



CITY OF SAN ANTONIO
METROPOLITAN HEALTH DISTRICT

10 Things to Know about Adverse Childhood Experiences (ACEs)

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DSHS Grand Rounds

October 9, 2018

How Brains are Built



<https://www.youtube.com/watch?v=LmVWOe1ky8s>

10 Things to Know about ACEs

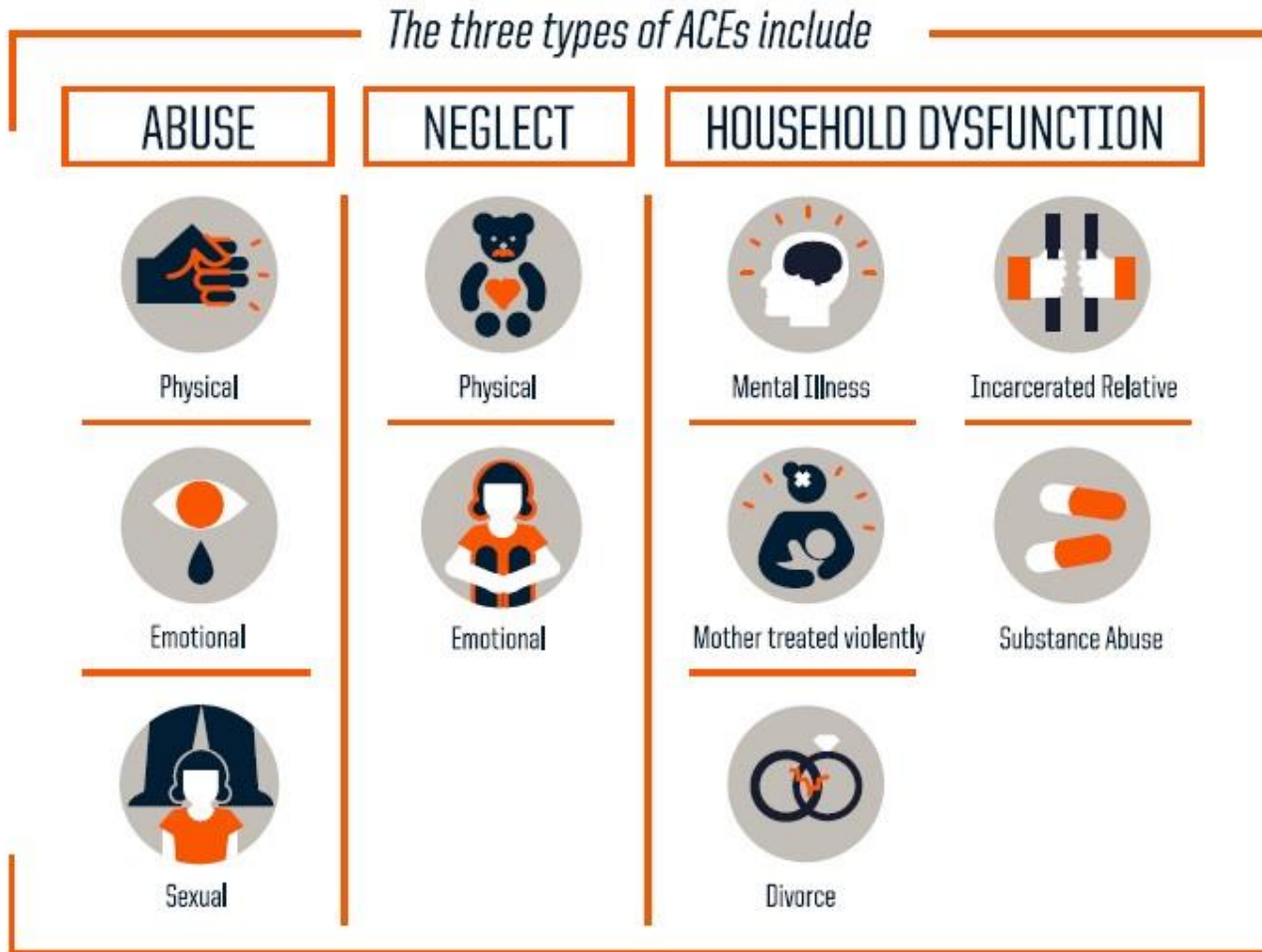
THE TRUTH ABOUT ACEs

WHAT ARE THEY?

