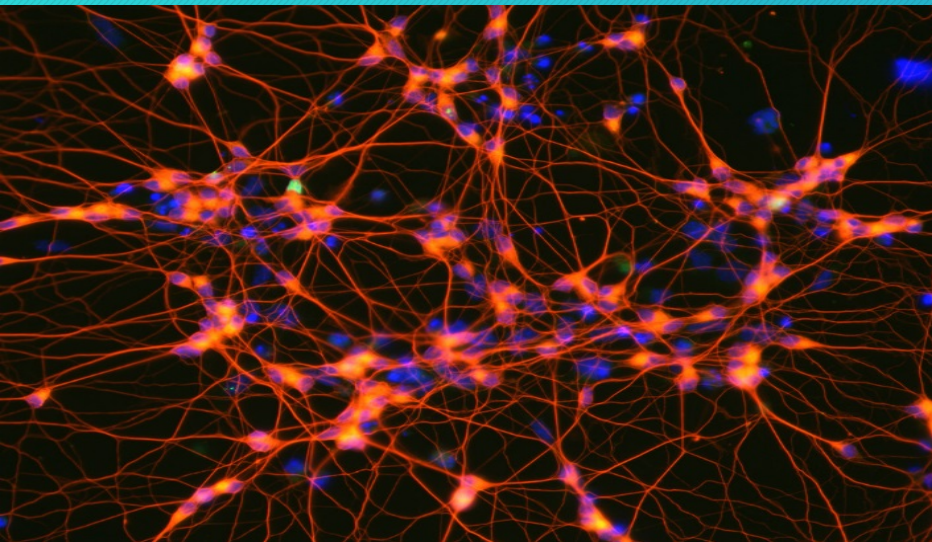


The Brain Behind the Behavior

Understanding the Impact of Adverse Childhood Experiences (ACEs)



**Content
Alert**

Professional Development Day 4/5/19
Ann McGreevy, Supervisor of
Psychological Services

Thank you!

- Thank you for all you do to support students
- Some of you support some of our neediest students
- We don't have control over what happens at home before students arrive at school or what happens when they leave us
- Our jobs are to support and care for them when they are with us

Learning Objectives

1. Learn what Trauma and Adverse Childhood Experiences (ACEs) mean
2. Familiarize ourselves with the statistics of Adverse Childhood Experiences
3. Learn the impact of Adverse Childhood Experiences on brain development, learning, behavior and social interactions
4. Learn ways to support all students



What is Trauma?

Trauma is an **inescapable** stressful event that **overwhelms** an individuals' coping mechanisms and **triggers** the fear response system in our brains and bodies

The fear response is hardwired into our brains to keep us alive. It's a physical response to danger

- what happens to our bodies when we're terrified?



Traumatic Events Can Have a Lasting Impact

Trauma can have a lasting impact on a person because some students will continue to organize their life as if the trauma were still going on, even if it's not. In these cases, every new encounter or event is contaminated by the past

The Body Keeps the Score, Bessel Van Der Kolk, 2014
laurellife.com

Childhood Trauma

Childhood trauma is among the most relevant and significant psychosocial factors affecting education today.



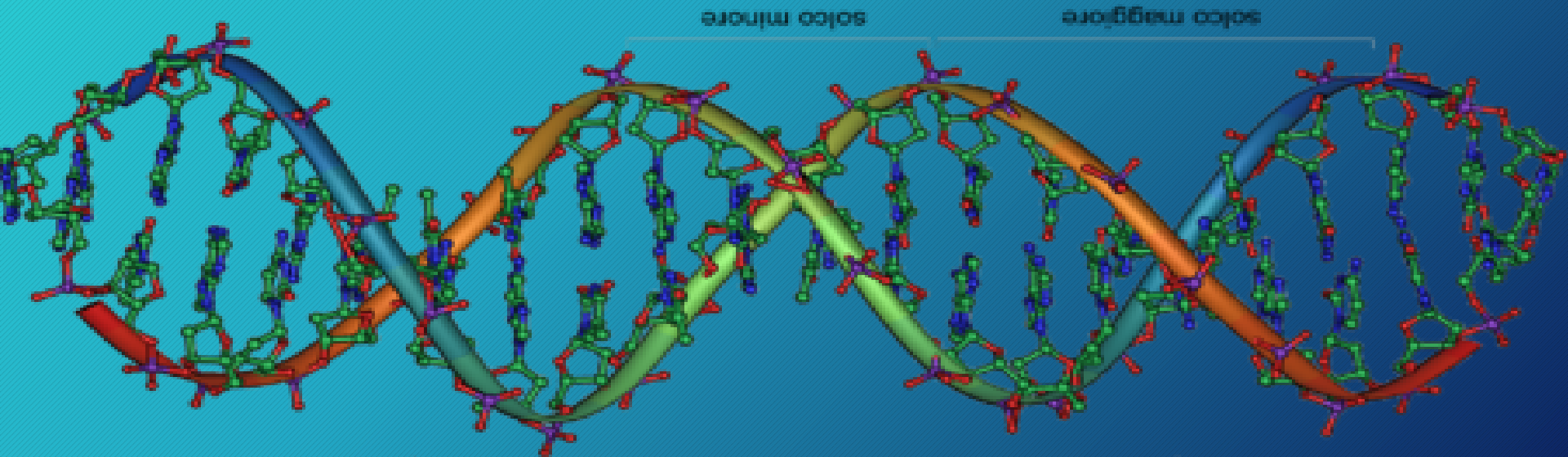
Blaustein, 2013 as cited in “Principal’s Research and Review”, Vol. 8, Issue 6, Nov 2013).

