



Understanding

N. E. A. R.

Neuroscience

Epigenetics

Adverse Childhood Experiences

Resilience

A close-up photograph of a man with a shaved head kissing a baby on the forehead. The man is wearing a light blue shirt. The baby is wearing a blue onesie. The background is dark. A semi-transparent white banner is overlaid at the top of the image, containing the text "Memory of our experiences IS STORED IN OUR BODY".

Memory of our experiences
IS STORED IN OUR BODY

From that first spark of life, as cells divide and form a tiny beating heart, a fragile skeletal structure, a central nervous system... the experience of being in relationship with another person and with the world around us has profound impacts on who we are and who we will become. Although we can recall and describe with words much of what's happened in our lives, the memory of human experience is stored in our bodies, and not just our minds.



This presentation is about discovery. It's a story of scientists who challenged themselves to think differently about the facts they could see. This is a story of their impatience with the amount of heart disease, diabetes, depression and suffering that exists in our country. It's a story about the courage to set aside beliefs that can hide the truth, and about systematically testing new possibilities. And finally, this is a story about you and me – and what we might do with a scientific discovery powerful enough to profoundly change the future of the public's health.

01/12/14

NEWS

Early Adversity Increases Physical, Mental, Behavioral Problems, Scientists Report



Dr. Robert Anda & Dr. Vincent Felitti
Investigators

Centers for Disease Control & Prevention,
Kaiser Permanente Study

Over 17,000 study participants

The ACE Study confirms, with scientific evidence,
that adversity early in life increases physical, mental
and behavioral problems later in life.

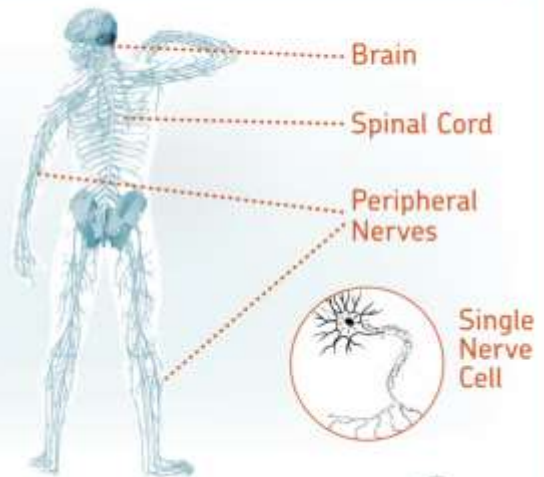
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I'm going to share with you findings from the Adverse Childhood Experience Study... We'll call it "the ACE Study". The ACE Study confirms, with scientific evidence, that adversity early in life increases physical, mental and behavioral problems later in life. The ACE Study is the largest study of its kind, with over 17,000 participants. It was developed and co-sponsored by Kaiser Permanente (*managed care consortium*) of San Diego, California, and the Centers for Disease Control and Prevention in Atlanta, Georgia in the early '90s. Dr. Vincent Felitti and Dr. Rob Anda are the co-principal investigators of the ACE Study. Dr. Anda, who designed the ACE Study while he was working as a Senior Scientist at the CDC, reviewed and approved all the information from the study that I'll report to you today.

HUMAN NERVOUS SYSTEM

Nervous system
ORCHESTRATES BODY
FUNCTIONS & PERCEPTIONS

Neuroscience
HELPS US UNDERSTAND WHY
A C E S
ARE SO POWERFUL



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TIE TO MOVIE:

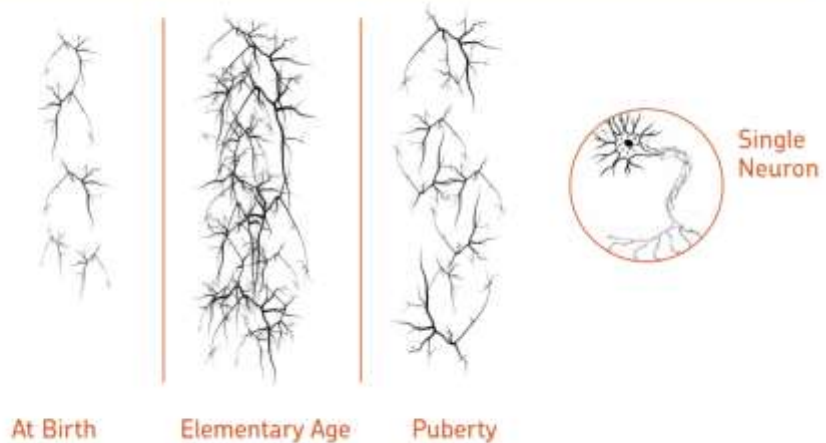
Before I introduce the ACE Study, I want to explain a little about brain development. The human central nervous system connects us to ourselves, to other people, and to the world around us.

The central nervous system consists of the brain and spinal cord that integrate all of our senses and information from receptors located throughout the human body. It regulates internal body functions and manages elaborate chemical and electrical signaling.

The nervous system considers sensory input in the context of each and every second, almost instantaneously, and determines our understanding of, and response to the world we live in. Cells in the nervous system are called neurons. They are stunningly effective at processing and transmitting information, and they have a central purpose in doing so: to adapt in ways that keep us alive.

Dr. Martin Teicher of Harvard University reviewed and approved all of the brain science facts in this presentation.

SYNAPTIC DENSITY



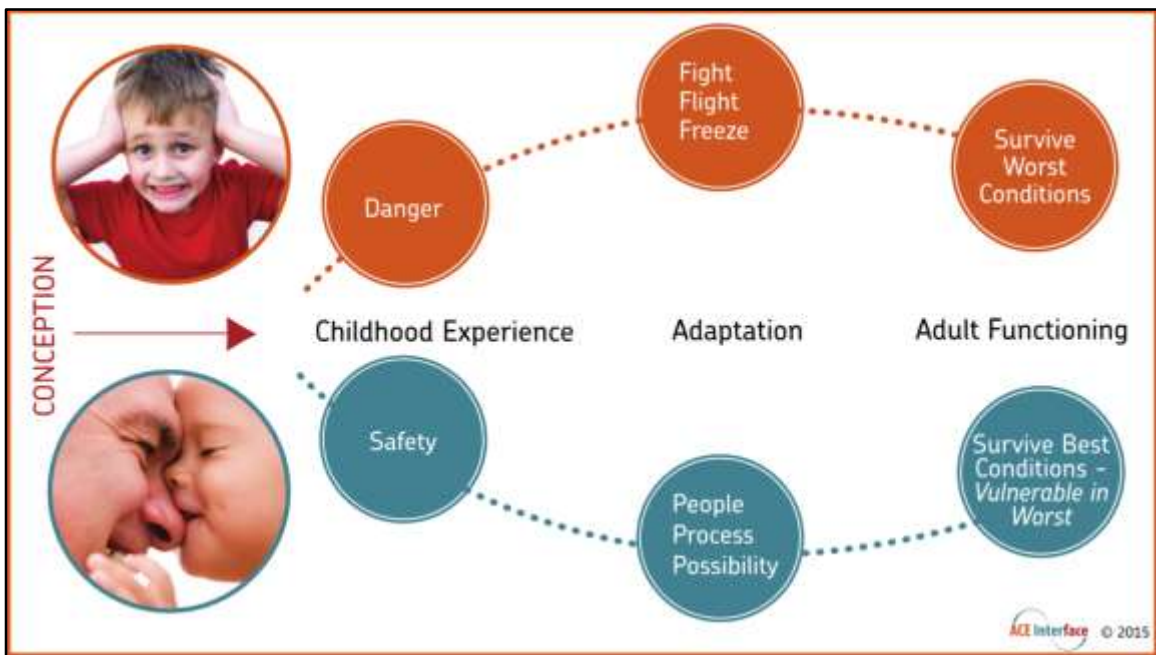
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TIE TO MOVIE: 'Since the movie was made there have been additional scientific discoveries about illustrate the development of the brain beyond those early years... in this presentation we will share more'

On the far left we see a set of brain cells--or neurons--and what they might look like at the time of birth. There aren't many connections between these cells at birth; babies are born with only the connections and brain functions they need at that point in life.

Most of the wiring of our brains occurs as the result of life experience from our senses. By age six those same brain cells now have many connections. The wiring of the brain--or the making of complex neural networks is experience dependent. What gets experienced the most tends to lead to more robust connections between nerve cells that form networks. This is a process called branching or "arborization".

The last section of the slide represents age 14--about the time of puberty. Notice that there are now fewer connections between the brain cells than there were at age 6. This is because the least "experienced" connections tend to withdraw at about the time of puberty. This process is called "pruning". This phenomenon helps to explain why neglect--or not getting the experiences we need can have such a powerful negative impact on health and social functioning.



Every person's life is unique. But for illustration, let's imagine two worlds – one is mean and dangerous. The second is kind and generous.

Traumatic experience during development – like abuse, neglect, and chaotic relationships– generates predictable patterns of brain architecture, behavior, and traits.

Humans are only really made to be under stress for about 20 minutes at a time – long enough to prepare for a fight, or to hide. So experiences that cause stress chemicals to be continuously produced, for example child abuse, neglect, or even being in a war zone, have a big impact on development. Under these circumstances, our bodies tend to prepare for life in a dangerous world.

Stress hormones exert influence on cells, chemicals and wiring. They sculpt brains that are wired for certain characteristics – like being edgy, hot tempered, impulsive and hypervigilant, or being withdrawn, dissociated, or numb. This is the path outlined on the top line of the slide. For example, people who have had traumatic stress from conception to the toddler years will likely have a higher baseline of the stress hormones like cortisol in their bodies. As a result, these folks may have a very short fuse, be self-focused, and may have a difficult time shifting gears from emotion to problem-solving. If there is more danger just around the corner, being focused on others and thinking through options wouldn't contribute to survival—readiness for a next danger would.

But the downside is that when stress hormones, like cortisol, hang around for a long time, they are toxic to brain cells. This toxicity includes making it difficult for brain cells to develop healthy neural networks and can even cause brain cells to die. That is why we call continuous stress, trauma, and episodic unpredictable stress: "toxic stress".

