ADVERSE CHILDHOOD EXPEREINCES (ACE)

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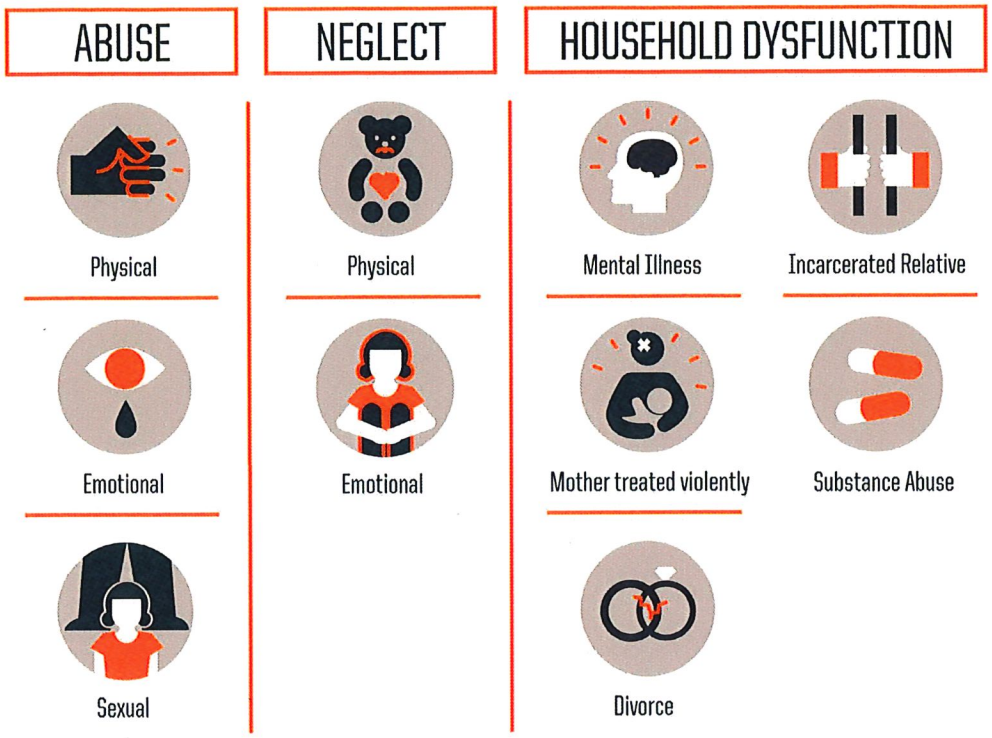
ADVERSE CHILDHOOD EXPERIENCES

- ACEs are adverse childhood experiences that harm children's developing brains and lead to changing how they respond to stress and damaging their immune systems so profoundly that the effects show up decades later.
- ACEs cause much of our burden of chronic disease, most mental illness, and are at the root of most violence.
- "ACEs" comes from the CDC-Kaiser Adverse Childhood Experiences Study, a groundbreaking public health study that discovered that childhood trauma leads to the adult onset of chronic diseases, depression and other mental illness, violence and being a victim of violence, as well as financial and social problems.
- The ACE Study has published about 70 research papers since 1998. Hundreds of additional research papers based on the ACE Study have also been published.
- The ACE Study included only those 10 childhood traumas because those were mentioned as most common by a group of about 300 Kaiser members; those traumas were also well studied individually in the research literature.


ABUSE
NEGLECT
HOUSEHOLD DYSFUNCTION
Physical
Emotional
Sexual
Physical
Emotional
Mental Illness
Incarcerated Relative
Mother treated violently
Substance Abuse
Divorce