ACEs are
ADVERSE
CHILDHOOD
EXPERIENCES

Graphic: Robert Wood Johnson
Foundation, rwjf.org/aces

1. Scored with a 10-question quiz



Graphic: Robert Wood Johnson Foundation, rwjf.org/aces

ACE Questionnaire

While growing up, during your first 18 years of life:

1. Did a parent or other adult in the household **often**
 - Swear at you, insult you, put you down, or humiliate you? Or
 - Act in a way that made you afraid that you might be physically hurt?
2. Did a parent or other adult in the household **often**
 - Push, grab, slap, or throw something at you? Or
 - Ever hit you so hard that you had marks or were injured?
3. Did an adult or person at least 5 years older than you **ever**
 - Touch or fondle you or have you touch their body in a sexual way? Or
 - Try to or actually have oral, anal, or vaginal sex with you?
4. Did you **often** feel that
 - No one in your family loved you or thought you were important or special?
Or
 - Your family didn't look out for each other, feel close to each other, or support each other?

Continued

5. Did you **often** feel that
 - You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? Or
 - Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
6. Were your parents **ever** separated or divorced?
7. Was your mother or stepmother:
 - **Often** pushed, grabbed, slapped, or had something thrown at her, **or**
 - **Sometimes or often** kicked, bitten, hit with a fist, or hit with something hard, or
 - **Ever** repeatedly hit over at least a few minutes or threatened with a gun or knife?
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
9. Was a household member depressed or mentally ill or did a household member attempt suicide
10. Did a household member go to prison?

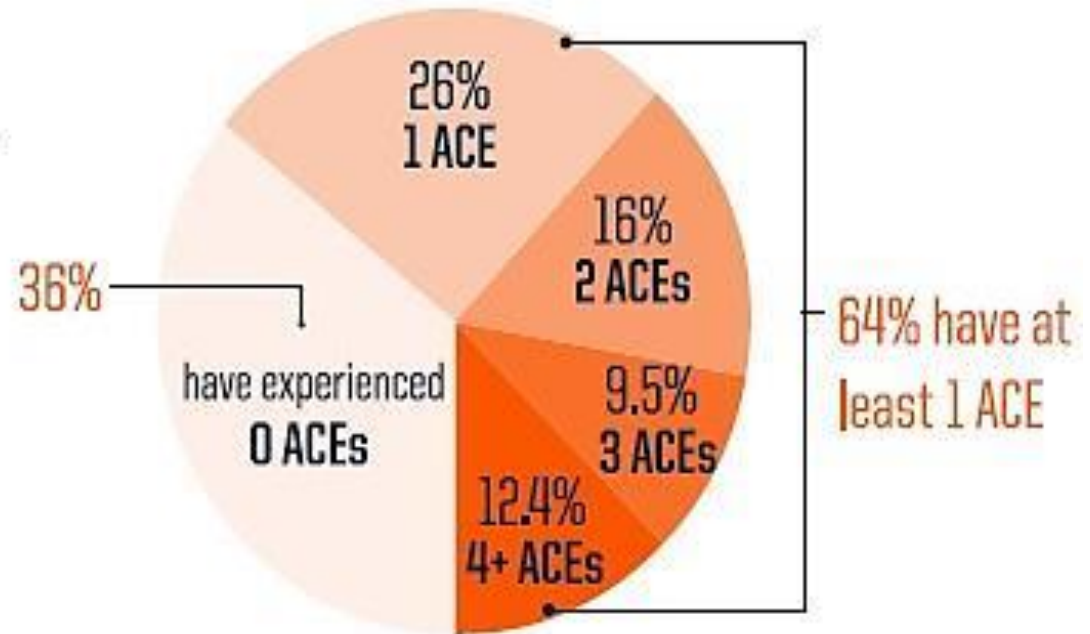
Finding your ACE Score

- Add up the number of times you answered, “yes” during the 10-question quiz

This is your ACE Score!
(0-10)

2. ACEs are common

*Of 17,000 ACE
study participants:*



Graphic: Robert Wood Johnson Foundation, rwjf.org/aces

3. ACEs cause toxic stress

Positive Stress

(ex. getting a shot)
Brief. Part of healthy development.



