



# Trauma 101

ACEs and the Why Behind Trauma Lens Care

# What are ACEs? (Adverse Childhood Events)

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.

# The ACE Study

In 1985, Vincent Felitti was working on a project at an obesity clinic. Felitti was astounded when more than half of his participants dropped out, despite the fact that they were losing weight.

Seeking a rationale for the subjects' drop-out rate, Felitti conducted follow-up interviews.

During one of the interviews, a participant was accidentally asked, "How much did you weigh when you first became sexually active?" to which the participant responded with "40lbs."

The participant was four years old when her father raped her.

# The ACE Study

This was a turning point for Felitti, and as he questioned more participants, he found that the majority of the 286 drop-out participants interviewed were sexually abused as children. After making these shocking revelations, Felitti teamed up with the Centers for Disease Control and Kaiser Permanente to investigate further. This led the research team to conduct a mega study on the effects of Adverse Childhood Experiences on adults.

There were 10 types of childhood trauma measured in the ACE Study.

Five are personal — physical abuse, verbal abuse, sexual abuse, physical neglect, and emotional neglect.

Five are related to other family members: a parent who's an alcoholic, a mother who's a victim of domestic violence, a family member in jail, a family member diagnosed with a mental illness, and the disappearance of a parent through divorce, death or abandonment.

Each type of trauma counts as one.

# The ACE Quiz

The 10 ACEs the researchers measured:

- Physical, sexual and verbal abuse.
- Physical and emotional neglect.
- A family member who is:
  - depressed or diagnosed with other mental illness;
  - addicted to alcohol or another substance;
  - in prison.
- Witnessing a mother being abused.
- Losing a parent to separation, divorce or other reason.

# ACEs Are Common

The study's researchers came up with an ACE score to explain a person's risk for chronic disease. Think of it as a cholesterol score for childhood toxic stress. You get one point for each type of trauma. The higher your ACE score, the higher your risk of health and social problems.

Number of Adverse Childhood Experiences (ACE Score)	Women	Men	Total
0	34.5	38.0	36.1
1	24.5	27.9	26.0
2	15.5	16.4	15.9
3	10.3	8.6	9.5
4 or more	15.2	9.2	12.5

## Adverse Childhood Experiences Are Common

### Household dysfunction:

Substance abuse	27%
Parental sep/divorce	23%
Mental illness	17%
Battered mother	13%
Criminal behavior	6%

### Abuse:

Psychological	11%
Physical	28%
Sexual	21%

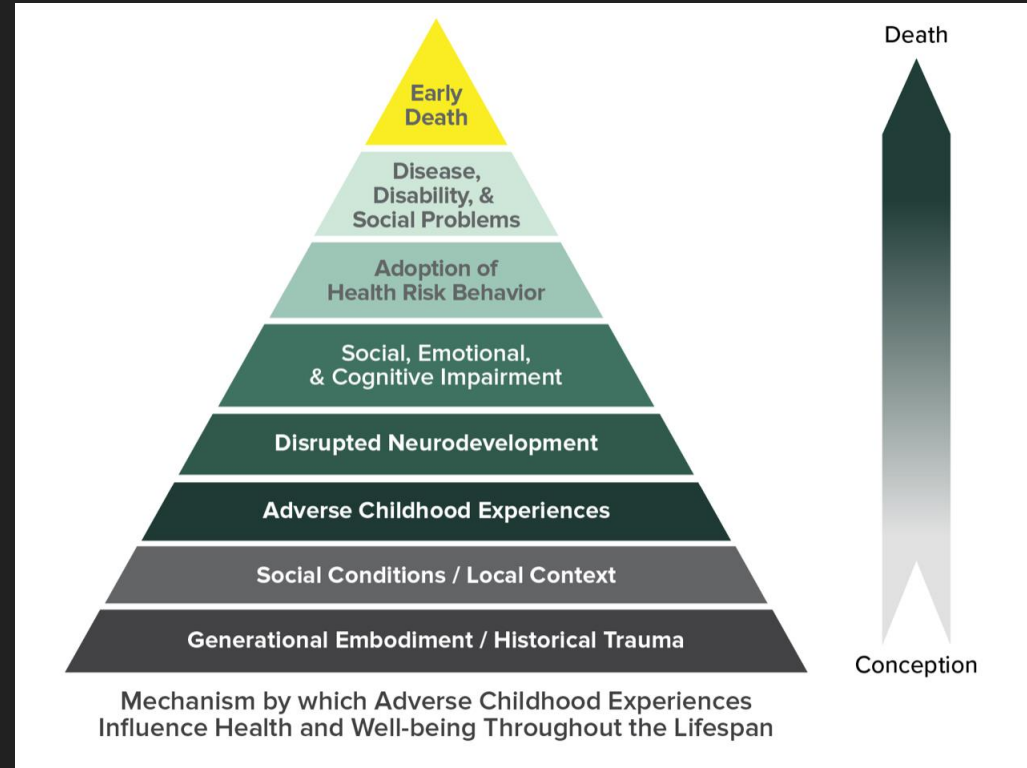
### Neglect:

Emotional	15%
Physical	10%



# Making Connections

The CDC's Adverse Childhood Experiences Study ([ACE Study](#)) **uncovered** a stunning link between childhood trauma and the chronic diseases people develop as adults, as well as social and emotional problems. This **includes** heart disease, lung cancer, diabetes and many autoimmune diseases, as well as depression, violence, being a victim of violence, and suicide.



# ACE Study Findings

As your ACE score increases, so does the risk of disease, social and emotional problems.

With an ACE score of 4 or more, things start getting serious.

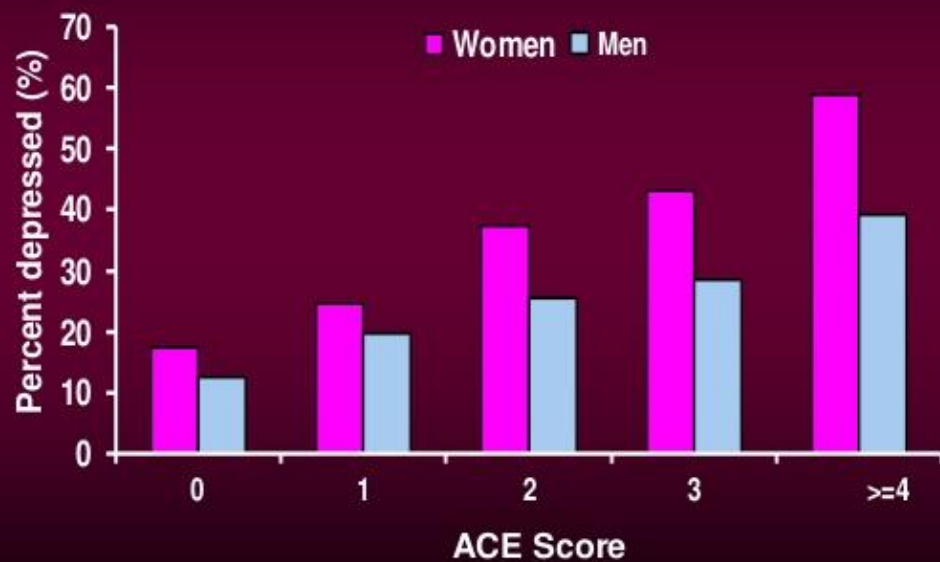
The likelihood of...

- chronic pulmonary lung disease **increases** 390 percent
- hepatitis, 240 percent
- depression 460 percent
- attempted suicide, 1,220 percent.