ACE Study, 1995-1997

Technology & Science

Health & Development

Shifted the conversation from “*What’s wrong with you?*” to “*What happened to you?*”



The Adverse Childhood Experiences (ACE) Study

- The ACE study has been called by the Centers for Disease Control the most significant public health study ever completed
- The American Academy of Pediatrics says it is the number one public health concern facing America today



The Adverse Childhood Experiences (ACE) Study

The **ACE** Study conducted in 1997 used data from over 17,000 adults who had health insurance through Kaiser Permanente, a large HMO.

The findings from this study suggest that certain childhood experiences, or traumas, are major risk factors for the leading causes of illness and death as well as a poor quality of life. Of the **17,000 participants**:

- **44 percent** reported suffering sexual, physical, or psychological abuse as children
- **12.5 percent** reported domestic violence in the home.

The Adverse Childhood Experiences (ACE) Study

- The participants in this study were mostly middle class people who were employed and had health insurance.
- This wasn't a group of people from a mental health clinic setting or a hospital setting

The participants were just like us

ACEs: Adverse Childhood Experiences

- The Original Study asked participants to indicate whether they had experienced 9 types of trauma during their childhood.
- Each type counted as 1 point

Adverse Childhood Experiences

1. Emotional Neglect
2. Emotional Abuse
3. Physical Neglect
4. Physical Abuse
5. Sexual Abuse
6. Parent Separation/Divorce
7. Household Substance Abuse
8. Household Mental Illness
9. Incarceration of Family Member



ACEs: Adverse Childhood Experiences

New Research indicates the following types of trauma are also considered ACEs

- Poverty – how many students in FCPS live in poverty?
- Social Isolation
- Community Violence – How many?
- Bullying
- Parental Verbal Aggression or Abuse – how many?

**One count
for each type**

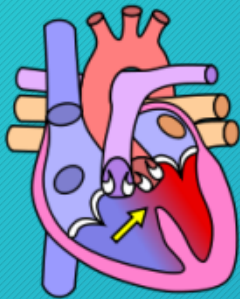
ACEs are Common

ACEs are common among the general population, and therefore, among our students

- 2/3 of the general population have 1 ACE
- 1 in 8 (12.5%) of the general population have experienced 4 or more ACEs
- How many students are in FCPS? 43,000
 - 43,000 divided by 8 = **5,375 students with 4 ACEs in FCPS**

ACEs Impact Adults *50 Years Later*

As ACE scores go up...



Cancer
Fractures
Diabetes
Liver disease
Lung disease
Heart disease

ACEs are common among general population

- 2/3 of the general population have 1
- 1 in 8 (12.5%) have experienced 4 or more