Dr. Teicher calls the lower path in this diagram the "benevolent-world" path. The world is kind, easy-going, helpful and free from traumatic stress. People growing up on this path are more likely to develop a brain—with cells and wiring and chemistry -- for being focused, flexible and relationship oriented.



What kind of situations might be a good match for a person who tends to be edgy, hypervigilant, emotionally detached, or quick to act? How might these kinds of adaptations be useful in this environment? *(Take 5 minutes for popcorn response)*

One common belief in our society is that the people whose experience takes them on the top path are maladaptive and the people along the bottom path are adaptive. That's untrue...both pathways are adaptive. Both brains are adapting to their experience.

And that's good for us as a species. The people whose brains adapt to a dangerous or stressful world are more likely to survive when life is tough. The people whose brains adapt to a safe world are likely to be prepared to meet society's expectations in tranquil times. Our experiences get wired into our biology.

ADAPTATIONS VS EXPECTATIONS

WHEN BIOLOGY
collides
WITH SOCIAL
EXPECTATIONS
we run into
TROUBLE



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Dr. Teicher says it's when our biology collides with social expectations that we run into trouble. If you put a person from the benevolent world into the chaotic and turbulent environment of, say, riot control, that person may struggle unless he has learned some very specific skills.

Likewise, a child adapted to a dangerous stressful world may not sustain patience. He or she may not share, cooperate or use words as a first choice.

When that child comes to school and we ask her to sit still, share, and cooperate, there can be a painful disconnect that is hard for everyone. The child will have to be actively taught the skills required to succeed in this context just as we would train a person from the benevolent path how to act in a chaotic and dangerous environment.

EFFECTS OF MALTREATMENT



type of maltreatment
GENDER
A G E

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With his team at Harvard and McLean Hospital, Dr. Martin Teicher learns about *the human brain and biology* through a systematic process, isolating one factor at a time. He compares the brains of people who have experienced neglect or abuse to brains of people who have not. His findings suggest that maltreatment effects brain development in predictable ways. Not all experience generates the same effects.

There are at least three known variables that determine the effects of maltreatment: the type of maltreatment, gender, and age at the time of the maltreatment.



Let's take a closer look at one of the factors that determines the effects of maltreatment: age. Why would the age of a person at the time of maltreatment have a powerful effect?

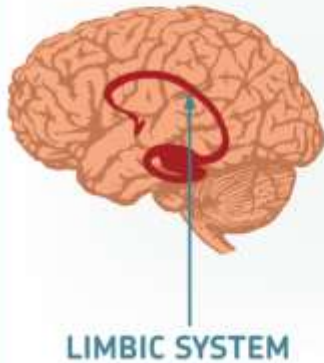
The brain develops in a sequence from most primitive to most advanced.

Think about it. A tiny baby doesn't need to be able to write a paper or pass a math test – but she does need to breathe, eat, regulate body temperature, sleep, and connect with someone who will nurture and protect her. So, the parts of the brain that control internal body functioning and ability to connect to a primary caregiver develop earliest. Brain regions that control complex thought processes like abstract writing and math aren't fully developed until later in childhood.

...And so continues a magnificent dance of experience and adaptation generating age-appropriate capacities for feeling, thinking, and responding to the world around us.

As the brain develops, there are sensitive periods for each brain region when the size and functional abilities of the region are most affected by experience and are most vulnerable to toxic stress. New abilities build on the growth and development from earlier months and years. Over time, elaborate systems of specialized brain regions develop that help us to navigate increasingly complex environments.

THE LIMBIC SYSTEM



**FIGHT
OR
FLIGHT**

vital for
LEARNING
MEMORY
REWARD
REINFORCEMENT

regulates
HORMONES
MOOD
HEARTBEAT
SEXUAL BEHAVIOR

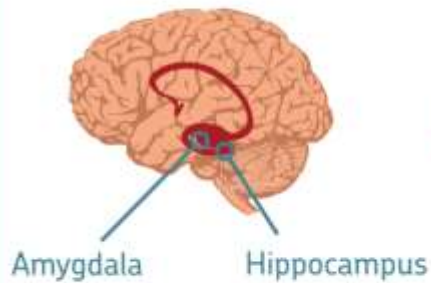
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One of those elaborate systems is the limbic system. The brain regions in the limbic system control many things including physical balance, internal temperature regulation, and digestion.

The functions we will focus on are the system's ability to regulate hormones, mood, heartbeat and sexual behavior. The limbic system is vital for learning, memory and reward reinforcement processes that help us stay on a healthy track.

The limbic system has an important role in the "fight or flight" response to danger.

THE HIPPOCAMPUS AND AMYGDALA



**VITAL
for
RELATIONSHIPS**



Panic & Fear | Attention | Memory | Social Cues

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The hippocampus and amygdala are two regions in the limbic system that are vital for forming healthy relationships.

They are centers for affect and attention, help us to make meaning from social cues and language, and help us to remember verbal and spatial information.

These regions regulate panic, fear, and a whole range of emotional responses – they help us put-the-breaks-on emotional outbursts when we need to.

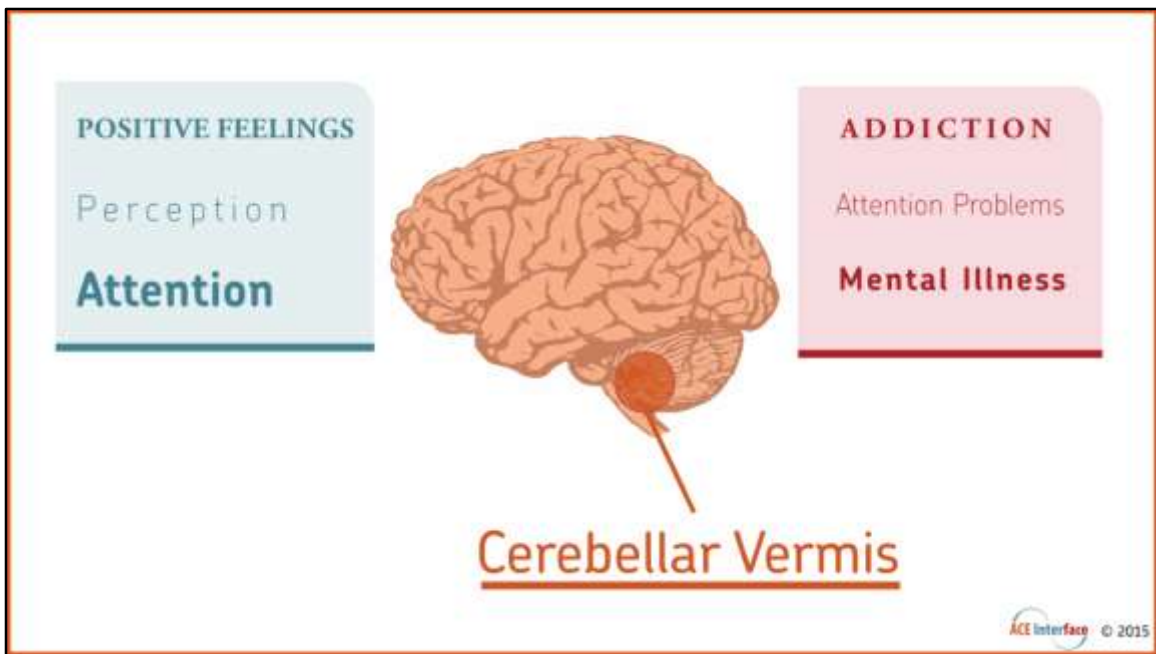


The hippocampus and amygdala are vulnerable to all forms of maltreatment in the first three years of life, and to sexual abuse through age five. But the effects of the maltreatment may not be seen for another nine to 13 years.

At birth, the hippocampus has granule, or “seedling” cells that are biologically programmed to grow and mature around puberty and in adolescence.

Delayed symptoms from toxic stress can occur because stress hormones like cortisol kill the seedling cells.

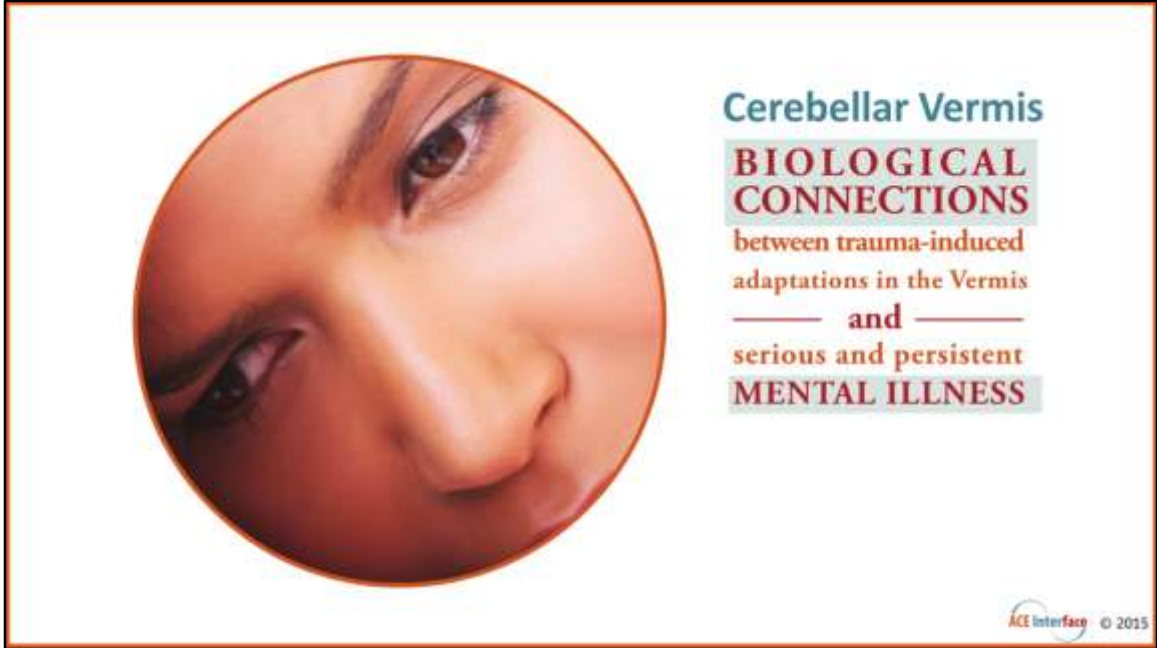
When these cells are killed, the effect can't be seen until years later -- when they fail to grow and produce the brain mass needed for specialized functioning.