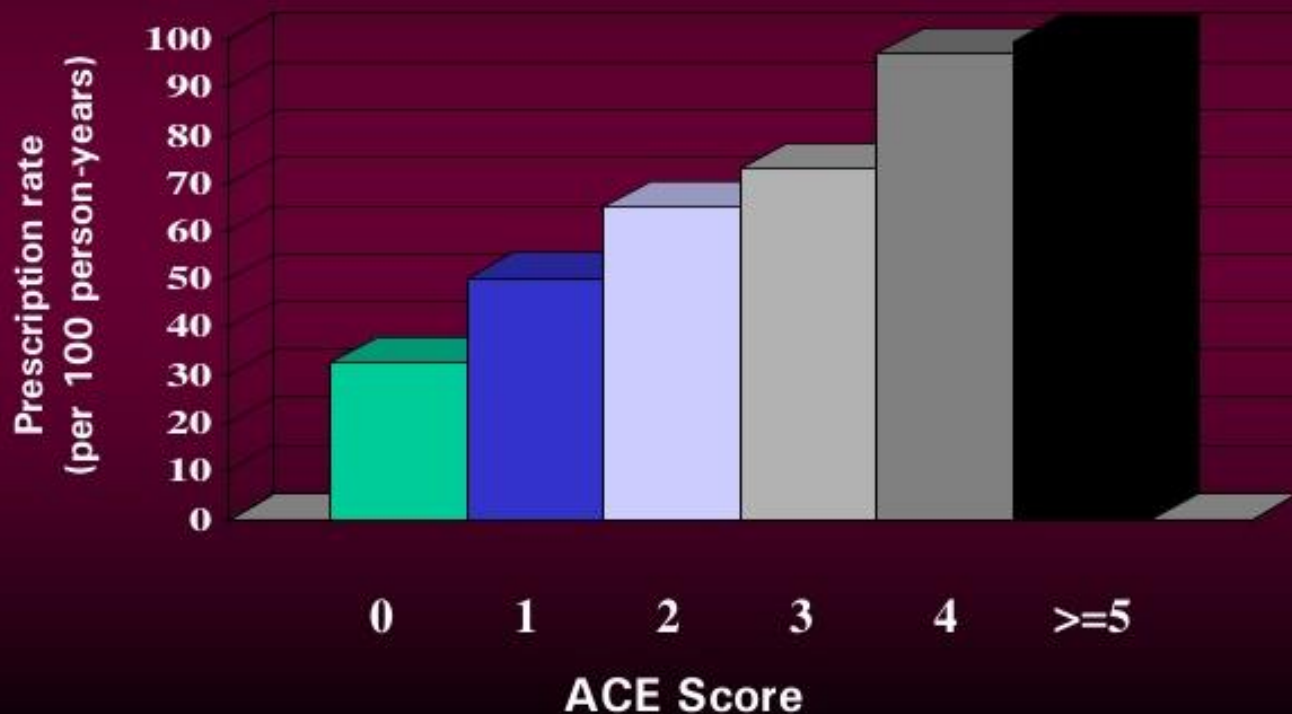
Table 1. ACE-Related Odds of Having a Physical Health

Health Condition	0 ACEs	1 ACEs	2 ACEs	3 ACEs	4+ ACEs
Arthritis	100%	130%	145%	155%	<b>236%</b>
Asthma	100%	115%	118%	160%	<b>231%</b>
Cancer	100%	112%	101%	111%	157%
COPD	100%	120%	161%	<b>220%</b>	<b>399%</b>
Diabetes	100%	128%	132%	115%	<b>201%</b>
Heart Attack	100%	148%	144%	<b>287%</b>	<b>232%</b>
Heart Disease	100%	123%	149%	<b>250%</b>	<b>285%</b>
Kidney Disease	100%	83%	164%	179%	<b>263%</b>
Stroke	100%	114%	117%	180%	<b>281%</b>
Vision	100%	167%	181%	199%	<b>354%</b>

