

# Trauma Stress

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# Preface

- Trauma is a..
  - *"blow to the psyche that breaks through one's defenses so suddenly and with such force that one cannot respond effectively."*

Kai Erickson  
*In the Wake of a Flood, 1979*

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# Preface



Trauma exposure is not uncommon

- Divorce
- Financial difficulties
- Homelessness
- Sickness
- Violence
- Deployment
- Death
- Unemployment
- Bullying
- Academic Difficulties

ACE Study reported over 50% of adults had experienced at least one form of childhood adversity

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[www.traumasensitiveschools.org](http://www.traumasensitiveschools.org)

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## Preface: Activity

- The Importance of Self Care
  - Especially critical for educators without a mental health background as they may not have been given guidance on this as part of their pre-service training.
  - Let's practice what we preach!

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## Preface: Activity

- The Importance of Self Care
1. Sit comfortably with your feet flat on the floor.
  2. Close your eyes and breath normally.
  3. Think of your conscious attention as a radio tuner that you can adjust.



Cicchetti & Gill (2016)

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## Preface: Activity

- The Importance of Self Care
4. Tune your radio, pay attention to,
    - a. the sounds outside of this room.
    - b. the sounds inside this room.
    - c. the sounds your body is making.
    - d. take three deep breaths – listen to the sounds of those breaths.
    - e. the sounds your body is making.
    - f. the sounds inside this room.
    - g. the sounds outside of this room.
  5. Open your eyes.



Cicchetti & Gill (2016)

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## Traumatic Stress: Defined

- Positive Stress
  - Moderate, short-lived stress responses. Essential for normal development.
- Tolerable Stress
  - Potentially harmful, but short-lived acute stressors.
- Toxic Stress
  - Strong, frequent, prolonged activation of stress mechanisms.

Center on the Developing Child (Harvard); National Scientific Council on the Developing Child (2014)

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## Traumatic Stress: Defined

- Three Core Concepts in Early Development
  - Experiences Build Brain Architecture
  - Serve & Return Interaction Shapes Brain Circuitry
  - Toxic Stress Derails Health Development
- Question: *Given your understanding of Toxic Stress, what are your thoughts regarding how the school should support trauma exposed students?*



Center on the Developing Child (Harvard)

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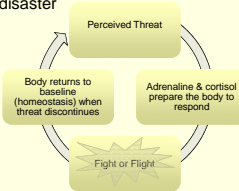
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## Traumatic Stress: Defined

- Acute vs. Complex Trauma
  - Acute Trauma
    - A time-limited (typically tolerable) stressor  
e.g., car accident, natural disaster

- In response to an acute stressor the body releases stress hormones that decrease digestive & immune functioning and increase heart rate and blood pressure.
- When the threat is gone the body should return to baseline



National Center for PTSD (2016). <http://www.ptsd.va.gov/professional/PTSD-overview/complex-ptsd.asp>  
The National Child Traumatic Stress Network. (n.d.). <http://nctsn.org/trauma-types/complex-trauma>  
Cicchetti & Gill (2016)

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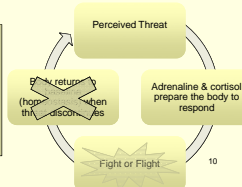
## Traumatic Stress: Defined

### ■ Acute vs. Complex Trauma

#### ■ Complex Trauma (Toxic Stressors)

- Exposure to multiple traumatic events; and the wide-ranging, long term impact of this exposure.  
e.g., long-term physical/sexual abuse, chronic/ongoing exposure to community violence.

- Frequent/long exposure to stress results in the stress response being activated more easily.
- Body does not return to baseline as quickly.
- Stress hormones negatively effect health, brain development.



Cicchetti & Gill (2016)

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## Traumatic Stress: Incidence

### ■ The need for trauma informed care

- Adverse Childhood Experience (ACE) Study
- 18,000 adults completed a physical exam and answered "yes" or "no" to 9 childhood (prior to age 18) experiences.
  1. Emotional Abuse
  2. Physical Abuse
  3. Sexual Abuse
  4. Physical Neglect
  5. Emotional Neglect
  6. Substance using Household Member
  7. Mentally Ill Household Member
  8. Witnessed Domestic Violence
  9. Incarcerated Family Member

Felitti et al. (1998)

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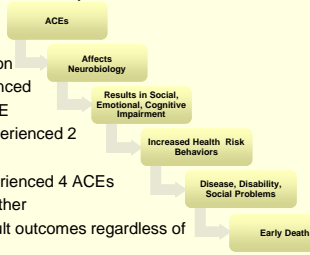
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## Traumatic Stress: Incidence