Another brain region with seedling cells is the Cerebellar Vermis, which connects the 2 halves of the cerebellum. The Vermis helps us to move through our physical environment and enables us to perceive peripheral details in the world around us.

It's the part of our brain that pays attention to what a group of strangers standing at the side of the road might do, even while we continue to walk toward our destination. So it's no surprise that one consequence of maltreatment is attention problems, including Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD).

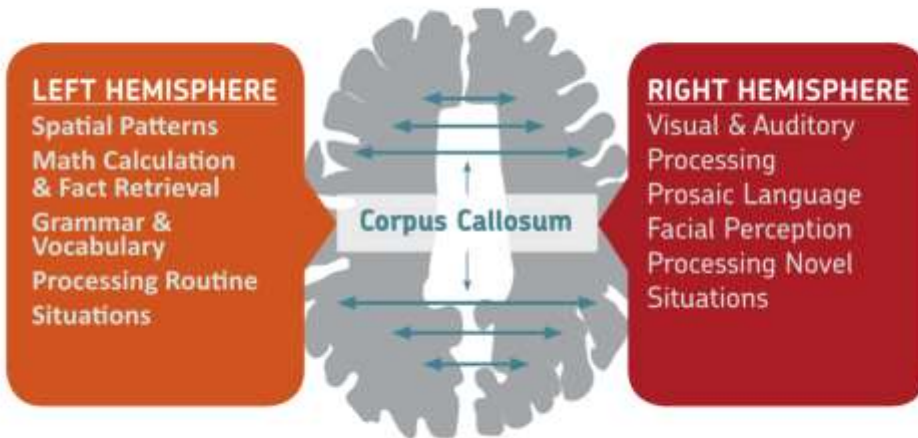
The Vermis is also the part of the brain that regulates the release of our "feel-good" brain chemistry, norepinephrine and dopamine. Research on abuse and this region show not only reduced size of the Vermis, but decreased blood flow and functionality as well. With limited access to positive feelings, it isn't surprising that impacts to this region can lead to vulnerability for depression and substance abuse.



The Vermis is sensitive to all forms of maltreatment just before puberty, and symptoms may not fully emerge until early adulthood.

The Vermis may be the seat of mental health. It has a role in virtually every mental illness, including schizophrenia, borderline personality disorder and depression. We are only beginning to understand the biological connections between trauma-induced adaptations in the Vermis and serious and persistent mental illness.

The Corpus Callosum



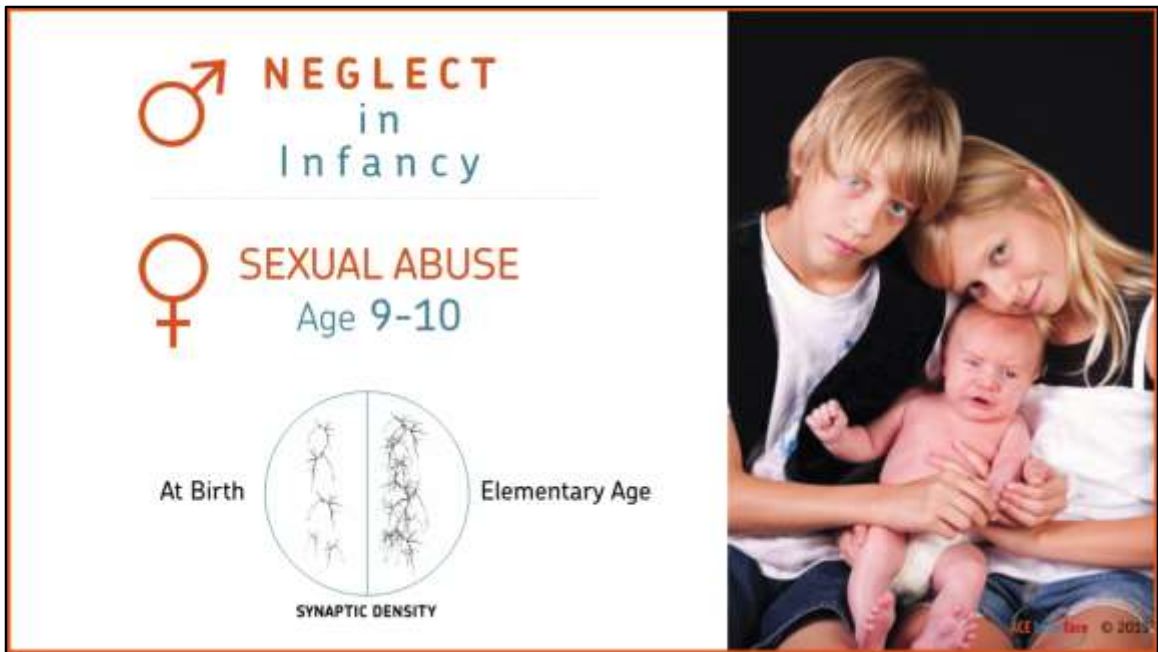
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Some brain regions have several periods of sensitivity that span throughout childhood. The corpus callosum is one of these.

It's a superhighway that connects the right and left hemispheres of the brain.

Each hemisphere of the brain is specialized to control movement and feeling in the opposite half of the body; and each hemisphere specializes in processing certain types of information, such as language or spatial patterns. In order to coordinate movement or think about complex information, the right and left hemispheres must communicate with each other.

The Corpus Callosum helps us to interpret and apply symbols and to integrate language and mathematics – it is the part of the brain we used when we were given “story problems” in school.



Exposure to neglect in infancy (especially for boys); and exposure to sexual abuse around ages 9 and 10 (especially for girls) have powerful impacts on the Corpus Callosum. Exposure impedes cell division and interrupts myelination of nerve fibers, which is the fatty layer of insulation that helps nerve cells to communicate.

Maltreatment also disrupts electrical activity, making cross-brain communication less reliable. Less cross-brain communication can lead to an inability to integrate rational ideas when in a highly emotional state.

You may know someone who doesn't seem able to respond when you ask him or her to calm down so you can talk through a problem. This may not be a choice; it may be a biological adaptation to childhood experience.



Toxic stress in early childhood has profound effects on brain structures and functions that develop later in childhood. These functions include the mediation of emotional responses, social interaction and abstract thinking. That’s why people say that early childhood is so important – and they’re right.

But, early childhood isn’t the only sensitive developmental period, according to the latest research.

The brain research that has been introduced although accurate is simplified and limited in scope. Each brain region has sensitive periods when experience has powerful effects on brain mass and functioning. For example, during middle childhood – around ages 7 to 13 – emotional and verbal abuses can affect the centers for processing sound, developing verbal language and perceiving social cues. Effects can be different for boys than for girls – for example both neglect and sexual abuse affect boys and girls. But neglect in infancy and through the toddler years for boys has a large effect on cross-brain communication; while cross-brain communication is profoundly affected in girls through sexual abuse of girls around ages 7-10.

By the time we reach our mid to late 20’s our central nervous system, with the brain as its command center, orchestrates everything from our automatic body functions, like breathing and heartbeat, to complex goal oriented behavior and abstract analytical thinking.

The elaborate signaling system in our brains is well practiced. In a fraction of a second, it determines whether sensory information from sight, sound, touch, taste or smell should come into the brain and be processed, or whether the information must be filtered out in favor of survival.

Stress may be interpreted by the brain as something we can tolerate and work through or as something that is overwhelming. Our set-points for that interpretation are largely in place by early adulthood.



have a collective
CHOICE



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We've talked about sensitive developmental periods when toxic stress has profound effects on human development. But these childhood times are also windows of opportunity for building resilience – after all, the developing brain is sensitive to all kinds of experience.

By paying attention to sensitive developmental periods, we can do a better job protecting children and providing the kinds of challenges and supports that may remediate earlier periods of toxic stress and promote life-long health and well-being.

We have a collective choice: we can actively develop skills and accommodations that enable everyone to contribute to community, or we can continue our societal pattern of rejecting people when they have normal adaptive responses to childhood adversity.

If you remember only one thing from this information about brain development, I hope it will be that toxic stress can be hardwired into biology.

Before we assume that a person's behaviors are a rebellious choice, let's think about the possibility that adversity may be at the heart of the challenges we see.



Perhaps you have wondered if it really matters whether or not adults intervene when children are name calling, harassing, or bullying other children.

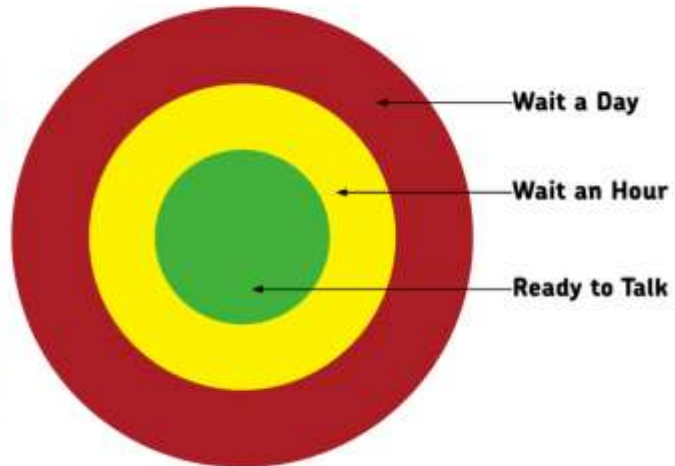
The answer is that it matters very much if we are serious about reducing anxiety, depression, anger-hostility, dissociation, and drug use. Peer and parental verbal abuse have equal effects, according to research published by Dr. Teicher in 2010. Peer verbal abuse during the middle school years has significant impacts on all of these symptoms.

If we want to improve math scores and capabilities in science, technology, and engineering, we need to be intentional about reducing toxic stress in early and middle childhood when toxic stress can affect math and memory competencies.