Tolerable Stress

(ex. death in family)
More severe.
Buffered by adult support



Toxic Stress

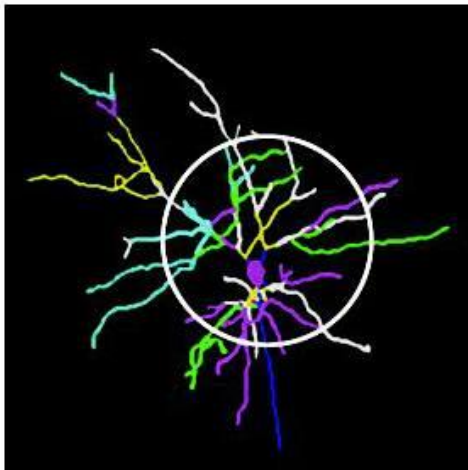
(ex. chronic neglect)
Strong, frequent and/or prolonged adversity, without enough adult support



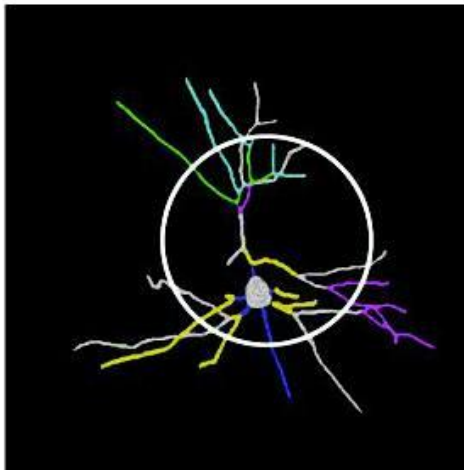
Graphic: kaboom.org

4. Toxic stress harms brain architecture

- Children’s brains that are constantly bathed in “fight or flight” hormones start to wire differently
- Neutral facial expressions may be interpreted as threatening
- Fewer connections grow in “reasoning” section of brain
- Weaker impulse control, shorter attention spans



Typical neuron:
many connections



Neuron damaged by toxic stress:
fewer connections

Image: Orion Children International

5. ...and the rest of the body too

- Chronic stress sends white blood cells into overdrive (chronic inflammation)
- Common unhealthy responses to toxic stress: smoking and alcohol abuse