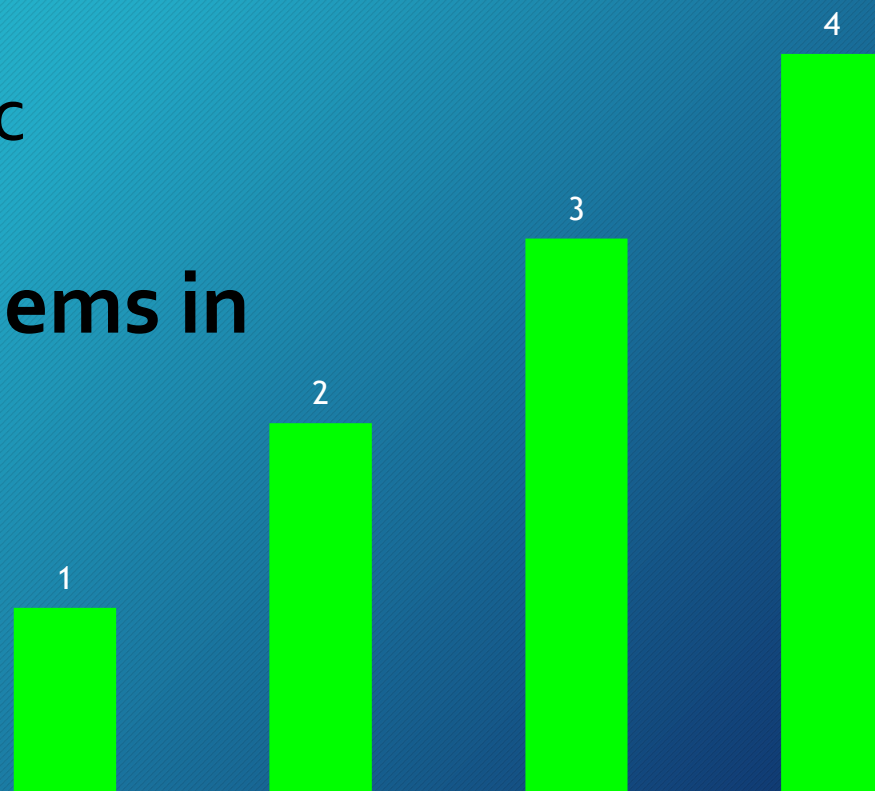
ACEs: A Dose-Response Relationship

4 ACEs lead to increased risk:

- 2x - Smoke
- 7x - Become an Alcoholic
- 10x - Inject Street Drugs
- **32x – Behavioral Problems in School**

Remember-

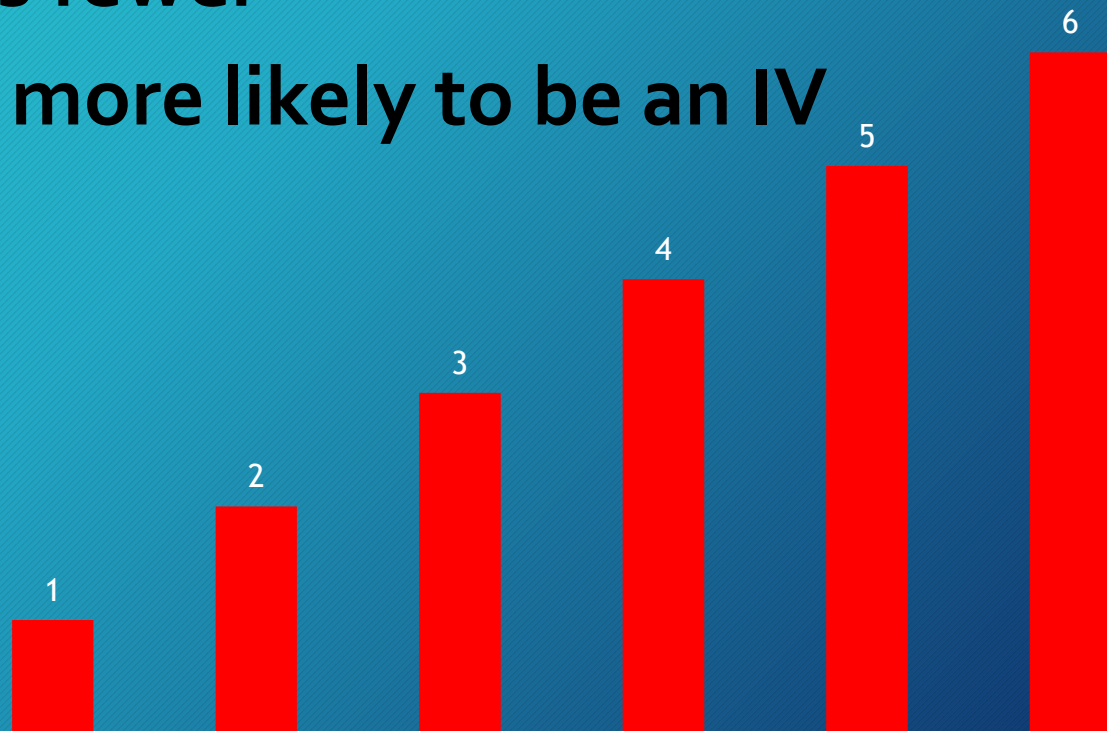
1 in 8 people have 4 ACEs



Lowered Life Expectancy

6 or more ACEs

- Live 20 years fewer
- Males: 46 x more likely to be an IV drug user





ACEs and Suicide

- ACEs in any category increase the likelihood of a suicide attempt by **2 to 5 times**
- Individuals with 6 or more ACEs are more than **24 times** more likely to attempt suicide




POLYVICTIMIZATION:

Exposure to one type of violence can double the risk of others. If a student experienced an assault in the past year, this is correlated with

- 2.7 x greater likelihood of sexual victimization
- 2.9 x greater likelihood of being abused or maltreated by a caregiver

ACEs Result in a Higher Prevalence of:

- Depression
- Anxiety
- Substance abuse
- Eating disorders
- Psychosis
- Personality disorders
- Diminished thinking abilities because the student goes into survival mode



The Predictive Value of Classic ACEs are not all Equally as Strong

- The toxic element in divorce is exposure to chronic parental conflict, more than the divorce itself
- Growing up in a violent community is harmful *independent of* family factors
- Bullying and peer victimization can sometimes have more toxic consequences than parental maltreatment
- Poverty is correlated with both physical and mental health challenges
 - **Living in poverty subjects children and adults to more hardship, violence, social stressors and noise. Children become biologically primed for more difficulties in life**



What is Trauma?