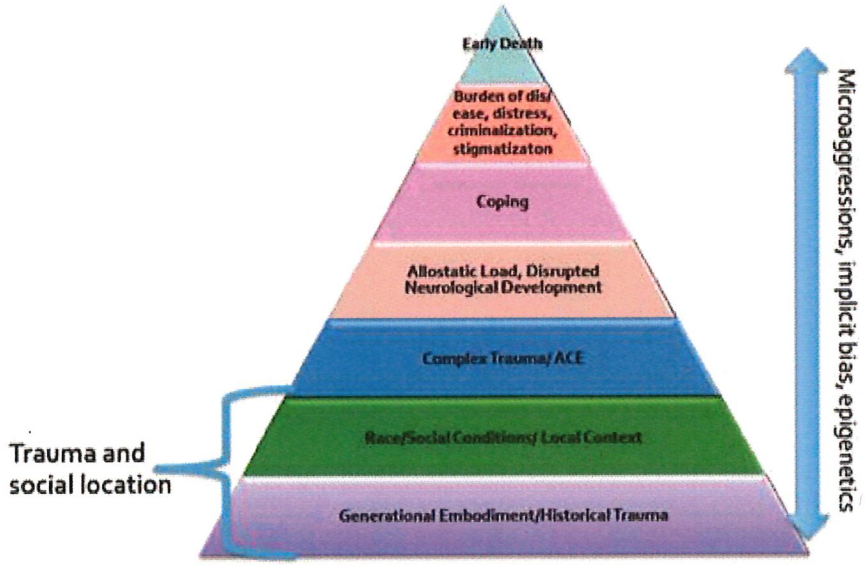

Death
Whole Life Perspective
Conception
Early Death
Disease, Disability, and Social Problems
Adoption of Health-risk Behaviors
Social, Emotional, & Cognitive Impairment
Adverse Childhood Experiences
Scientific Gaps

- Did a parent or other adult in the household often or very 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?
- Did a parent or other adult in the household often or very often… Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured?
- 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 Attempt or actually have oral, anal, or vaginal intercourse with you?
- Did you often or very 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?
- Did you often or very 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?
- Were your parents ever separated or divorced?
- Was your mother or stepmother:
- Often or very often pushed, grabbed, slapped, or had something thrown at her? or Sometimes, often, or very 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?
- Did you live with anyone who was a problem drinker or alcoholic, or who used street drugs?
- Was a household member depressed or mentally ill, or did a household member attempt suicide? Did a household member go to prison?

EXPANDED TYPES OF ACE'S

- Racism
- Gender discrimination
- Witnessing a sibling being abused
- Witnessing violence outside the home
- Witnessing a father being abused by a mother
- Being bullied by a peer or adult
- Involvement with the foster care system
- Living in a war zone, living in an unsafe neighborhood
- Losing a family member to deportation, etc.
- ACEs fall into three large categories:
  - Adverse childhood experiences
  - Adverse community experiences
  - Adverse climate experiences

Extended ACEs Pyramid



*http://www.cdc.gov/violenceprevention/acestudy/pyramid.html

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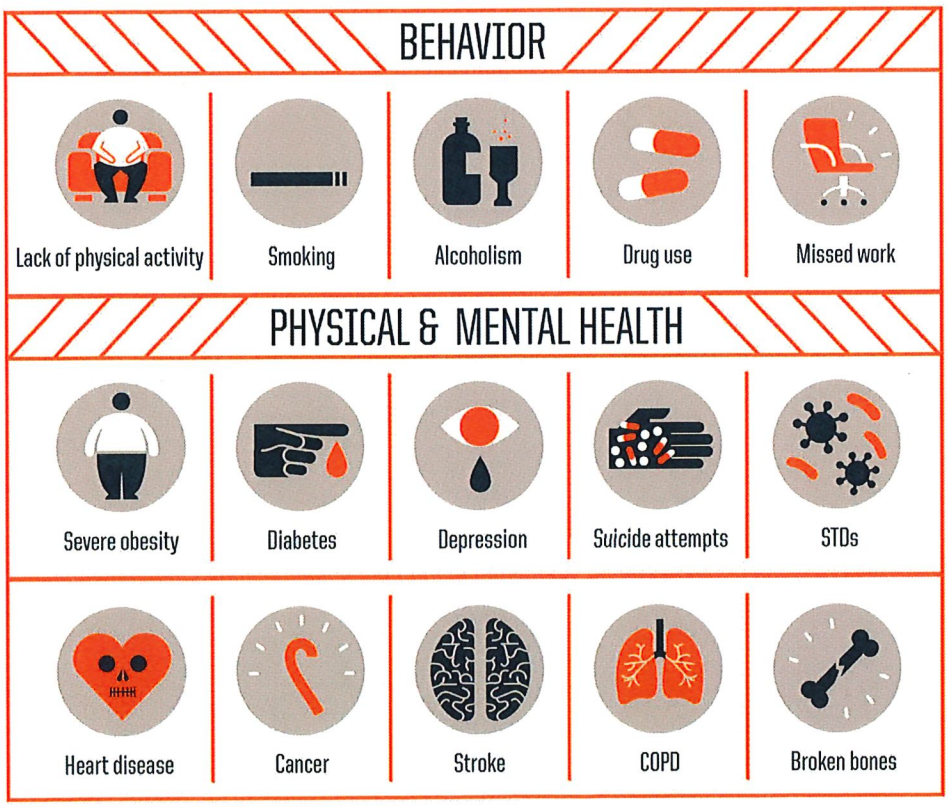
ACE STUDY REVEALED 6 MAIN DISCOVERIES