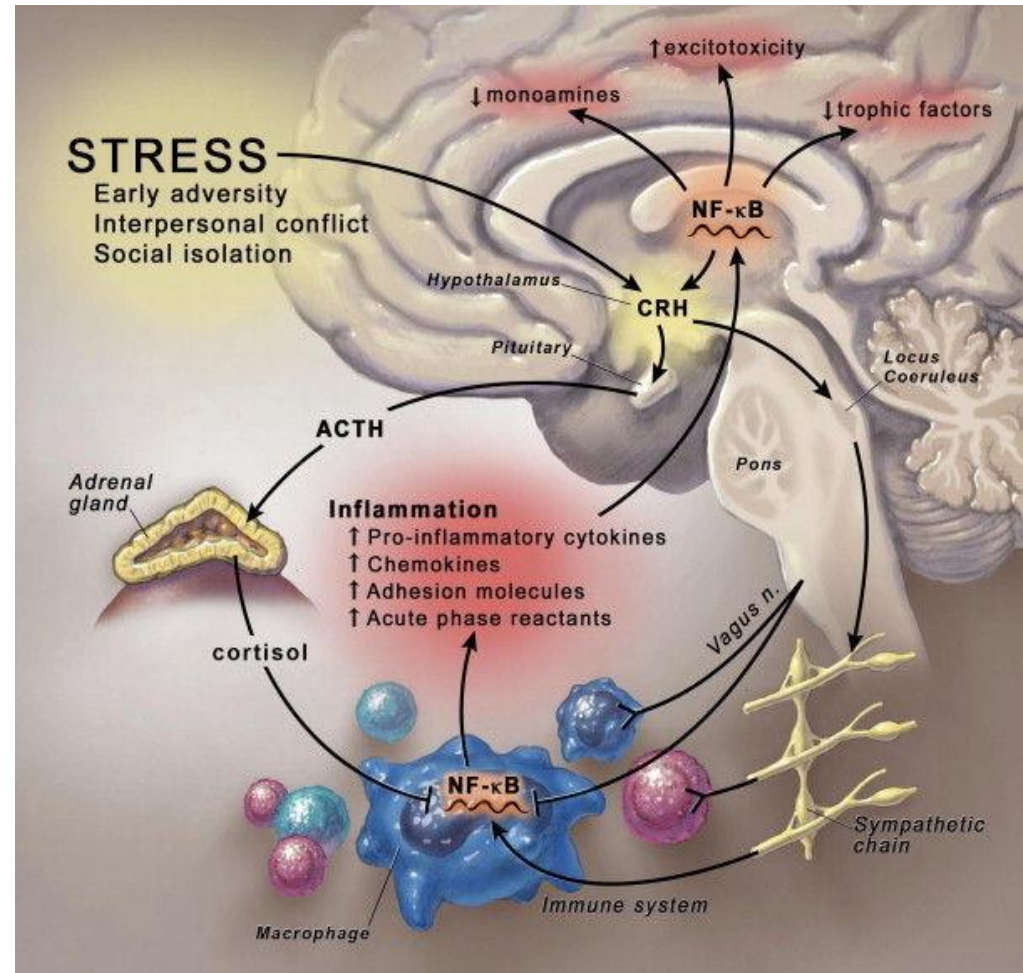


Image: Miller et al., *Biol Psychiatry* 2009;65:734

6. This has broad impacts

ACES can have lasting effects on....



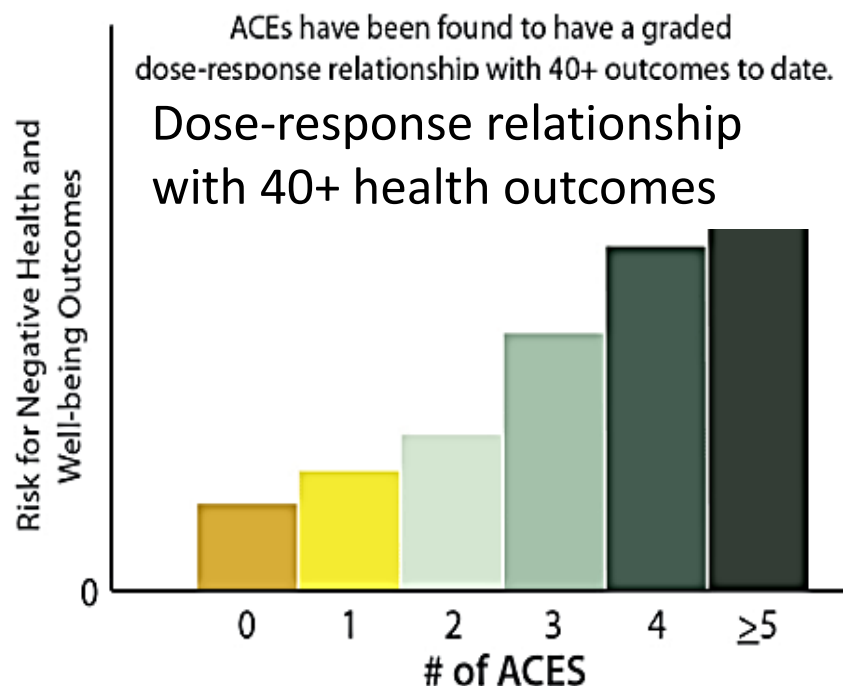
Health (obesity, diabetes, depression, suicide attempts, STDs, heart disease, cancer, stroke, COPD, broken bones)