If we want people to be able to perceive danger coming and have the capabilities necessary to negotiate out of a jam, we must pay attention to toxic stress from middle childhood through the teen years.

Witnessing domestic violence in the elementary years as well as sexual abuse prior to age 12 are known to have effects on the visual cortex, literally limiting the field of vision and limiting visual memory. And, sexual abuse in the middle teen years (15-16) also affects the cortex, leading to difficulty interpreting visual information, thinking abstractly and reasoning through conflict.

Trauma-Informed School Discipline



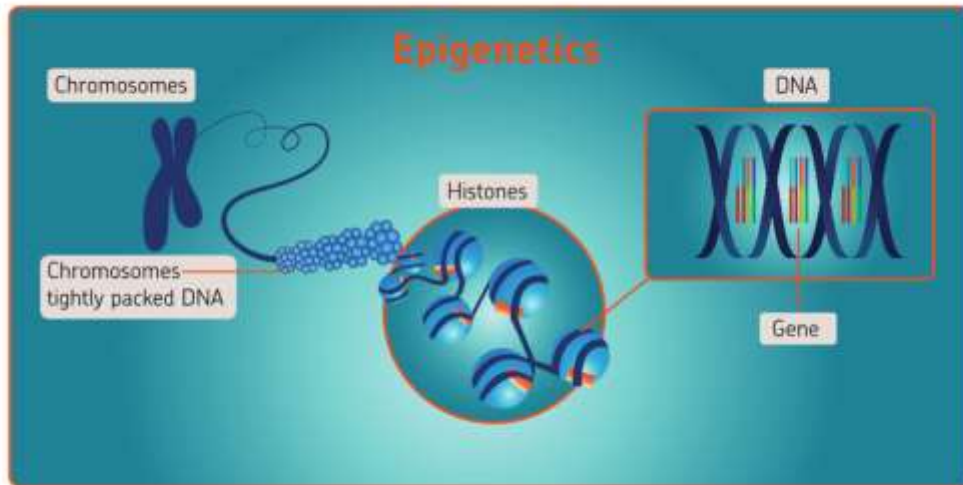
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One alternative high school principal, after learning that some people are not biologically wired to be rational at the same time they are emotionally triggered, developed a new discipline process that has dramatically reduced problems in his school.

He made a simple graphic of a green-yellow-red colored target, with green in the center and red as the outer band. In this school, teachers and students identify their emotional state before any disciplinary conversation can begin. If either person is “in the red” – they wait hours or even a day before they begin to talk about what went wrong and what should be done about it. Once teens have calmed, they can be active partners in taking care of the school, taking care of one another and taking care of themselves.

As we learn more about how trauma is hard-wired into biology, we can begin to challenge old assumptions and develop accommodations – like the simple target -- that help people participate more fully in community life. After adopting changes at Lincoln High School, including the one described here, suspensions dropped by 85%. This makes the students more likely to graduate and less likely to enter the criminal justice system.

ACEs Influence Gene Expression



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Epigenetics is a new scientific field that explains how experience “gets under our skin”.

Our genes are contained in the DNA of our cells. They provide instructions for cells to become specialized into liver cells, heart cells, and so forth, and also contain keys to disease and well-being through the life course.

Epigenetics tells us about the ways that the instructions on our genes are used.

To understand epigenetics, it’s important to understand a bit about how DNA is organized. For example, think of a long strand of fishing line—many yards of it. In order to fish without the line being tangled or disorganized the fisherman puts the line on reel so that the line can be let out or brought back in to stay organized.

We have thousands of genes, so our long strands of DNA are tightly condensed into the chromosomes in the nucleus of our cells. Looking more closely, like the fishing line on the reel, the DNA is tightly wrapped around protein balls called histones.

Epigenetics involves the attachment of chemicals—represented by the orange cylinder in the diagram-- to the DNA at a particular gene. The attachment of that chemical (methylation) can prevent the gene’s message from being available to be read. Other types of chemical attachments can cause the gene to be open so instructions can be read by the cell.

Here is where this is relevant to ACEs. New research suggests that stressful experiences can influence these chemical attachments that influence the reading of our genetic code in ways that can have negative effects on the way our cells function. This may be an important reason why ACEs are related to so many health and social problems.

The hopeful part of this is that other types of positive life experience may affect the reading of our genes that may reverse the negative effects of ACEs or have positive effects on human development, health and well-being.

Epigenetics & Enduring Health



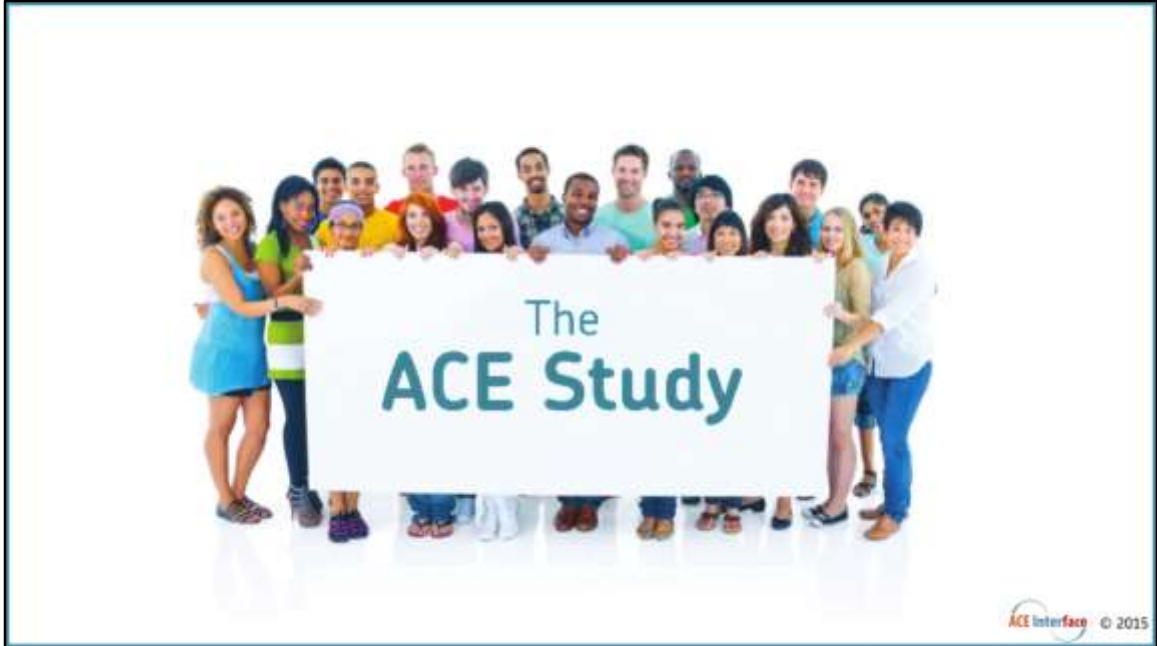
So, the new science of epigenetics tells us that the ability of our cells to read the messages on our genes is influenced by our experiences.

Scientists have discovered that responses to stress may be passed from one generation to the next. In one study scientists conditioned rats to be afraid of the smell of cherry blossoms. When the cherry blossom odor came into the rats' environment, they huddled together "stunned" with fear until the odor was removed. These rats had pups... who grew up without any exposure to cherry blossoms. This generation of rats were separated from their parents and placed into a different environment. When the smell of cherry blossoms was put into their environment, the rats were jumpy – they had heightened sensitivity to the smell of cherry blossoms.

Why might it be a good thing for sensitivity or fear to be passed from one generation to another through epigenetics? Why might it be a good thing for the rats to feel fear even though no one instructed them to fear cherry blossoms?Survival.... Fear can protect a species from dangerous situations or toxins. It may be adaptive for fear to be passed from one generation to the next if it can prevent poisoning or avoid dangers.

The field of epigenetics may help us understand how groups of people may be deeply affected by historical trauma, despite current efforts to care for one another well. How do we heal the wounds of our ancestors? We may not fully know the answer to that question; but we do know that we are the ones responsible today because we are the adults - no one else is waiting in the wings.

So let's think again about the positive side of experience being passed from one generation to the next. Scientists are testing whether positive characteristics – like nurturing behavior – can be inherited from one's parents and grandparents. The field of epigenetics provides us with hope that our ways of relating to one another can create lasting positive changes in genetic expression – how creating Self-Healing Communities now, can lay an enduring path of generational healing and recovery.



We have been talking about the effects of toxic stress on individuals. Now, we're going to switch gears and talk about the effects of toxic stress on the population as a whole. The field of epidemiology is where we'll turn.

Epidemiologists are scientists who study the origins of disease, disability, productivity and health in a population. They help us to focus our efforts on issues and processes that will make the most difference for the well-being of everyone.

We're going to talk about a large epidemiological study about the enduring effects of Adverse Childhood Experience. Dr. Rob Anda and Dr. Vincent Felitti are the co-principal investigators of the study, which they call "The ACE Study".



During the latter part of the twentieth century we learned a great deal about risk factors for the major causes of disability, disease, and premature death. From hand-washing to cancer screening, public health campaigns became more prominent. National education programs raised awareness about the many health risks due to cigarette smoking. A massive campaign was launched to teach the public about HIV transmission. And although campaigns are effective they do not work well for everyone.

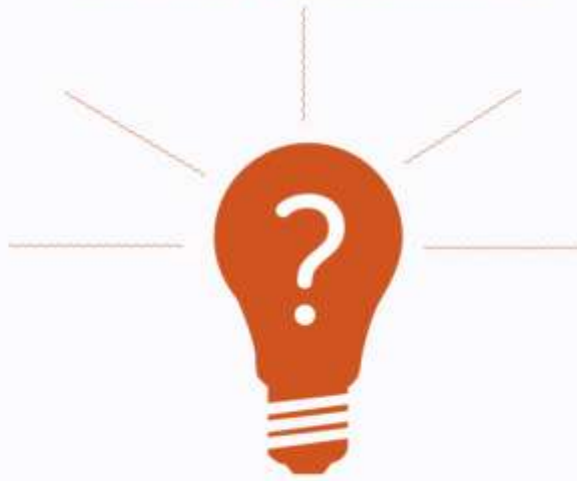
Let's take the example of cigarettes. Despite knowledge of the health risks, many smokers never quit while others attempt to quit, but fail. Why are they unable to break this habit; and why do they start in the first place?