- ACEs are common…nearly two-thirds (64%) of adults have at least one.
- Cause adult onset of chronic disease such as;
  - cancer
  - heart disease
  - mental illness
  - violence and being a victim of violence
- ACEs don't occur alone….if you have one, there's an 87% chance that you have two or more.
- ACEs are responsible for a big chunk of;
  - workplace absenteeism
  - costs in health care
  - emergency response
  - mental health
  - criminal justice
  - ACE Study is that childhood adversity contributes to most of our major chronic health, mental health, economic health and social health issues.
- On a population level, it doesn't matter which four ACEs a person has; the harmful consequences are the same. The brain cannot distinguish one type of toxic stress from another; it's all toxic stress, with the same impact.

6 MAIN DISCOVERERS

- The more ACEs you have, the greater the risk for chronic disease, mental illness, violence and being a victim of violence.
- An ACE score of 0 to 10. Each type of trauma counts as one, no matter how many times it occurs.
  - ACE score of 4 are twice as likely to be smokers
  - Seven times more likely to be alcoholic.
  - Increases the risk of emphysema or chronic bronchitis by nearly 400 percent
  - Increases suicide attempt by 1200 percent.
  - People with high ACE scores are more likely to be:
    - violent
    - more marriages
    - broken bones
    - drug prescriptions
    - depression
    - autoimmune diseases.
  - ACE score of 6 or higher are at risk of their lifespan being shortened by 20 years.



ADHD AND ACES

- When compared to children without ADHD, children with parent-reported ADHD had a significantly higher prevalence of ACE scores of 2 (15% versus 12%), 3 (12% versus 6%), and 4 or more (18% versus 7%), and also had a higher prevalence of each type of ACE.
- After adjusting for a child's sociodemographic categories, there were statistically significant associations between parent-report of ADHD and the following specific types of ACEs: socioeconomic hardship, parent/ guardian divorce, familial mental illness, neighborhood violence, and familial incarceration.
- Children with ACE scores of 4 or more had nearly 4 times the odds of having parent-reported ADHD, compared with children with no ACEs.
- Children with socioeconomic hardship or parental mental illness had a significantly higher odds of having parent-rated moderate to severe ADHD, rather than mild ADHD.
- Only 4 percent of pediatricians in the U.S. are screening for toxic stress. Most haven't received any training on how to identify kids who are at risk.