Trauma is an **inescapable** stressful event that **overwhelms** an individuals' coping mechanisms and **triggers** the **fear response** system in our brains and bodies

Survival Mode

When students are in **survival mode**

- Their Limbic system has taken over and **fear** and **anger** become the focus
- Limbic system structures, including the Amygdala, are involved in many of our emotions and motivations, particularly those that are related to **survival**
- When the Limbic system is in charge, higher order Brain Functions from the frontal lobe and hippocampus required for learning and thinking are temporarily **shut down**

When Students are in Survival Mode....

- Trouble focusing on small tasks. The brain is directed to focus only on determining where threat is coming from
- Students in survival mode are **unavailable** to learn and have serious difficulty following directions and **listening to adults**

The Impact of Trauma is More Global on Children than Adults

Toxic stress from significant and prolonged trauma elicits a persistent fear response and overwhelms the brain and body's ability to cope.

Students stay in survival mode – primed for danger.





Wired for Fear and Anger

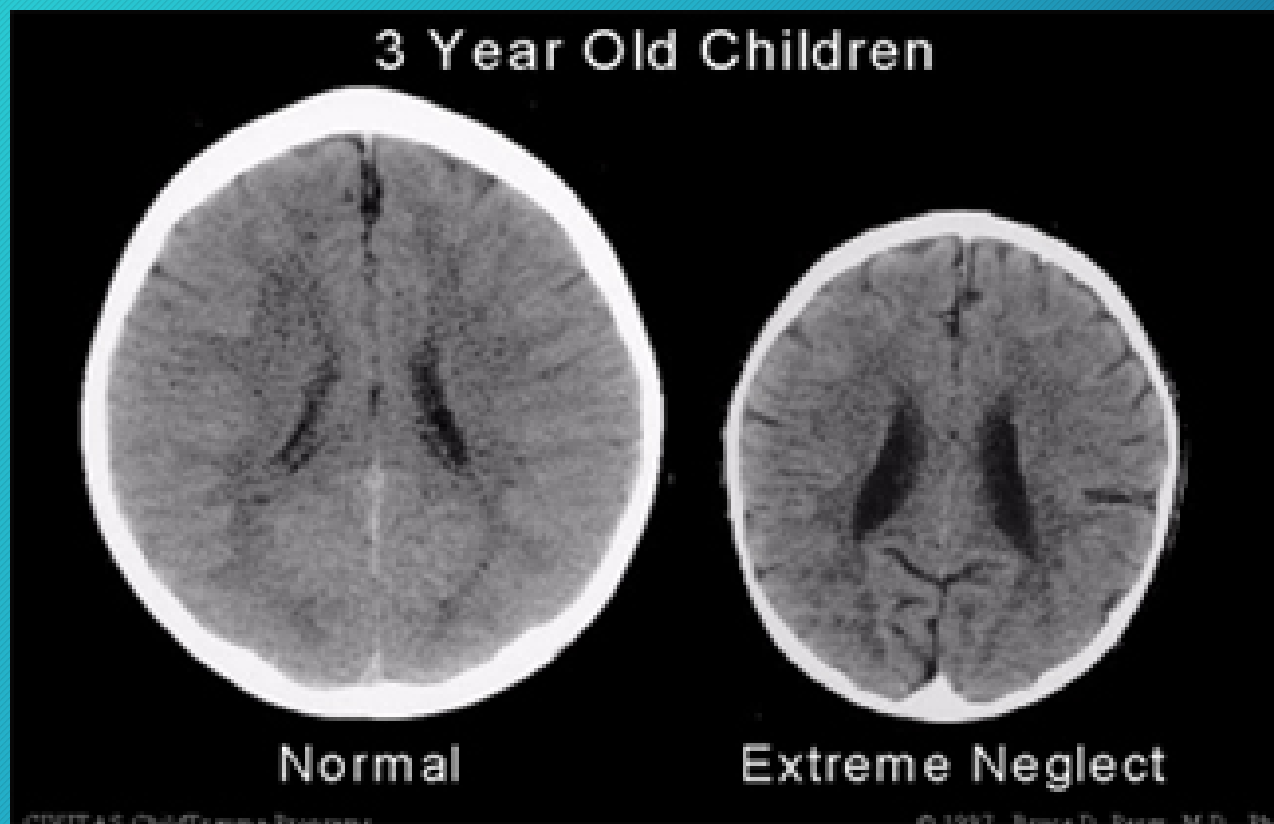


“Following abuse and neglect, the world is experienced with a different nervous system.” —Bessel van der Kolk

You can't talk to an amygdala



Toxic Stress Reduces Brain Volume by as Much as 20%



Classroom Behavior is Ruled by the Stress Response System

Physiological states outside the child's control are provoked by perceived stressors

Trauma Responsive
Educational Practices Project,
University of Chicago
<http://www.trepeducator.org>

- Hyper-arousal
- Hypo-arousal



Fluctuations in response (low-stress vs high-stress days) can be hard for both the child and the teacher to understand.