Behaviors (smoking, alcoholism, drug use)



Life Potential (graduation rates, academic achievement, lost time from work)



Graphic: Centers for Disease Control and Prevention

ACEs dramatically increase risk for 7 out of 10 leading causes of death

| | Leading Cause of Death | Odds Ratio |
|----|------------------------------------|------------|
| 1 | Heart disease | 2.2 |
| 2 | Cancer | 1.9 |
| 3 | Chronic lower respiratory diseases | 3.9 |
| 4 | Accident | |
| 5 | Stroke | 2.4 |
| 6 | Alzheimer's | 4.2 |
| 7 | Diabetes | |
| 8 | Influenza and Pneumonia | |
| 9 | Kidney disease | |
| 10 | Suicide | 12.2 |

Odds Ratios associated with 4 ACEs (CDC 2015, Felitti 1998)
Data: Nadine Burke Harris/Center for Youth Wellness

ACEs dramatically increase risk for 7 out of 10 leading causes of death

| | Leading Cause of Death | Odds Ratio |
|---|------------------------|------------|
| 1 | Heart disease | 2.2 |
| 2 | Cancer | 1.9 |

Without intervention, there can be a 20-year difference in life expectancy

| | | |
|----|-------------------------|------|
| 7 | Diabetes | |
| 8 | Influenza and Pneumonia | |
| 9 | Kidney disease | |
| 10 | Suicide | 12.2 |

Data: Nadine Burke Harris/Center for Youth Wellness

Trauma is common among adults and children in social service systems.

98%

of **female offenders** have **experienced trauma**, often interpersonal trauma and domestic violence



96%

of adolescent psychiatric inpatients have histories of **exposure to trauma**



93%

of **homeless mothers** have a **lifetime history of interpersonal trauma**



90%

of **juvenile justice-involved youth** have experienced trauma, often **multiple traumas from an early age**



75%

of **adults in substance abuse treatment** report histories of trauma



70%

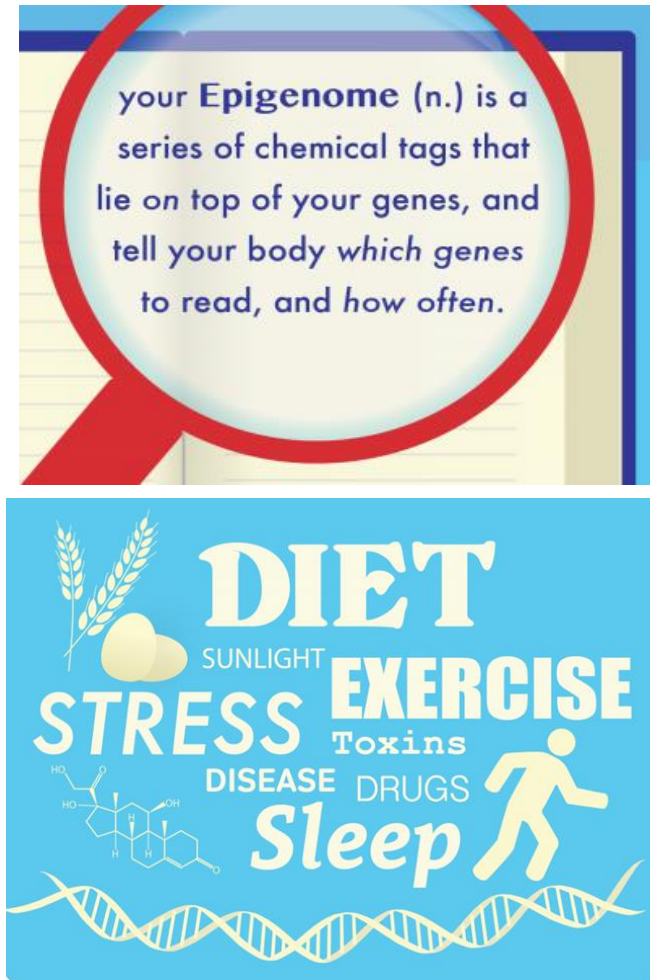
of **children in foster care** have experienced **multiple traumas**