During the late 1980's Dr. Rob Anda, an internist and epidemiologist working at the Centers for Disease Control and Prevention (CDC) in Atlanta and his colleagues showed that people who were depressed were more likely to smoke. When smokers were followed up for more than 10 years, those who were depressed were less likely to quit. Why? At that time people were talking about "self-medication" as a way to understand behaviors like smoking, excessive drinking, and drug abuse. The concept is that the use of psychoactive drugs (or behaviors that can affect emotion) are more common in people who struggle with depression and anxiety. In the case of depression and its link to smoking, it became apparent that the nicotine in tobacco smoke was the likely explanation.

Nicotine can reduce symptoms of depression and anxiety; so the benefits of nicotine in reducing these unpleasant emotions-might help to explain why knowledge of health risks due to smoking are not enough for some people to quit.

Shortly after publishing these studies, Dr. Anda met Dr. Vincent Felitti, Director of the Department of Preventive Medicine at Kaiser Permanente in San Diego. Dr. Felitti visited the CDC to present his finding that related childhood sexual abuse to morbid obesity in women. Dr. Felitti believed that obesity was an understandable response to this form of childhood trauma because of the potential soothing effects of eating and because morbid obesity could be a defense against unwanted sexual advances.

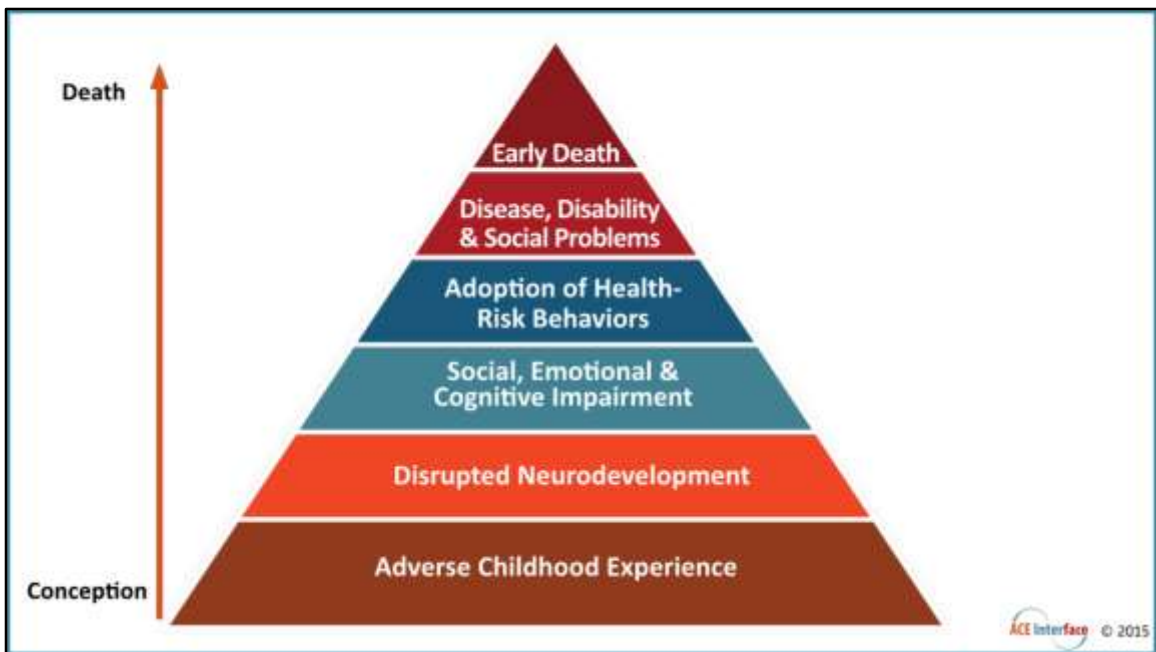
Does the Risk for Chronic Health Problems Originate in Childhood?



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Something clicked between Drs. Anda and Felitti. Could it be that childhood adversity is the origin of later risk factors for major diseases and disability?

They reviewed the literature on the effects of child abuse and realized it was time to broaden the scientific scope to include a broader public health perspective of the effects of childhood abuse and related adverse childhood experiences.



Scientific research begins with a hypothesis, an educated guess about what will be found. The ACE Pyramid represents the hypothesis that Drs. Anda and Felitti were testing with their public health study. When they developed this hypothesis, the leading edge thinking at the time was about how risk factors lead to disease and early death -- just the top three layers of this pyramid.

But Drs. Anda and Felitti knew that something must be missing – **they could see this because the risks are not random; they are concentrated in some populations, and not others.** And people who have one risk tend to have others; that is, they cluster. So, they decided to test their hypothesis that multiple forms of childhood adversity could be a major determinant of health.

The ACE Study (*hypothesis*) concept is that ACEs lead to impaired neurodevelopment, which in turn lead to social, emotional and cognitive adaptations that can then lead to the risk factors for **major** causes of disease, disability, social problems, and early death.

The ACE Pyramid is a life course model, from conception to death that is designed to understand **how adverse childhood experiences** ACEs influence human development in predictable ways.

This is important because **what is predictable is preventable.**



Most prior studies of the health and social effects of childhood abuse focused on a single type of adversity such as sexual abuse. The ACE Study broadened the picture to include multiple types of childhood stressors. In addition, the Study measured a wide array of health and social problems. This is how the ACE study expanded the knowledge into a broader public health perspective.

So, the ACE Study is unique because it provides the potential to understand how multiple forms of childhood stressors can affect many important public health problems. Design of the ACE Study began in 1991; in 1994 the CDC provided funding to conduct the ACE Study at the Department of Preventive Medicine in San Diego.

More than 17,000 adult members of the Kaiser Health insurance plan completed a survey about adverse childhood experiences (ACEs), health behaviors, disease risks and disease, mental health and substance abuse, and other health and social problems; their ages ranged from 19 to 94 years.

Study participants were generally well educated—most had attended college and only 6% did not have a high school diploma (as compared with 13% of the US population).

They were predominantly White middle class people who had access to some of the best health care in the world. Study participants are still being followed to assess the relationship of ACEs to causes of death, incidence of diseases, health care utilization, and use of prescription medications.



This slide shows the 10 categories of adverse childhood experiences that were studied.

The first group are indicators of Household Dysfunction, which include: growing up with substance abusing household members—alcohol or drugs, parental separation or divorce, growing up with mentally ill household members or caregivers, witnessing intimate partner violence—specifically having a battered mother, or criminal behavior as evidenced by having a household member imprisoned.

Three forms of childhood abuse were studied: emotional, physical, and sexual. And two forms of neglect were included: emotional and physical.

As you can see from the percentages on the slide, ACEs are common in this middle class well educated population.

ACEs are Highly Interrelated:
Where One ACE Occurs,
There are Usually Others

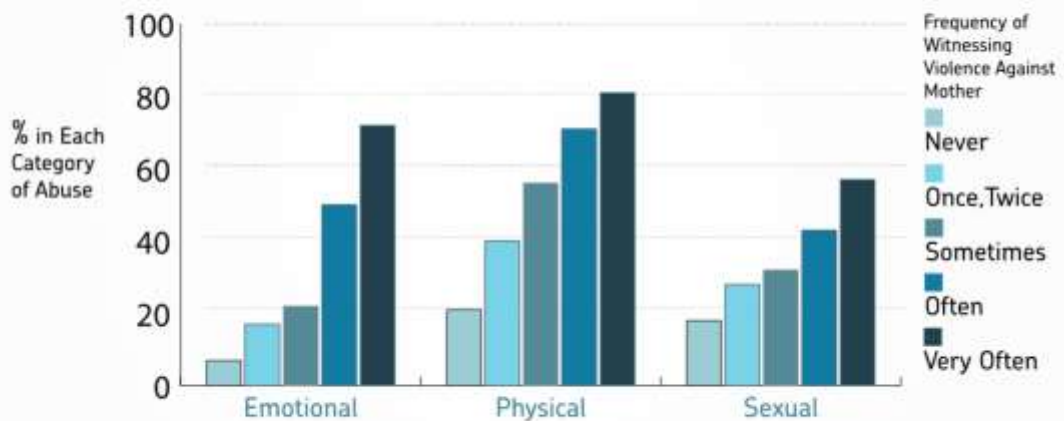


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ACEs are highly interrelated. When there was 1 ACE in the life of a child, 87% of the time at least one of the other 9 ACEs also occurred.

The fact that the 10 different categories of ACEs tend to cluster called for a new way of looking at how ACEs might affect health and social well-being. We'll learn more about this in the next slide.

Witnessing Domestic Violence and the Risk of Childhood Abuse



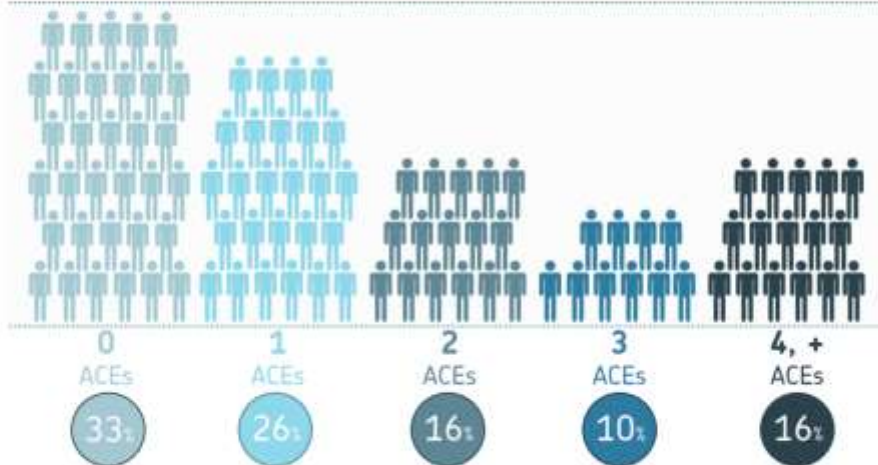
ACE Interface © 2015

ACEs usually do not occur in isolation. For example, Emotional, physical, and sexual abuse are each highly related to being exposed to intimate partner violence. In the first cluster of bars on the left, the height of the bars is the percent of people who had experienced emotional abuse.