### ■ Adverse Childhood Experience (ACE)

#### Results

- ACEs are common
  - 50% experienced at least 1 ACE
  - 25% had experienced 2 ACEs
  - 6% had experienced 4 ACEs
- ACEs occur together
- ACEs predict adult outcomes regardless of demographics



Felitti et al. (1998)

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## Traumatic Stress: Incidence

- The need for trauma informed care
  - General Population
    - Trauma Exposure 43% (18 yr. olds)
    - PTSD Lifetime Prevalence 8.7% (U.S.)
    - PTSD 12 month Prevalence 3.5% (U.S.)
  - Urban Populations
    - Trauma Exposure 82.5% (19-24 yr. olds, U.S.)
    - PTSD 30%
  - Foster Youth
    - Trauma Exposure 80.3% (17-18 yr. olds)
    - PTSD 30%
  - 1 out of 10 children ages 0-6 had witnessed a knifing or shooting.

APA (2013); Buka et al. (2001); Breslau et al. (2004); Copeland et al. (2007); Costello et al., 2002, Dyregory & Yule, 2006; Giaconia et al (1995); Pecora et al. (2009); Taylor et al. (1992)

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## Traumatic Stress: Neurobiology

- Toxic Stress Affects the Brain
  - Neural circuits for dealing with stress are particularly malleable early in development.
  - Learning to respond to stress is essential to normal development.
  - However, frequent/sustained activation of the neurobiological mechanisms responsible for responding to stressors may increase vulnerability to a range of behavioral and physiological disorders over a lifetime.

National Scientific Council on the Developing Child (2005/2014)

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## Traumatic Stress: Neurobiology

- Toxic Stress Affects the Brain
  - The response to stress includes the activation of hormone and neurochemical systems.
    - Adrenaline – mobilizes energy stores and alters blood flow.
    - Cortisol – mobilizes energy stores, enhances certain types of memory, activates immune responses.
      - "... long-term elevations in cortisol levels can alter the function of a number of neural systems, suppress the immune response, and even change the architecture of regions in the brain that are essential for learning and memory" (p. 3).
    - [The Impact of Early Adversity on Children's Development](#)

National Scientific Council on the Developing Child (2005/2014)

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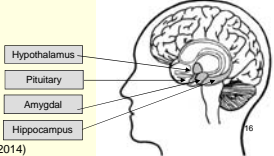
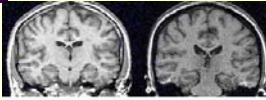
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## Traumatic Stress: Neurobiology

### ■ Toxic Stress Affects the Brain

- **Sustained activation of the neurobiological mechanisms** [hypothalamus-pituitary-adrenocortical (the HPA axis)] **responsible for the stress response** [(and sustained levels of cortisol or corticotropin-releasing hormone (CRH)) **can damage the hippocampus** (a brain structure critical to learning and memory).



National Scientific Council on the Developing Child (2005/2014)

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## Traumatic Stress

### ■ Consequences

- Attachment and relationships
- Physical health
- Emotional responses
- Dissociation
- Behavior
- Cognition
- Self-Concept & Future Orientation

NCTSN (<http://www.nctsn.org/trauma-types/complex-trauma/effects-of-complex-trauma>)

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## Traumatic Stress

### ■ Consequences

- Psychological
  - Increased risk for mental illness
    - Depressive disorders
    - Anxiety disorders (e.g., specific phobia, social anxiety disorder, panic disorder)
    - Trauma- and stressor-related disorders (i.e., disinhibited social engagement disorder, posttraumatic stress disorder, acute stress disorder, adjustment disorders)
    - Dissociative disorders (e.g., dissociative identity disorder, dissociative amnesia, depersonalization/derealization disorder)
    - Sleep-wake disorders (e.g., insomnia disorder, nightmare disorder)
    - Substance-related and addictive disorders

APA (2013); Brock et al. (2016)

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## Traumatic Stress

- Consequences
  - Psychological
    - Disturbed sleep
    - Alcohol and drug use
    - Avoidant behavioral responses
    - Fearfulness
    - Self-blame
    - Decreased self-efficacy

Cooley-Quille & Lorion (1999) Kliewer & Sullivan (2008); Margolin & Gordis (2000)

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## Traumatic Stress

- Consequences
  - Psychological
    - Affects how the brain processes information.
    - What emotion do you see?



- Physically abused children recognized anger sooner than did controls (who had not been abused).

Pollak et al. (2009)

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## Traumatic Stress

- Consequences
  - Psychological
    - Affects how the brain processes information.
    - Which faces are *angry* and which are *sad*?