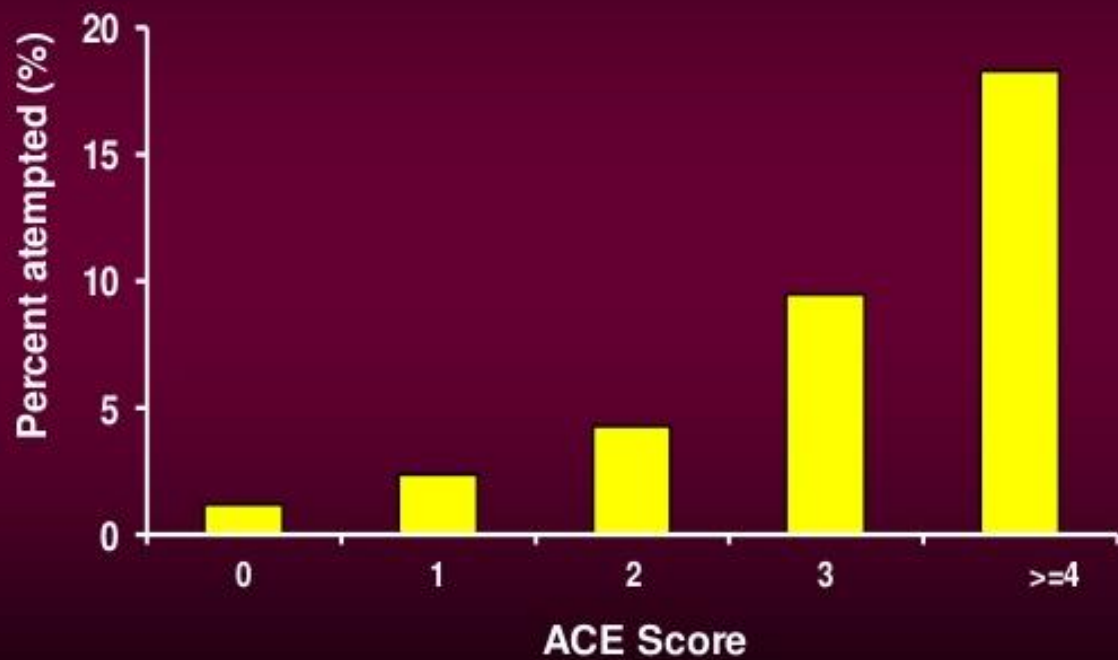
## The ACE Score and a Lifetime History of Depression