Type and Timing of Adversity Matters

Nurturance at age 4 predicts brain volume at age 14

Maternal stress in infancy changed genetic expression & showed up at age 15 in behavioral problems



Types of Maltreatment: Family Violence

Witnessing violence toward siblings

- Comparable to the effect sizes of experiencing sexual abuse
- Negative effects are far greater than witnessing violence toward mothers or fathers

Parental verbal aggression

- Changes white matter pathways related to language processing = lowered verbal IQ
- Psychiatric effects comparable to sexual abuse



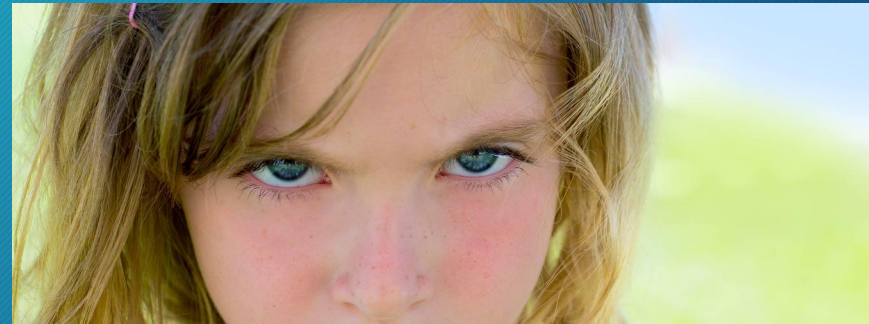
Signs of Developmental Trauma/ACEs

**Emotional
Dysregulation**



**Reduced ability
to control
Impulses**

**Disrupted
Attachment to
adults and peers**



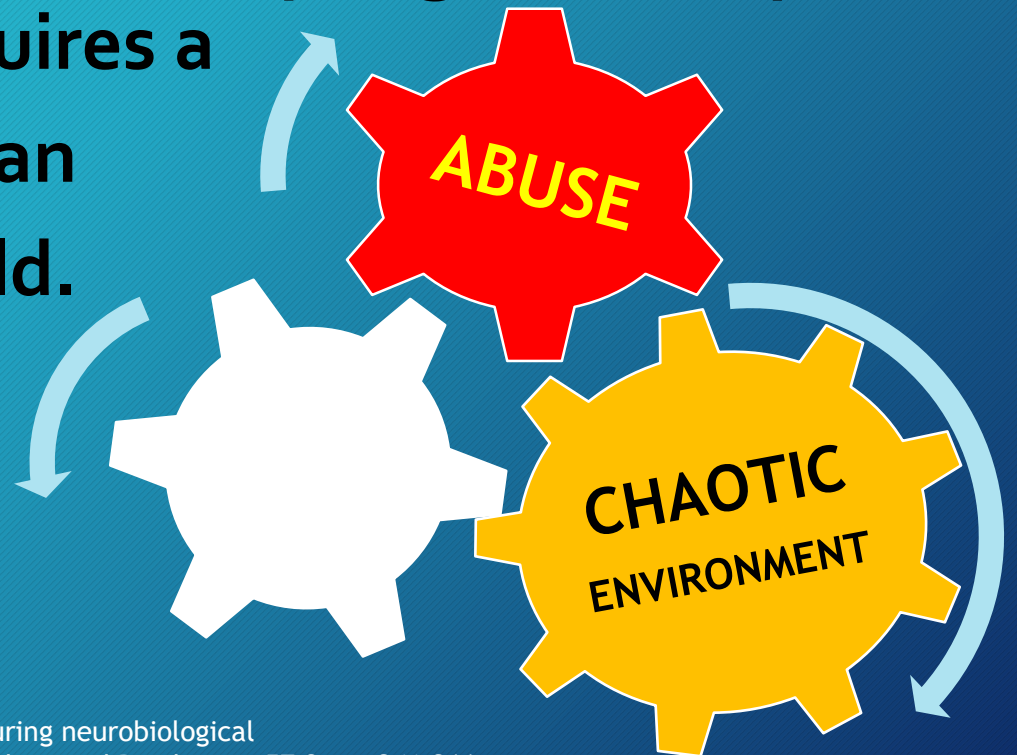
Overwhelming Emotions from the Survival Brain Trumps Rational Thought

