td></td>
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<tr>
<td>ND</td>
<td>2275</td>
<td>10.2</td>
<td>337</td>
<td>965</td>
<td>54</td>
<td>138</td>
<td>781</td>
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<td></td>
<td>22.6%</td>
<td>6.6%</td>
<td>3.6%</td>
<td>9.2%</td>
<td>52.3%</td>
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<tr>
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<td>5274</td>
<td>20.2</td>
<td>818</td>
<td>3345</td>
<td>No data</td>
<td>186</td>
<td>925</td>
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<td></td>
<td>20.7%</td>
<td>84.4%</td>
<td>4.7%</td>
<td>23.4%</td>
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<tr>
<td>NE</td>
<td>4311</td>
<td>8.9</td>
<td>863</td>
<td>2802</td>
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<td>376</td>
<td>268</td>
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<tr>
<td></td>
<td>22.1%</td>
<td>71.7%</td>
<td>.1%</td>
<td>9.6%</td>
<td>6.9%</td>
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</tbody>
</table>


"Social Archeology"
- What was laid down in the past is what our community builds on
- The past is the foundation (whether good or poor) that the present is built on
- The quality of the present impacts the potential for the community’s future

"Brain Archeology"
- What was laid down in the past is what our brain-based behavior builds on
- The past neurological experiences provide the foundation (whether good or poor) that present functioning is built on
- The quality of the present functioning impacts the potential for the individual’s future
Brain Structures

Abstract thought
Concrete Thought
Affiliation
"Attachment"
Sexual Behavior
Emotional Reactivity
Motor Regulation
"Arousal"
Appetite/Satiety
Sleep
Blood Pressure
Heart Rate
Body Temperature

Diencephalon
Limbic
Neocortex
Brainstem
Spinal Cord
### Neurological Chart of Development: Functional Organization

<table>
<thead>
<tr>
<th>FUNCTIONAL DIVISION</th>
<th>AGE OF FUNCTIONAL Maturity</th>
<th>FUNCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neocortex</td>
<td>Puberty</td>
<td>Abstraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-image</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Socialization</td>
</tr>
<tr>
<td></td>
<td>Childhood</td>
<td>Affiliation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Attachment</td>
</tr>
<tr>
<td>Limbic</td>
<td>Early childhood</td>
<td>Mood regulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fine motor skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Large motor skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sleep &amp; appetite regulation</td>
</tr>
<tr>
<td>Diencephalon</td>
<td>Infancy</td>
<td></td>
</tr>
<tr>
<td>Brainstem</td>
<td>3rd trimester to 6 months</td>
<td>Primary state regulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Core physiological reflexes and regulatory functions</td>
</tr>
<tr>
<td>Spinal Cord</td>
<td>3rd trimester</td>
<td></td>
</tr>
</tbody>
</table>
### Shifting Developmental Activity Across Brain Regions

<table>
<thead>
<tr>
<th>Brain Region</th>
<th>Age of Greatest Activity</th>
<th>Age of Functional Maturity</th>
<th>Key Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neocortex</td>
<td>Childhood</td>
<td>Adult</td>
<td>Reasoning, problem solving, abstract thinking, secondary sensory integration</td>
</tr>
<tr>
<td>Limbic</td>
<td>Early childhood</td>
<td>Puberty</td>
<td>Memory, socio-emotional communication and attachment, regulation of emotions, primary sensory integration</td>
</tr>
<tr>
<td>Diencephalon</td>
<td>Infancy</td>
<td>Childhood</td>
<td>Motor control, secondary sensory processing</td>
</tr>
<tr>
<td>Brainstem</td>
<td>In utero</td>
<td>Infancy</td>
<td>Core physical state regulation, primary sensory processing</td>
</tr>
</tbody>
</table>
The “Sponge”

- The undifferentiated developing brain is critically dependent on environmental cues

- Disruption or the lack of crucial cues at critical times can result in disorganization or compromised function

State-Dependent “Storage” and Recall

The brain processes, places “value” on, stores and acts on information that is, at that moment, important to the organism
Use-Dependent Development

The more a neural system is “activated” the more that system changes to reflect that pattern of activation.