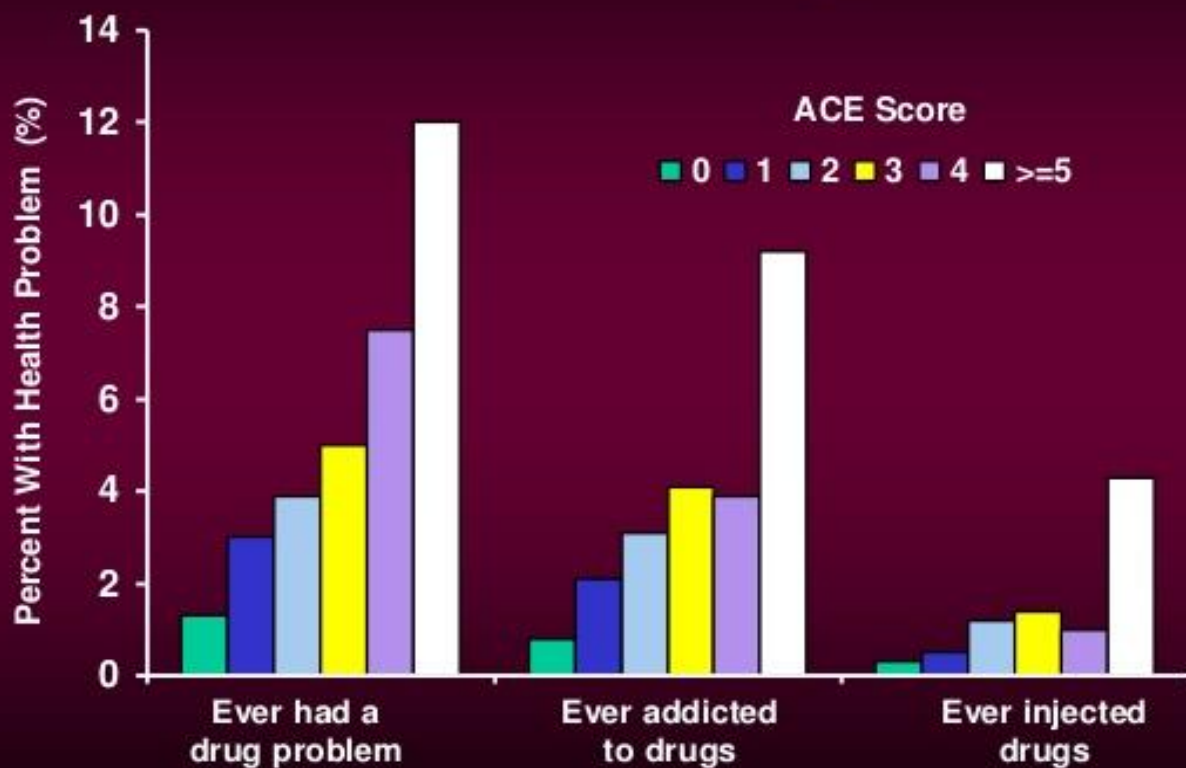
## ACE Score and Rates of Antidepressant Prescriptions



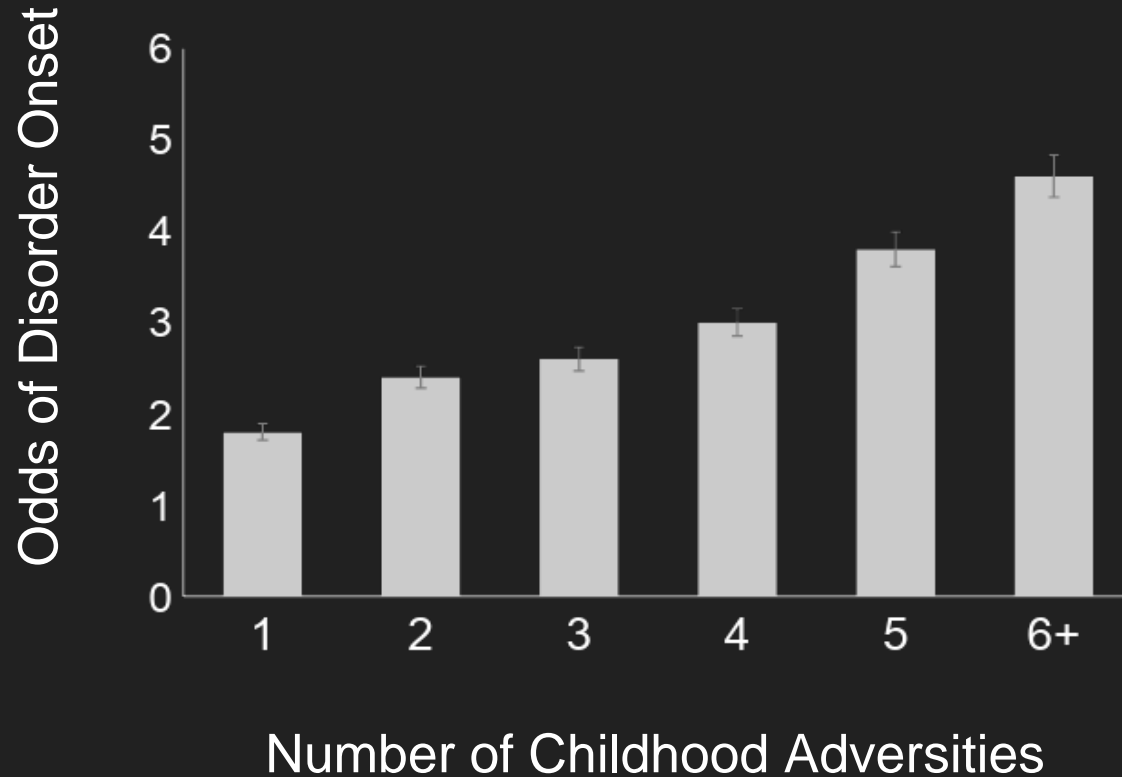
## The ACE Score and the Prevalence of Attempted Suicide