Reactions can include

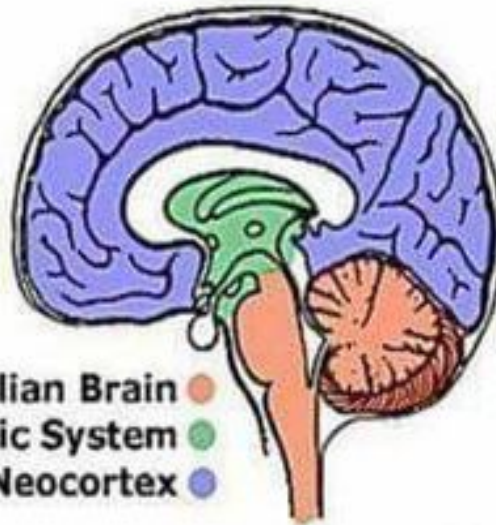
- Extreme helplessness
- Confusion
- Withdrawal
- Rage
- Self-soothing repetitive behavior

The Brain is an Organ of Adaptation

It modifies itself to survive based on what it experiences in childhood. Adapting to a scary and abusive world requires a different responses than adapting to a just world.

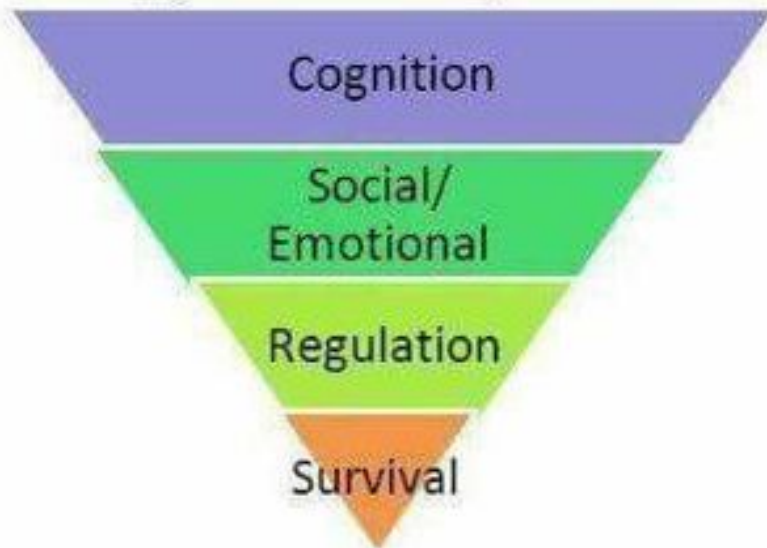


Trauma & Brain Development



Reptilian Brain ●
Limbic System ●
Neocortex ●

Typical Development



Developmental Trauma



We Need to Change How We Respond

Students with a significant trauma history are clinically, neurobiologically, and genetically distinct from non-abused individuals.



We must stop emphasizing behavioral control over the restoration of underlying brain abnormalities.

Look for the Goldfish Under the Shark

- Behaviors may look like a shark, but under the surface, they're scared goldfish trying to get their needs met
- Behaviors often communicate anger and hostility but are instead responses to fear and pain



Shift Our Perspective

Shift thinking from
What is wrong with you?
to

What has happened to you?



Shift Our Perspective

When we believe students have complete **control** over their **negative behavior**, we tend to be **angry and punish** them, but when we **believe** that their negative behavior is the result of underlying **trauma** and resulting brain changes, we tend to **want to help** them.

Challenging Behavior is Often About Something Else



- Investigate the underlying source of behavior
- Respect students' dignity and provide
 - **Private conversations**
 - **Neutral requests & redirections**
 - **Kindness**
- ***Q-TIP – Quit Taking it Personally***



Relationships are Key

Most Discipline Referrals:

- Defiance
- Disrespect
- Uncooperative Behavior



Relational discipline:

- reduces power struggles
- increases engagement
- optimizes instructional time

Kindness = Oxytocin: The Feel Good Hormone

- Oxytocin plays a role in **social bonding** & it makes us feel **warmth and connected** to others
- A rise in oxytocin in our blood reduces heart rate and blood pressure
- A lowered heart rate and blood pressure leads to **lowered anxiety**
- When blood pressure is reduced, it can have positive effects on our well-being and engender **feelings of trust** in others

Acts of Kindness Change Neurobiology- Calming Brains and Bodies

- You can't talk to an Amygdala
- Kindness = Oxytocin = lowered cortisol = ability to think
- Quiet space, quiet words, kind regard
- Provide time for students to calm – approx. 20 min.
Then calmly discuss what the student did