As the frequency of witnessing intimate partner violence increases from never, to once or twice, sometimes, often, or very often the risk of emotional abuse increases dramatically.

The same pattern is seen for physical abuse in the middle set of bars and for sexual abuse in the last set of bars. This means that where there is domestic violence—specifically violence against mothers -- that the risk of childhood abuse increases dramatically.

ACE Score = Number of ACE Categories



ACE Scores Reliably Predict Challenges During the Life Course

ACE Interface © 2015

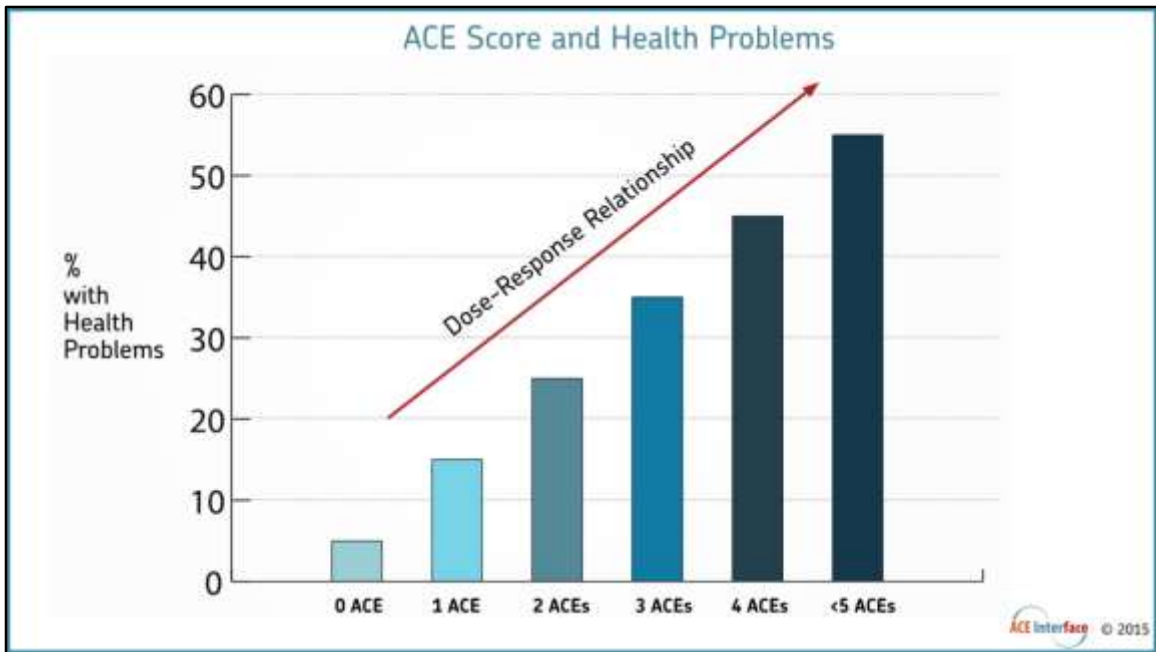
Because adverse childhood experiences are so highly interrelated it did not make sense to look at how single categories of ACEs influenced health and social problems. Instead Drs. Anda and Felitti developed an ACE Score.

This score is simply a count of the number of categories of ACEs that each person reported -- from 0 to 10. Each category counts as 1 point in the ACE Score. So, if a person experienced physical abuse, no matter how many times, or what the severity of the abuse, the ACE Score is 1; if the person experienced physical abuse and had a substance abusing parent, the ACE Score is 2, and so forth.

Think of the ACE Score as a measure of the childhood “biologic stress dose”. As the ACE Score goes up—on average the exposure to the developmental effects of toxic stress increases.

In this illustration you see that only a third of people in the Study had an ACE Score of zero. 16% had scores of 4 or more.

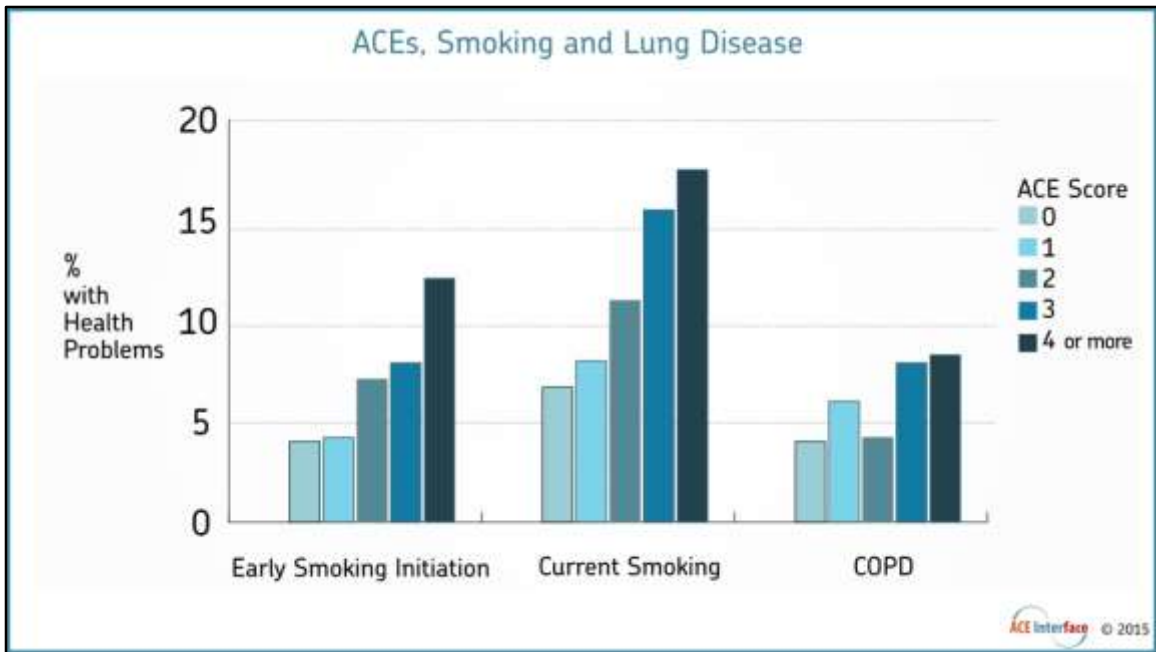
Adverse Childhood Experiences are common; and they tend to cluster. ACEs are a hidden burden in the study population.



People who report higher ACE scores are more likely to have health and social problems – in fact, as the ACE Score goes up the percentage of people with health and social problems also goes up.

We call this a dose-response relationship. You know dose-response; the more gas you put into your car, the more miles you can drive.

In this case, where there is a higher dose of Adverse Childhood Experiences, the higher the percent of people with health problems.



All of the data slides from the ACE Study that I'll show you today are formatted in this same way. Along the bottom – horizontal axis – are the ACE scores, from zero on the left to 4 or more on the right. The vertical axis is the percent of people who have the disease or condition.

So, in this first set of bars -- on the far left, we see that the percent of people who became regular cigarette smokers by age 12 goes up as each level of the ACE Score goes up.

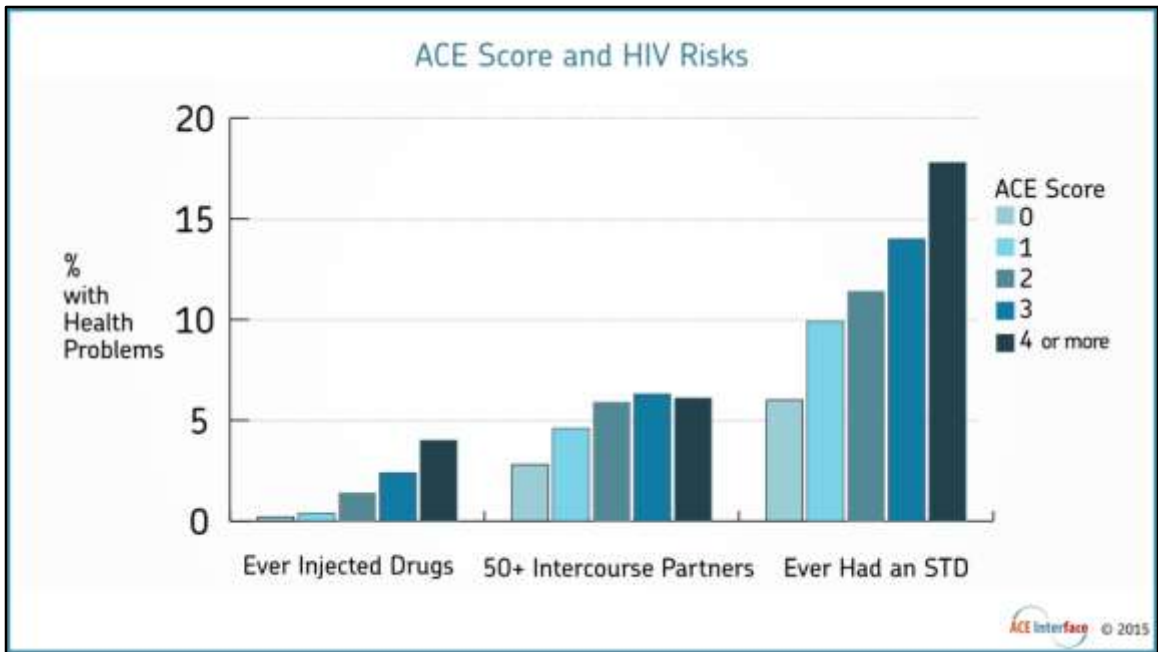
In the second set of bars, we see the percent who were smokers as adults also goes up in a stepwise fashion as the Score goes from 0 to 4 or more.

People with higher ACE scores have increased risk of chronic obstructive pulmonary disease, or COPD. About 4% of people with an ACE score of zero developed COPD; while more than double that percent of people - about 9% - with an ACE score of 4 or more developed COPD.