- When asked to identify faces that showed *angry* or *fearful*, or *angry* or *sad*, abused children over identified anger relative to fear and sadness.
- Controls tended to under identify anger.

Pollak & Kistler (2002)

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## Traumatic Stress

### ■ Consequences

#### ■ Psychological

- Affects how the brain processes information
- "... maltreatment may sensitize children to certain emotional information that may be adaptive in abusive contexts but maladaptive in more normative interpersonal situations."

Pollak et al. (2009, p. 6)

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## Traumatic Stress

### ■ Consequences

#### ■ Behavioral

- With increased trauma exposure the odds that an adolescent will display problem behavior (i.e., attachment difficulties, skipping school, running away from home, substance abuse, suicidality, criminality, self-injury, alcohol use, and victim of sexual exploitation) increases.

Layne et al. (2014)

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## Traumatic Stress

### ■ Consequences

#### ■ Behavioral

- Problems focusing/concentrating (Compas & Boyer, 2001; Pynoos & Nader, 1998; Traveek, 2006)
- Poor social functioning (Rucklidge, 2006)
- Outbursts of anger, hyperactivity, impulsivity (Glod & Teicher, 1996)
  - "... when this stress exposure occurs repeatedly or in the context of high social biological vulnerability, children begin to experience a 'wear and tear' process known as allostatic load. Allostatic load is characterized by less activation in brain regions like the prefrontal cortex that are responsible for reflective self-regulation and sustained attention and increased activation in regions of the limbic system that are associated with automated, emotion-related responses to threat." (McCoy et al., 2015, p. 3)

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## Traumatic Stress

### Consequences

#### Educational

- Decline in academic performance (Kruczek, 2006; Gahen, 2005), lower GPA (Borofsky et al., 2013; Mathews et al., 2009)
- Outbursts of anger, hyperactivity, impulsivity (Glod & Teicher, 1996)
- Decreased IQ (Kira et al., 2012)
- Dropping out of high school (Porche et al., 2011)

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## Consequences

### Demographics

- Growing up in poverty is often associated with high stress hormone levels.
  - Chronic poverty is frequently associated with adverse conditions such as exposure to violence.

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National Scientific Council on the Developing Child (2005/2014)

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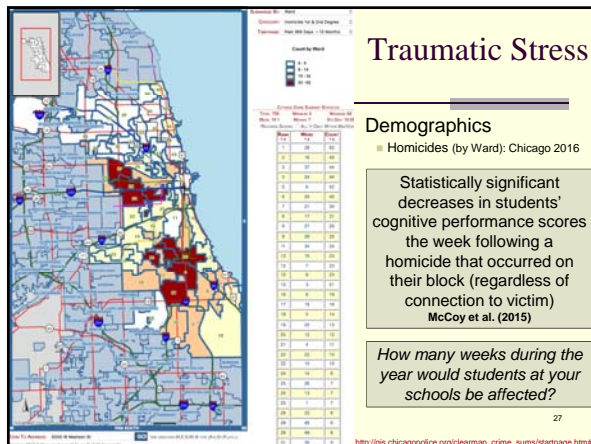
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## Traumatic Stress

### Demographics

Homicides (by Ward): Chicago 2016

Statistically significant decreases in students' cognitive performance scores the week following a homicide that occurred on their block (regardless of connection to victim)  
McCoy et al. (2015)

How many weeks during the year would students at your schools be affected?

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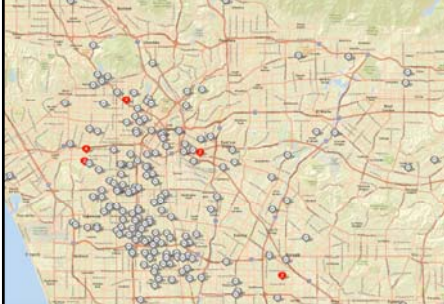
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## Traumatic Stress: Demographics

- **Homicides:** LA area, 7-1-16 to 12-21-16



Statistically significant decreases in students' cognitive performance scores the week following a homicide that occurred on their block (regardless of connection to victim)  
**McCoy et al. (2015)**

How many weeks during the year would students at your schools be affected?

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## Traumatic Stress: The Achievement Gap

"... children's experiences of their communities as unsafe or threatening are likely to affect their mental health through increasing their psychological stress, disrupting their processing of social information, and altering the ways in which they selectively engage with – or disengage from their environments."  
(McCoy et al. 2015, p.1)



Social and Behavioral Determinants of Toxic Stress

The Toxic Stress of Early Childhood Adversity: Rethinking Health and Education Policy

Porche et al. (2011)

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