ACE SCIENCE

- ACE study is 1 of 5 parts of the ACE's science:
  - Includes how toxic stress from ACEs damage children's developing brains
  - How toxic stress from ACEs cause chronic diseases
  - How it can affect our genes and be passed from one generation to another (epigenetics)
  - Resilience research shows that the brain is plastic, and the body wants to heal

TOXIC STRESS

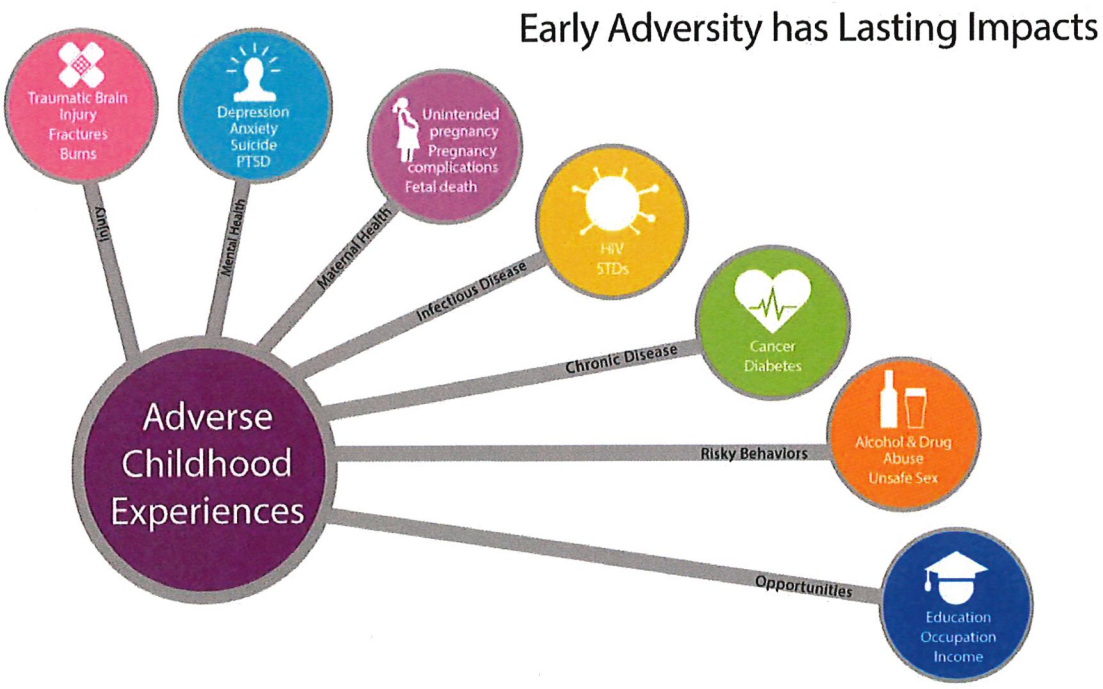
- Brain science shows that, in the absence of protective factors, toxic stress damages children's developing brains.
- Stress is the body's normal response to challenging events or environments.
- Positive stress — the first day of school, a big exam, a sports challenge — is part of growing up, and parents or caregivers help children prepare for and learn how to handle positive stress, which is moderate and doesn't last long. It increases heart rate and the amount of stress hormones in the body, but they return to normal levels quickly.
- But when events or the environment are threatening or harmful – we stumble across a bear in the woods – our brains instantly zap into fight, flight or freeze mode and bypass our thinking brains, which can be way too analytical to save us.
- Too much stress – toxic stress – occurs when that raging bear comes home from the bar every night, says pediatrician Nadine Burke Harris. Then a child's brain and body will produce an overload of stress hormones — such as cortisol and adrenaline — that harm the function and structure of the brain. This can be particularly devastating in children, whose brains are developing at a galloping pace from before they are born to age three.

HEALTH EFFECTS OF TOXIC STRESS

- Chronic toxic stress—living in a red alert mode for months or years — can also damage our bodies.
- In a red alert state, the body pumps out adrenaline and cortisol continuously.
- The constant presence of adrenaline and cortisol keep blood pressure high, which weakens the heart and circulatory system.
- They also keep glucose levels high to provide enough energy for the heart and muscles to act quickly; this can lead to type 2 diabetes.
- Too much adrenaline and cortisol can also increase cholesterol.
- Too much cortisol can lead to osteoporosis, arthritis, gastrointestinal disease, depression, anorexia nervosa, Cushing's syndrome, hyperthyroidism and the shrinkage of lymph nodes, leading to the inability to ward off infections.
- If the red alert system is always on, eventually the adrenal glands give out, and the body can't produce enough cortisol to keep up with the demand. This may cause the immune system to attack parts of the body, which can lead to lupus, multiple sclerosis, rheumatoid arthritis, and fibromyalgia.