ACEs lead to early onset of smoking, which is sustained throughout adulthood and eventually leads to a high risk of smoking-related lung disease.



ACEs can result in depression and anxiety. Nicotine can reduce symptoms of depression and anxiety; so the benefits of nicotine in reducing these unpleasant emotions-might help to explain why knowledge of health risks due to smoking are not enough for some people to quit.



Now we'll look at risk factors for infection with HIV—the virus that causes AIDS.

We see the same dose-response relationship between ACE score and risk factors for HIV infection that we saw when we looked at smoking and lung disease. For injected drug use the risk increases dramatically from ACE Score 0 to a Score of 4 or more; the risk of injected drug use is 40 times higher for ACE Scores of 4 or more compared to ACE Scores of 0!

Similarly, the risk of having 50 or more lifetime intercourse partners goes up as the ACE Score goes up, as does the risk of ever having a sexually transmitted disease (STD).



Let's stop here for a moment.

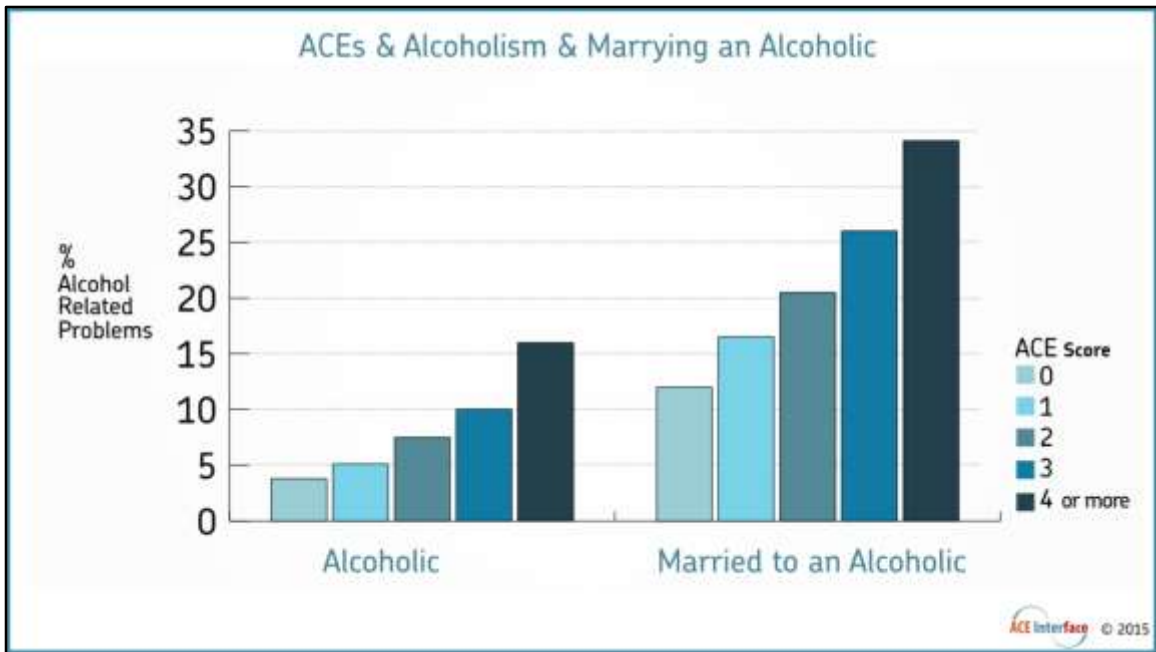
Why would 12 year olds be more likely to smoke if they have higher ACE Scores? What does it **feel like** to be a 12 year old with a high ACE Score?

The effect of ACEs on the developing brain leads to a higher likelihood of feeling depressed, anxious, or having difficulty concentrating. It turns out that nicotine—which is efficiently delivered through inhaling cigarette smoke—can reduce anxiety, feelings of depression, and can improve concentration. So is it any wonder that kids with high ACE Scores are more likely to smoke? For them smoking may simply be self-medication with a non-prescription drug.

Similarly, injecting IV drugs can be a way to cope with the feelings and circumstances that are a consequence of higher and higher ACE exposure on brain structure and function.

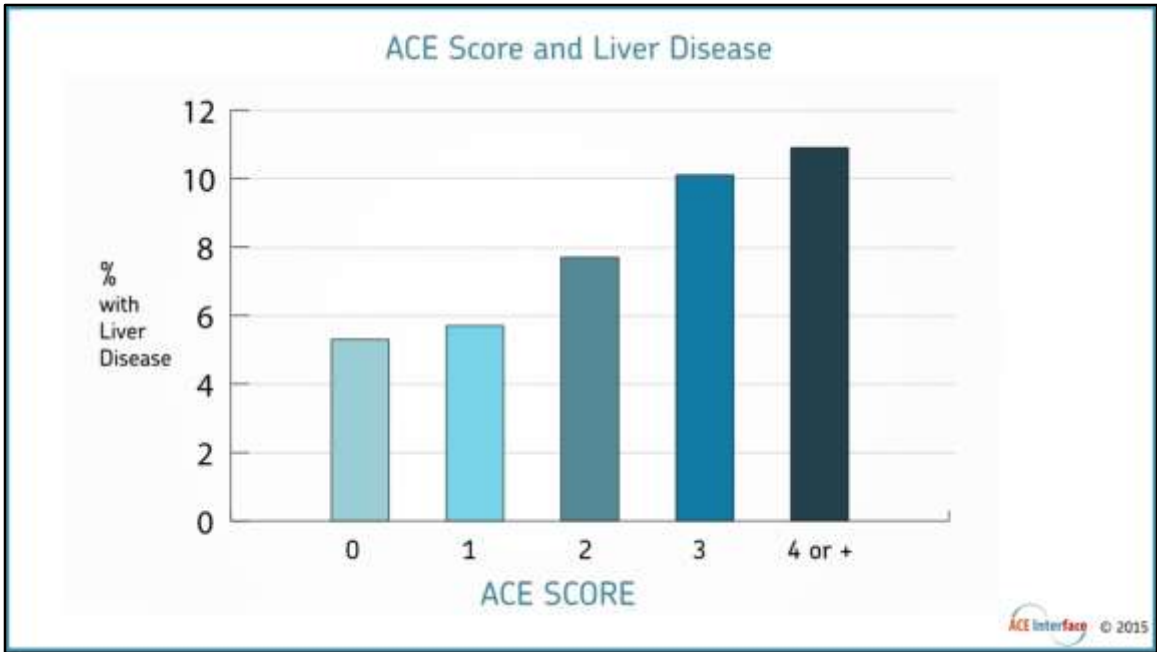
So this concept of adaptive behaviors—even those with known negative consequences-- in the face of the effects of ACEs leads us to the idea of trauma informed care. This idea changes the question from “what’s wrong with you?” to “what happened to you?”

This way of asking people about problems related to ACEs reduces blame and shame and leads to a more compassionate and kind of interaction.

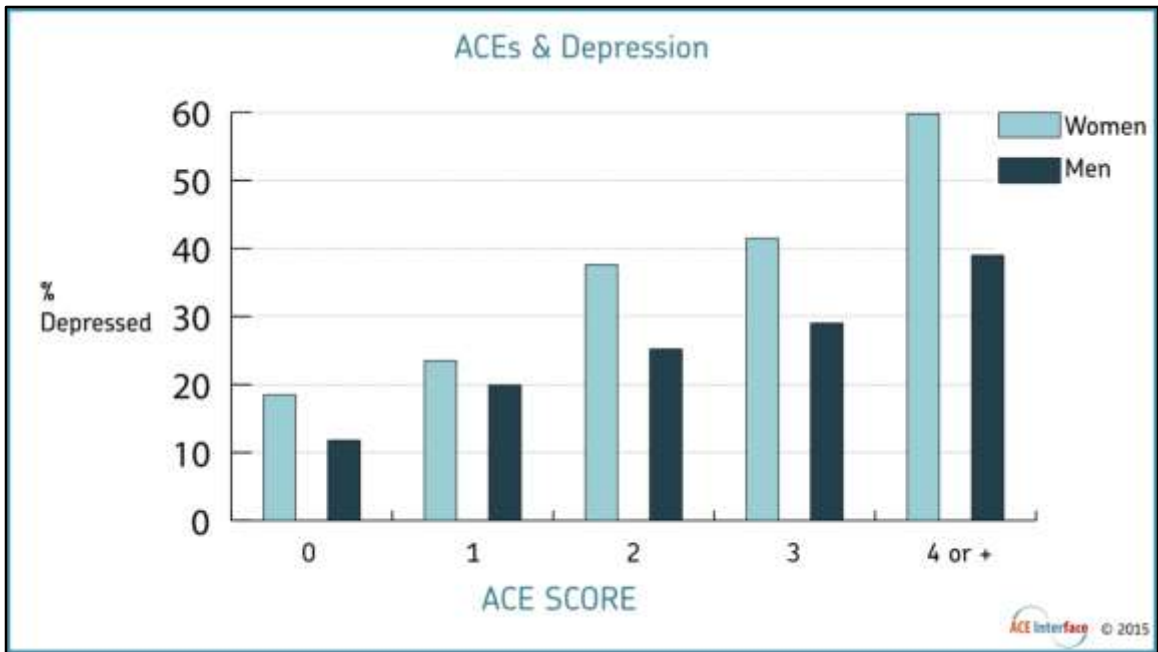


Now we can begin to anticipate why ACEs are related to certain behaviors and social conditions. Here we see the risk of becoming an alcoholic increases six-fold from an ACE Score of zero to a score of 6.

And ACEs affect relationships---people with higher ACE Scores are more likely to marry an alcoholic. Think for a minute about these indicate how ACEs tend to be transmitted from one generation to the next.