Graphic: American Institutes for Research, air.org

7. Effects may last generations

- Trauma changes our cells on a deep level (the *epigenome*)
- So do diet, exercise, lack of sleep, more
- Epigenes affect how likely we are to suffer some illnesses
- Can epigenetic changes from trauma be passed on to children and grandchildren? Stay tuned



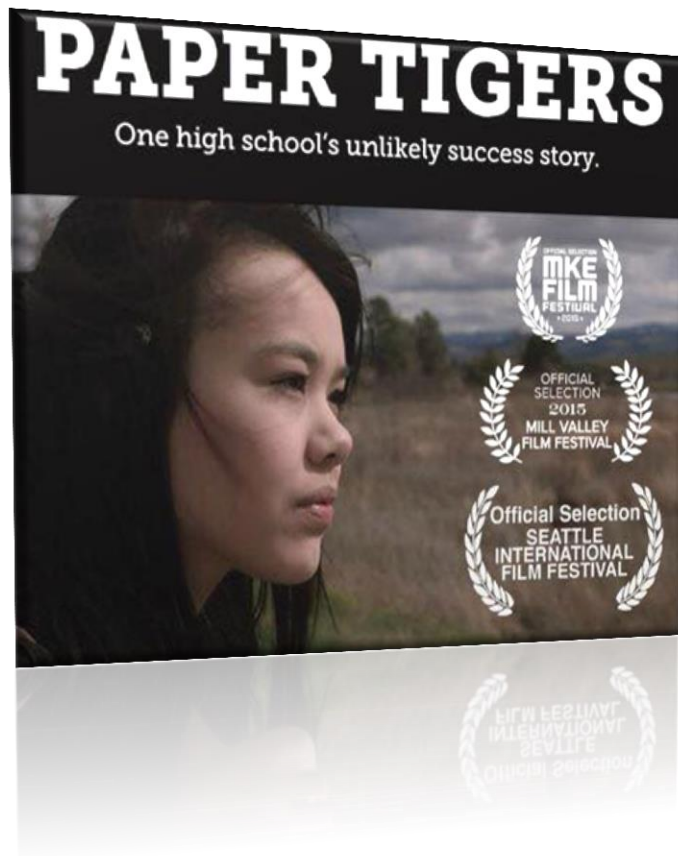
Graphics: geneticalliance.org

8. We can overcome high ACEs

- **Good news:** Trauma-induced changes (including epigenetic changes) are reversible
- The brain is plastic, and the body wants to heal

*Trauma-informed care shifts the focus from:
**‘What’s wrong with you?’ to
‘What happened to you?’***

Case Study: Walla Walla, WA



After four years of a trauma-informed approach at Lincoln High School:

- Suspensions dropped 90%
- Zero expulsions
- Grades and graduation rates surged

Regardless of ACE score,
teens with **resilience** thrived

9. How to create resilience

- Reducing adversity
- Safe, stable and nurturing relationships and environments
- Sleep
- Exercise
- Nutrition
- Mindfulness
- Mental health



Photo: Thinkstock

10. How communities can help

- Raise awareness about ACEs
- If you work with children, screen for ACEs
 - Early detection allows prompt intervention
- Reduce adversity and support caretakers
 - Home visiting programs
 - Mental healthcare
 - Two-generation interventions
 - Social work
- Create safe and connected communities

Resources

- [VetoViolence.cdc.gov](https://www.vetoviolence.cdc.gov)
- [AcesTooHigh.com](https://www.aces-too-high.com)
- [CommunityResilienceCookbook.org](https://www.communityresiliencecookbook.org)
- Mobile-friendly [ACE quiz](#) on NPR.org website

Thank you!



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