## ACE Score and Drug Abuse



# Childhood Adversity Increases the Odds of Onset of Psychopathology





# Childhood Adversity

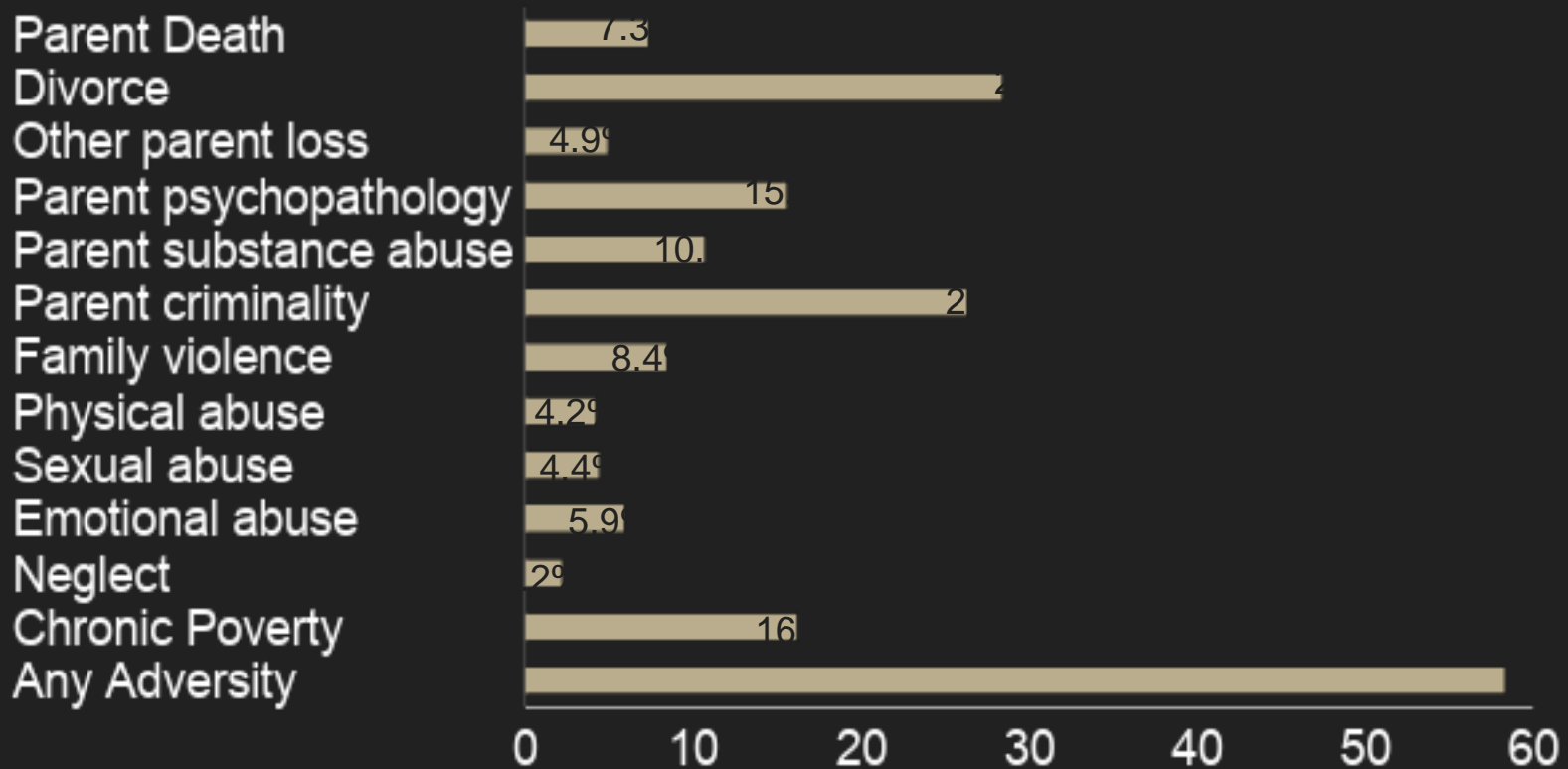


- Father has a drinking problem
- Explosive rage that is unpredictable
- Hits children and their Mother when angry



- Single Mother who is depressed
- Works two jobs to support the family and has little time or energy to spend with her children
- Few opportunities for communication or interaction with

# Prevalence of Different Adversity Types in the U.S.



# What Causes This?

At the same time that the ACE Study was being done, parallel research on kids' brains found that **toxic stress damages the structure and function of a child's developing brain.**

This was determined by a group of neuroscientists and pediatricians, including neuroscientist **Martin Teicher** and pediatrician **Jack Shonkoff**, both at Harvard University, neuroscientist **Bruce McEwen** at Rockefeller University, and child psychiatrist Bruce Perry at the **Child Trauma Academy**.

# What Causes This?

When children are overloaded with stress hormones, they're in flight, fright or freeze mode. They can't learn in school. They often have difficulty trusting adults or developing healthy relationships with peers (i.e., they become loners).

To relieve their anxiety, depression, guilt, shame, and/or inability to focus, they turn to easily available biochemical solutions — nicotine, alcohol, marijuana, methamphetamine — or activities in which they can escape their problems — high-risk sports, proliferation of sex partners, and work/over-achievement. (e.g. Nicotine reduces anger, increases focus and relieves depression. Alcohol relieves stress.)

# What Causes This?

Using drugs or overeating or engaging in risky behavior leads to consequences as a direct result of this behavior.

For example, smoking can lead to COPD (chronic obstructive pulmonary disease) or lung cancer.