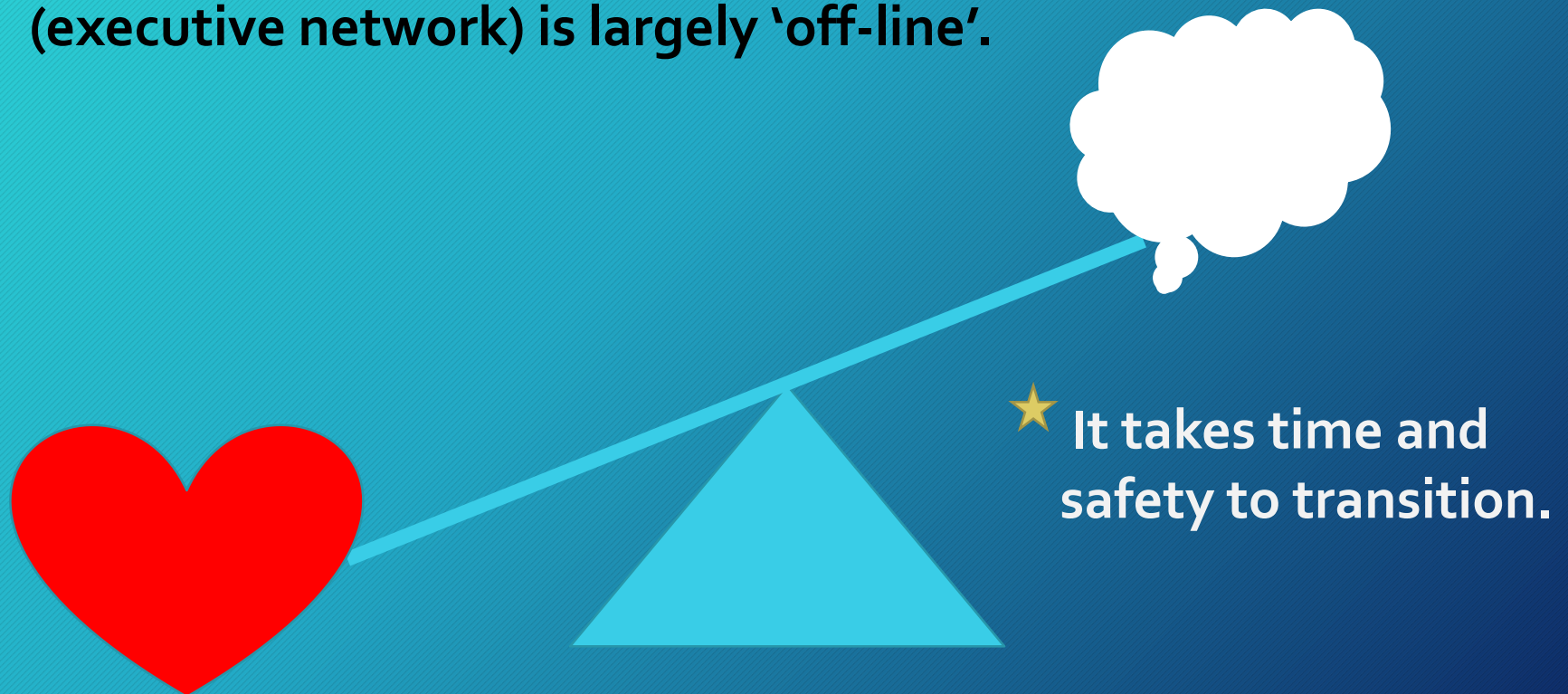
Retrieved from <https://www.theatlantic.com/education/archive/2016/07/teaching-traumatized-kids/490214/> authors James Redford and Karen Pritzker

safety • predicability • empathy

One system at a time . . .



When the 'emotion brain' (autobiographical network) is highly activated, the 'front brain' (executive network) is largely 'off-line'.



Factors Affecting the Outcomes of Trauma

The influences of trauma are impacted by the environment- **a caring, supportive, and sensitive environment can support resilient outcomes,** whereas an unsupportive and unstable environment can exacerbate or increase the effects of trauma.

Factors Affecting the Outcomes of Trauma

- There is no more effective neurobiological intervention than a safe relationship. It is crystal clear that **relationships** are the **counterpoint to traumatic stress** in childhood. Dr. Bruce Perry
- The magic of **"YET"**
- **5 positive** comments to **1 correction**
- Kindness = Oxytocin, the feel good hormone

What Can We Do?

- Listen
- Consistent routine
- Clear expectations
- Consistent feedback
 - More positive
 - Tell them what they did well
 - Thank them
- Acknowledge their emotions
- Tell them they are safe
- QTIP
- Give them choices
- Be kind
- Take care of yourself
- Teach Social Emotional Learning - SEL

Care for the Support Staff

Care taking takes energy; the more we care the more energy we expend

- Implement relaxation and mindfulness practices
- Yoga
- Exercise
- Deep belly breathing - Elmo
- Correct negative self talk & use positive self-talk
- Be Kind
- FCPS Employee Assistance Program - 800.327.2251

School Engagement and Success

Is among the most predictive variables of adult healthy outcomes. Let's all work together to support some of our most vulnerable students.