This is the basis for development, memory and learning.

www.childtrauma.org
Differential Response to Threat

<table>
<thead>
<tr>
<th>Dissociation (avoidance and withdrawal)</th>
<th>Hyperarousal (fight or flight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached</td>
<td>Hypervigilance</td>
</tr>
<tr>
<td>Numb</td>
<td>Anxious</td>
</tr>
<tr>
<td>Compliant</td>
<td>Reactive</td>
</tr>
<tr>
<td>Decreased heart rate</td>
<td>Alarm response</td>
</tr>
<tr>
<td>Suspension of time</td>
<td>Increased heart rate</td>
</tr>
<tr>
<td>De-realization</td>
<td>Freeze: fear</td>
</tr>
<tr>
<td>“Mini-psychoses”</td>
<td>Flight: panic</td>
</tr>
<tr>
<td>Fainting</td>
<td>Fight: terror</td>
</tr>
<tr>
<td>More common in girls than boys</td>
<td>More common in boys than girls</td>
</tr>
<tr>
<td>More common in younger ages</td>
<td>More common in older children</td>
</tr>
<tr>
<td>More common if physical pain or torture is present</td>
<td>More common if event is simply witnessed</td>
</tr>
<tr>
<td>Particularly if there is a feeling helpless or without a means of escape</td>
<td>Particularly if there is a sense of having an active role / a chance to do something</td>
</tr>
</tbody>
</table>
Sometimes the Glass is More than Half-Full

Different levels of activation / readiness

How Fear Changes Thinking and Feeling

<table>
<thead>
<tr>
<th>HYPERAROUSAL CONTINUUM</th>
<th>Rest</th>
<th>Vigilance</th>
<th>Resistance (Crying)</th>
<th>Defiance (Tantrums)</th>
<th>Aggression</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISSOCIATIVE CONTINUUM</td>
<td>Rest</td>
<td>Avoidance</td>
<td>Compliance (Robotic / detached)</td>
<td>Dissociation (Fetal rocking)</td>
<td>Fainting</td>
</tr>
<tr>
<td>REGULATING BRAIN REGION</td>
<td>Neocortex</td>
<td>Cortex</td>
<td>Limbic</td>
<td>Midbrain</td>
<td>Brainstem</td>
</tr>
<tr>
<td>COGNITIVE STYLE</td>
<td>Abstract</td>
<td>Concrete</td>
<td>Emotional</td>
<td>Reactive</td>
<td>Reflexive</td>
</tr>
<tr>
<td>INTERNAL STATE</td>
<td>Calm</td>
<td>Arousal</td>
<td>Alarm</td>
<td>Fear</td>
<td>Terror</td>
</tr>
</tbody>
</table>

www.childtrauma.org
These factors **Increase the Risk** (prolonging the intensity or duration of the acute stress response)

- Multiple or repeated event (e.g., domestic violence or physical abuse)
- Physical injury to the child
- Involves physical injury or death to a loved one, particularly the mother
- Dismembered or disfigured bodies seen
- Destruction of home, school or community
- Disrupts community infrastructure (e.g., earthquake, tornado)
- Perpetrator is a family member
- Long duration (e.g., a flood)

- Female
- Age (younger is more vulnerable)
- Subjective perception of physical harm
- History of previous exposure to trauma
- No cultural or religious anchors
- No shared experience with peers (i.e., experiential isolation)
- Low IQ
- Pre-existing mental health disorder (especially if anxiety related)

These factors **Decrease the Risk** (reducing the intensity or duration of the acute stress response)

- Single event
- Perpetrator is a stranger
- No disruption of family or community structure
- Short duration (e.g., tornado)

- Cognitively capable of understanding abstract concepts
- Healthy coping skills
- Educated about normal post-trauma responses
- Immediate post-trauma interventions
- Strong ties to cultural or religious belief system

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**Post-Traumatic Stress Disorder**

**Risks and Attenuating Factors**

- Trauma directly impacts caregivers
- Anxiety in primary caregivers
- Continuing threat and disruption to family
- Chaotic, overwhelmed family
- Physical isolation
- Distant caregiver
- Absent caregivers

- Intact, nurturing family supports
- Non-traumatized caregivers
- Caregivers educated about normal post-trauma responses
- Strong family beliefs
- Mature and attuned parenting skills
Trauma and Tribal Children

Long Term Costs of Childhood Trauma

Trauma Contributes to an Increase in Emotional, Behavioral & Social Problems
- ATTACHMENT PROBLEMS
- EATING DISORDERS
- SUICIDAL BEHAVIOR
- ALCOHOLISM / SUBSTANCE ABUSE
- ANXIETY
- VIOLENT BEHAVIOR

Trauma Contributes to an Increase Risk for Physical Problems in Adulthood
- HEART DISEASE
- GASTROINTESTINAL PROBLEMS
- CANCER
- CHRONIC LUNG DISEASE

Brain Growth versus Public Expenditures on Children Age 0 - 18

Percent of total brain growth vs. Cumulative percent of public spending by age in years.
Early Parenting Influences

- Touch, taste, sight, smell, sound and movement in the caregiver-infant interaction
- These primary sensations play a major role in providing the patterned, repetitive sensory stimulation and experiences that help organize the child’s developing brain
- Sensory stimulation can be both enrichingly positive and devastatingly negative