Overeating can lead to obesity and diabetes.

In addition, there is increasing research that shows that severe and chronic stress leads to bodily systems producing an inflammatory response that leads to disease.

# What Causes This?

In addition, toxic stress can be passed down from generation to generation. The field of epigenetics shows that we are born with a set of genes that can be turned on and off, depending on what's happening in our environment.

If a child grows up with an overload of toxic stress, their stress-response genes are likely to be activated so that they are easily triggered by stressful situations that don't affect those who don't grow up with toxic stress. They can pass that response onto their children.

# What Causes This?

Toxic stress response can occur when a child experiences strong, frequent, and/or prolonged adversity—such as physical or emotional abuse, chronic neglect, caregiver substance abuse or mental illness, exposure to violence, and/or the accumulated burdens of family economic hardship—without adequate adult support.

This kind of prolonged activation of the stress response systems can disrupt the development of brain architecture and other organ systems, and increase the risk for stress-related disease and cognitive impairment, well into the adult years.

# What Causes This?

When toxic stress response occurs continually, or is triggered by multiple sources, it can have a cumulative toll on an individual's physical and mental health—for a lifetime.

The more adverse experiences in childhood, the greater the likelihood of developmental delays and later health problems, including heart disease, diabetes, substance abuse, and depression.



# Marie

My ACE score is 6. My resilience score 9.

I'm now 46. I have suffered depression 3 times in my life and Tried to kill myself twice when I was in my 20's.