What we can predict, we can prevent.



Safety and security don't just happen. They are the result of collective consensus and public investment. We owe our children, the most vulnerable citizens in our society, a life free of violence and fear."

--Nelson Mandela

Clear Vision Common Goal Collective Impact

Community Agencies

- **Heartly House: 301-662-8800**
- **FCPS Homeless Coordinator: 301-644-5290**
- **National Alliance on Mental Illness: 240-379-6186**
- **Hospice: 240-566-3030**
- **Child Advocacy Center: 301-600-1758**
- **Children of Incarcerated Parents: 301-471-1459**
- **Mental Health Association, Walk In Clinic: 301-663-0011**
- **211**

What can you do to help?



Thank you!

Thank you for the hard work you do everyday to care for the students, staff & families in FCPS!



Resources: Research

- cdc.gov/violenceprevention/acestudy
- Children's Exposure to Violence, Crime, and Abuse: An update. OJJDP Juvenile Justice Bulletin, September 2015. Retrieved from <https://www.ojjdp.gov/pubs/248547.pdf>
- Creating Trauma Informed Provider Organizations, Georgetown University Center for Child and Human Development, retrieved from http://gucchdtacenter.georgetown.edu/data/issues/2015/0215_article.html
- E. Puterman, A. Gemmill, D. Karasek, D. Weir, N. Adler, A. Prather, & E. Epel. Published online October 3, 2016. Lifespan adversity and later adulthood telomere length in the nationally representative US Health and Retirement Study. www.pnas.org/cgi/doi/10.1073/pnas.1525602113
- Centers for Disease Control. Carrion, Victor (2014)
- Felitti, et al. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. American Journal of Preventive Medicine.
- Finkelhor, D. Recent Findings from the National Surveys of Children's Exposure to Violence. Lecture January 27th, 2016
- heckmanequation.org
- Lifetime Effects: The High/Scope Perry Preschool Study Through Age 40 (pp. 194–215), by Lawrence J. Schweinhart, Jeanne Montie, Zongping Xiang, W. Steven Barnett, Clive R. Belfield, & Milagros Nores, 2005, Ypsilanti, MI: High/Scope Press. © 2005 by High/Scope® Educational Research Foundation.
- Luthar & Brown, 2007 as cited in Panter-Brick and Leckman, 2013. Resilience in child development—interconnected pathways to wellbeing. Journal of Child Psychology and Psychiatry, 54:4 pp333 – 336.
- National Scientific Council on the Developing Child (2010). Early Experiences Can Alter Gene Expression and Affect Long-Term Development: Working Paper No. 10. <http://www.developingchild.net>
- Polcari, A, Rabi, K, Bolger, E, and Teicher, M. (2014). Parental verbal affection and verbal aggression in childhood differentially influence psychiatric symptoms and wellbeing in young adulthood. International Journal of Child Abuse & Neglect 38(2014) 21 – 102
- [Samhsa.gov/capt/practicing-effective-prevention/prevention-behavioral-health/adverse-childhood-experiences](http://samhsa.gov/capt/practicing-effective-prevention/prevention-behavioral-health/adverse-childhood-experiences)
- Shonkoff, J. & Garner, A. The Lifelong Effects of Early Childhood Adversity and Toxic Stress. PEDIATRICS (2012)
- Teicher, M. & Samson, J. (2016). Annual Research Review: Enduring neurobiological effects of childhood abuse and neglect. Journal of Child Psychology and Psychiatry, 57:3, pp 241-266
- Teicher, M., and Vitaliano, G. (2011). Witnessing violence toward siblings; an understudied but potent form of early adversity. PLoS ONE 6(12): e28852.
- Teicher, M. 25th Annual International Trauma Conference, Boston MA, 2014
- theatlantic.com/education/archive/2016/07/teaching-traumatized-kids/490214/ authors James Redford and Karen Pritzker
- Van der Kolk, B. (2016). Commentary: The devastating effects of ignoring child maltreatment in psychiatry – a commentary on Teicher and Samson 2016. The Journal of Child Psychology and Psychiatry 57:3, pp 267-270

Resources: URLs

- acestoohigh.com
- ACEs networks: <http://www.acesconnection.com/>
- American Academy of Pediatrics: <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/resilience/Pages/ACEs-and-Toxic-Stress.aspx>
- CANarratives.org
- Centers for Disease Control: <https://www.cdc.gov/violenceprevention/acestudy/>
- National Child Traumatic Stress Network: <http://www.nctsn.org/>
- Take the survey: <http://www.npr.org/sections/health-shots/2015/03/02/387007941/take-the-ace-quiz-and-learn-what-it-does-and-doesnt-mean>
- TED TALK:
https://www.ted.com/talks/nadine_burke_harris_how_childhood_trauma_affects_health_across_a_lifetime
- Trauma Responsive Educational Practices:
<http://www.trepeducator.org/>