HEALTH EFFECTS OF TOXIC STRESS

- Cortisol is also extremely important in maintaining the body's appropriate inflammation response. In a normal response to a bee sting or infection, the body rushes antibodies, white blood cells and other cell fighters to the site and the tissues swell while the battle rages. But too much swelling damages tissue. Cortisol controls this fine balance. So without the mediating effects of cortisol, the inflammatory response runs amok and can cause a host of diseases.
- If you're chronically stressed and then experience an additional traumatic event, your body will have trouble returning to a normal state. Over time, you will become more sensitive to trauma or stress, developing a hair-trigger response to events that other people shrug off.
- Biomedical researchers say that childhood trauma is biologically embedded in our bodies:
  - Children with adverse childhood experiences and adults who have experienced childhood trauma may respond more quickly and strongly to events or conversations that would not affect those with no ACEs, and have higher levels of indicators for inflammation than those who have not suffered childhood trauma.
  - This wear and tear on the body is the main reason why the lifespan of people with an ACE score of six or higher is likely to be shortened by 20 years.



EPIGENETICS

- Most people believe that the DNA we're born with does not change and that it determines all that we are during our lifetime.
- That's true, but the research from epigenetics — the study of how social and other environments turn our genes on and off — shows that toxic stress can actually change how our genes function, which can lead to long-term changes in all parts of our bodies and brains.
- What's more, these changes can be transferred from generation to generation.
- Epigenetics means "above the genome" and refers to changes in gene expression that are not the result of changes in the DNA sequence (or mutations).

RESILIENCE

- The good news is that the brain is plastic, and the body wants to heal.
- The brain is continually changing in response to the environment. If the toxic stress stops and is replaced by practices that build resilience, the brain can slowly undo many of the stress-induced changes.
- There is well documented research on how individuals' brains and bodies become healthier through mindfulness practices, exercise, good nutrition, adequate sleep, and healthy social interactions.
- Research on families shows that interventions — such as Nurse-Family Partnership, Healthy Steps, and Child First — can improve the lives of parents and children. Evidence-based parenting practices (Incredible Years, Triple P Parenting, etc.), increase the health of parents and children.
- Research on communities and systems is emerging, but early data, especially from schools and juvenile detention centers, is showing promise.

7 C'S OF RESILIENCE

- Competence: When we notice what young people are doing right and give them opportunities to develop important skills, they feel competent. We undermine competence when we don't allow young people to recover themselves after a fall.
- Confidence: Young people need confidence to be able to navigate the world, think outside the box, and recover from challenges.
- Connection: Connections with other people, schools, and communities offer young people the security that allows them to stand on their own and develop creative solutions.
- Character: Young people need a clear sense of right and wrong and a commitment to integrity.
- Contribution: Young people who contribute to the well-being of others will receive gratitude rather than condemnation. They will learn that contributing feels good and may therefore more easily turn to others, and do so without shame.
- Coping: Young people who possess a variety of healthy coping strategies will be less likely to turn to dangerous quick fixes when stressed.
- Control: Young people who understand privileges and respect are earned through demonstrated responsibility will learn to make wise choices and feel a sense of control.

- "Resilience is a message of hope," says Debbie Alleyne, a child welfare specialist at the Center for Resilient Children at Devereux Advanced Behavioral Health in Villanova, PA. "It is important for everyone to know that no matter their experience, there is always hope for a positive outcome. Risk does not define destiny."

RESOURCES

- The Deepest Well: Healing the Long-Term Effects of Childhood Adversity by Nadine Burke Harris
- How childhood trauma affects health across a lifetime (16 minute TED Talk by Dr. Nadine Burke Harris)

REFERENCES

- https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/healthy-foster-care-america/Pages/Trauma-Guide.aspx
- https://www.healthcaretoolbox.org/
- https://www.npr.org/sections/health-shots/2015/03/03/377569539/even-some-doctors-fear-these-10-questions