In the last 3.5 years I have suffered significant physical illness which almost killed me twice. I've lost 2 organs and part of another as a result. Countless operations and now medication dependent to stay alive. However I am very grateful to be alive and am embracing my latest rock bottom to really make permanent and fundamental changes to my life. I have already started. I've only just this morning started to read about ACE, so the start of a new path now, but one of life change rather than packing everything back up in a box again, storing it and continuing along the same cul de sac. Time to release and truly heal rather than the continuous fight.

# Kay

I have a score of 9. I have a lot of health issues at the age of 26. I've had 2 colonoscopies because of digestive issues, 4 root canals and all of my teeth have fillings and one has been pulled. Migraines, body aches, and anxiety all the time. Random lumps that I'm getting checked out, chest pains. People I work with and friends are always saying "you're too young to have these issues it's all in your head" I think my ACE score can speak to why I'm having health issues. Mentally, I am always on edge, but I have been able to put myself through college and I now work at a Fortune 500 company and followed my dreams. My sister didn't graduate high school, got pregnant as a teen and has addiction problems. I'd say these tests are very accurate in predicting the futures of the children who deal with major issues, it's very sad. I'm glad I have a lot of resilience and was able to get out of it and live my own life..it sucks that I'll be dealing with my childhood my whole life but thank god for other adults in my life or I'd probably be dead.

# Ruby

I took both the ACE test and the resilience test. No surprises, I had a very high score on ACE and an almost zero score on the resilience test. I am the over achiever (working long past retirement, afraid of having nothing to do). I am a loner, divorced and gave up on relationships. I am a super health nut person. I'm stuck inside my head, inside a book and very self dependent. My son says I did a very good job raising him mainly alone. He is well educated and follows the same over achievers pattern as I. I was very afraid to use drugs and alcohol because I always felt that I had a tendency for dependency since my father was addicted to both. It took me years of psychological help to feel that I was worthy. My greatest competition was my self. I can finally wear a size 8 and be good with that. I can finally laugh at myself and embrace my me. ruby, from south carolina.

## Ashleigh, Inmate

My earliest memory of excessive drinking was when I was five. My father was holding my hair back as I leaned over the front porch recapping just how much volume was in five Budweiser's. I wasn't in any trouble... It was a right of passage in my family...I am responsible for my actions and their consequences, but if substance abuse had been removed from the equation of my life, then my criminal record would not exist.

I am so hopeful for change.

# Resilience

Children become resilient through healthy, nurturing relationships.

## Resilience

(n.) The ability to become strong, healthy, or successful again after something bad happens.

[extramadness.com](http://extramadness.com)

“For years mental health professionals taught people that they could be psychologically healthy without social support, that “unless you love yourself, no one else will love you.” ...The truth is, you cannot love yourself unless you have been loved and are loved. The capacity to love cannot be built in isolation”

— **Bruce D. Perry, [The Boy Who Was Raised as a Dog: And Other Stories from a Child Psychiatrist's Notebook](#)**

# Resilience

Research indicates that **supportive, responsive relationships** with caring adults as early in life as possible can prevent or reverse the damaging effects of toxic stress response.

Resilience research also shows that the appropriate integration of resilience factors — such as asking for help, developing trusting relationships, forming a positive attitude, listening to feelings — can help people improve their lives.

# Trauma Lens Care Increases Resilience

This is very important. The relationships a child has, with secure, dependable attachments, are more important than their ACEs.

TLC helps teachers and community intervene at the point of trauma.

By identifying trauma, we mobilize teachers and school personnel.

TLC changes the lens through which teachers view behaviors in light of trauma and adversity.

“The more healthy relationships a child has, the more likely he will be to recover from trauma and thrive. Relationships are the agents of change and the most powerful therapy is human love.”

- **Bruce D. Perry, The Boy Who Was Raised as a Dog: And Other Stories from a Child Psychiatrist's Notebook**

Thank You!