Primary Caregiver Behavior

- Mediates genetic differences
- Modulates / regulates infant’s response to stress directly and by modeling
- Facilitates or inhibits experience-dependent maturation

www.childtrauma.org
Attachment

- The essential bond between child and caregiver
- Early sensory deprivation may be the most destructive form of abuse
  - Lack of attachment
  - Emotional neglect
- Distortions in attachment may be the most difficult to ameliorate

Secure Attachment

- Caregiver:
  - Responsive, available, supportive
  - Appropriate in timing, flexibility
  - Positive memories of own childhood

- Child:
  - Self-worth
  - Competence
  - Capacity for obtaining social support
Insecure Attachment Types

- Avoidant
  - Caregiver:
    - Consistently unavailable
    - Avoids physical contact or is intrusive
    - Insensitive
    - Idealizes & represses own childhood
  - Child:
    - Deactivated attachment system
    - Little stress upon separation
    - Lonely
    - Hostile/negative

- Ambivalent

- Disorganized
Ambivalent

- Caregiver:
  - Inconsistently available
  - Preoccupied
  - Role reversal
  - Ambivalent about own childhood
- Child:
  - Hyperactivation of attachment system
  - Doubts certainty of care
  - Adult oriented & needy

Disorganized

- Caregiver:
  - Source of & solution to child’s anxiety
  - Frightened of & frightening in childcare
  - Unresolved loss issues
- Child:
  - No coherent coping strategy
  - Contradictory & inconsistent behaviors
  - Hostile/self-destructive
Building Cortical Capacity

- Healthy attachment experiences lead to healthy development of limbic and cortical areas involved in social affiliation and modulation of impulsivity
- Education, specifically literacy, helps build in cortical systems that modulate reactivity
- Therefore, enriched cognitive and socio-emotional experiences during childhood help build healthy brains

Intervention Strategies

- Ameliorate environmental stressors
- Improve quality of guardian/child relationship
  - Increase support for parent
  - Increase support for child
  - Increase guardian’s interest in child
Parenting Resources

<table>
<thead>
<tr>
<th>Social-Environmental Pressures</th>
<th>Resource-surplus Predictable Stable / Safe</th>
<th>Resource-limited Unpredictable Novel</th>
<th>Resource-poor Inconsistent Threatening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevailing Cognitive Style</td>
<td>Abstract Creative</td>
<td>Concrete Superstitious</td>
<td>Reactive Regressive</td>
</tr>
<tr>
<td>Prevailing Affective Tone</td>
<td>CALM</td>
<td>ANXIETY</td>
<td>TERROR</td>
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<tr>
<td>Systemic Solutions</td>
<td>INNOVATIVE</td>
<td>SIMPLISTIC</td>
<td>REACTIONARY</td>
</tr>
<tr>
<td>Focus of Solution</td>
<td>FUTURE</td>
<td>Immediate FUTURE</td>
<td>PRESENT</td>
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<tr>
<td>Rules, Regulations and Laws</td>
<td>Abstract Conceptual</td>
<td>Superstitious Intrusive</td>
<td>Restrictive Punitive</td>
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<td>Childrearing Practices</td>
<td>Nurturing</td>
<td>Ambivalent Obsessive Controlling</td>
<td>Apathetic Oppressive Harsh</td>
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<td>Flexible</td>
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<td></td>
<td>Enriching</td>
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Societal Factors

- Poverty
- Substance abuse
- Violence
- Isolation
Risk Factors with Strong Associations to Child Abuse and Neglect

- **Poverty** (especially receipt of public assistance)
  Child abuse is 22 times more likely in families with annual incomes below $15,000 than in families with incomes above $30,000 (1996 national study)
- **Substance Abuse**
  Substance abuse is implicated in between 1/3 and 2/3 of substantiated reports to child protective services agencies (1999, DHHS)

Traumatic Stress / Concern for Others

*Sphere of Concern*

- Society
- Community
- Family
- Self
What is Social Fabric?

- Common values, beliefs, language
- Respect and concern for each other
- Capacity to invest in and share with each other
- These are brain-mediated capabilities, the socio-emotional “glue” for a family, community and society

Where Do We Go From Here?

- The health and creativity of a community is renewed each generation through its children.
- The family, community, or society that understands and values its children thrives – the society that does not is destined to fail.
For More Information:

- Much of the material presented in this workshop represents the work of:
  
  Bruce Perry, Ph.D., M.D.
  and his associates at the
  Child Trauma Academy
  Baylor College of Medicine
  - [www.childtrauma.org](http://www.childtrauma.org)
  - [www.ChildTraumaAcademy.com](http://www.ChildTraumaAcademy.com)

- Additional Acknowledgement:
  
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  St. Luke’s Regional Medical Center
  Boise, ID

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