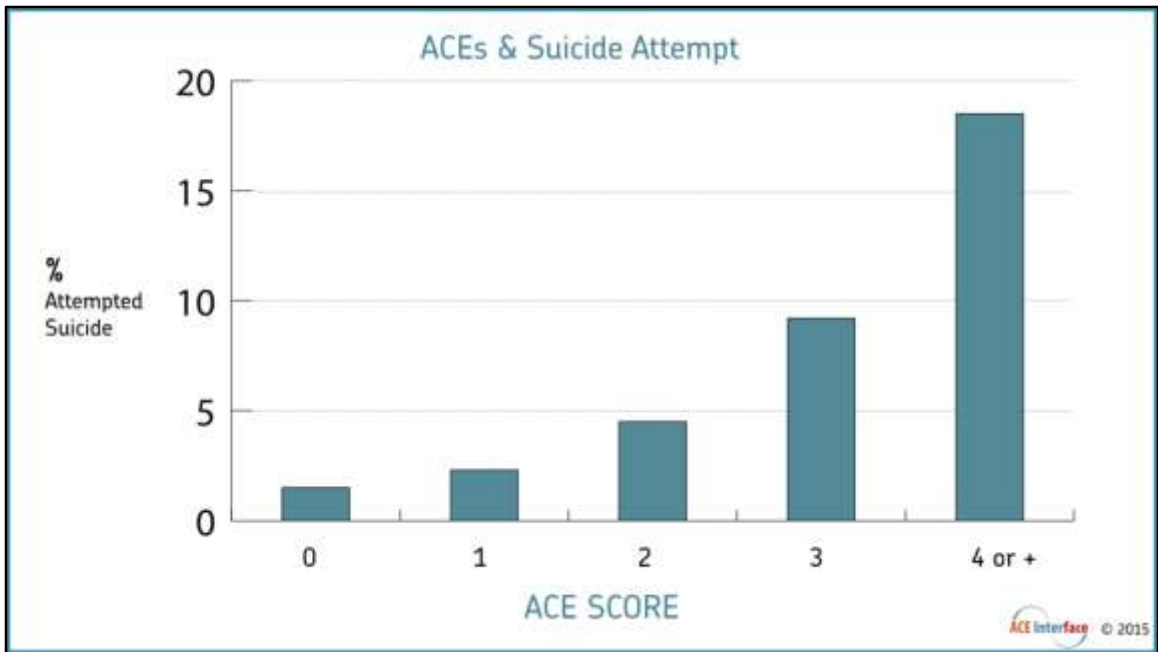
The risk of liver disease—hepatitis or jaundice—goes up along with the ACE Score. This makes sense because the risk factors for liver disease include shooting up drugs with needles and syringes contaminated with hepatitis virus, or having intercourse with a person infected with the virus, or consuming large quantities of alcohol.



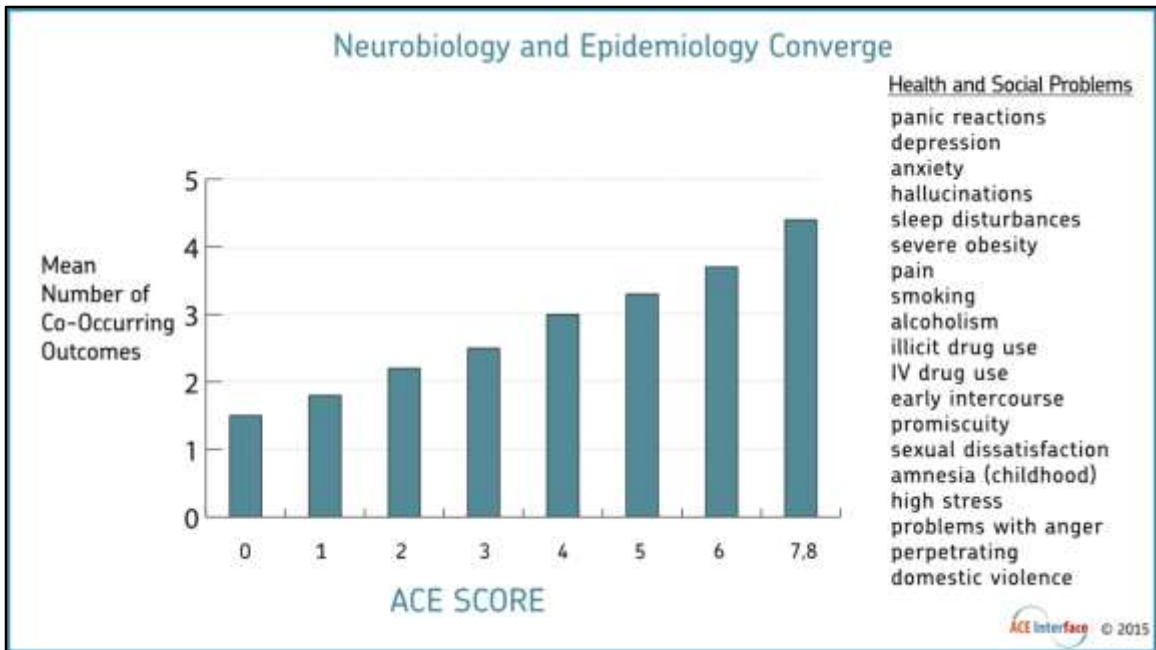
Depression is the leading cause of disability in developed countries.

Here we see that the risk of depression increases for both men and women in a “dose-response” fashion as the ACE Score goes up.

ACEs are held in the body, leading to mental, physical, behavioral health problems in adulthood. Some of those problems are unintentionally handed to the next generation. Becoming an alcoholic, marrying an alcoholic, and suffering from depression are a part of the intergenerational transmission of Adverse Childhood Experiences.



One of the strongest relationships seen in the ACE Study is between ACEs and the risk of suicide attempts. People with an ACE Score of 4 have almost 20 times the risk of suicide attempts as people with an ACE Score of 0.



We've looked at how the chances of having risk factors and health and social problems increase as the ACE Score goes up. But we've looked at these problems one at a time. The ACE researchers learned that Adverse Childhood Experience can affect multiple brain systems and functions. So they wondered if higher ACE Scores would lead to the risk of having multiple health and social problems.

On the right side of the slide you'll see a list of 18 health and social problems that could be affected, given the brain systems and functions known to be impacted by toxic stress. The researchers created a second score---that's average number of health and social problems in the health records of study participants.

In this slide we see that the mean number of the 18 listed health and social problems increases as the ACE Score goes up. So, for an ACE Score of Zero people averaged about one and one-half of those 18 problems; at ACE Scores of 7-8 they averaged 4 and one-half of them. This told the ACE Study Team that higher ACE Scores meant that the chances of having multiple health and social problems are increased.

Both cost and the complexity of problems is affected by adverse childhood experiences.

EXAMPLES OF ACE-ATTRIBUTABLE PROBLEMS

Alcoholism & Alcohol Abuse

Chronic Obstructive
Pulmonary Disease

Coronary Heart Disease

Depression

Drug Abuse & Illicit Drug Use

Fetal Death

Intimate Partner Violence

Liver Disease

Mental Health Problems

Obesity

Sexual Behavior Problems

Smoking

Unintended Pregnancy

Violence

Workplace Problems

Here is a list of some of the health and social problems documented by ACE Study publications. Because ACEs have a powerful impact on many health and social problems, the ACE researchers concluded that ACEs are the leading cause of health and social problems in our nation. And this should lead to thinking about prevention.

We are living in a time with stunning potential for shifting the trajectory of health and wellbeing for generations to come.

the WAY you spend YOUR day?

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

ACE interface © 2015

(Compassion Exercise)

Let's start with an activity. You will need a paper and a pencil or pen.

Take one minute and *brainstorm a quick list of the most important activities in your daily life.* For example, job, taking kids to school, or mowing the lawn.

After one minute ask participants to share their answers with the person next to them.

CLICK to advance the slide—several red X's will appear.

the WAY you spend YOUR day?						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	X	3	4	5	6	7
8		9	10	11	12	13
14		15			X	16
17		18		19	20	21
22						X
23		24		25	26	27
			X			28
29		30				
	X	31				

ACE interface © 2015

Ask participants to answer: What would you have to give up if you lost a few days each month to: sickness, chronic pain, depression OR a major life challenge. This is a tough question, but just take ONE MINUTE and cross things off the list you just made. What would you give up if you just could NOT do it all?

After one minute, ask participants to compare choices with the person next to them.

CLICK TO ADVANCE SLIDE. Many red Xs will appear.

the WAY you spend YOUR day?						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
X	X		X			X
		X		X	X	
X		X	X			X
X	X		X		X	X
	X					

ACE Interface © 2015

I'm going to make this a little tougher now. As you can see, you're losing more days.

Take 3 minutes with the person next to you and answer this question: What would change about your job, your relationships or your home life if you lost MANY DAYS EACH MONTH to sickness, chronic pain, depression or a life challenge?

After the 3 minutes, give a few minutes for people to call out some examples from their conversation. Be sure to repeat what individuals say so that the whole room can hear.

CONTINUE: We are going to do one more round of thinking about this. (CLICK TO ADVANCE SLIDE HERE)

the WAY you spend YOUR day?						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X					

ACE interface © 2015

Imagine for a moment that sickness, chronic pain, depression or some other life challenge interrupted your daily life EVERY DAY OF THE MONTH. Give 30-60 seconds of silence for people to reflect.

CONTINUE: Please turn to 2 or 3 other people around you and talk about WHAT HELP YOU WOULD NEED if your life was interrupted every day. Give 5 minutes.

Bring whole group back together, give a couple of minutes to call out answers.

How might we, as a society, provide the kinds of support to our neighbors, family members or friends... that will allow them to participate in the community and family life... even if they are struggling with health and other ACE-related challenges?



Since the publication of articles from the *original* ACE Study, some states have gathered information about ACEs in their state survey of health. They have been able to learn some things that we couldn't learn from the original study. And what they have learned is astonishing.

The higher the ACE score, the more likely that people have experienced adult homelessness, unemployment, poverty, disability, learning problems, incarceration and more.

Pathways to Poverty and Homelessness



Early trauma and stress leads to predictable patterns of development. We don't know what all those patterns are, but we know quite a lot. We know that there are cognitive, attentional and social outcomes that emerge.

Children who experienced adversity may have slowed language development or diminished, which can lead to special education, school failure and ultimately, dropping out. Children with attention problems, especially if they are undiagnosed and untreated not only experience academic failure, but are at risk of behavior problems that result in suspension and expulsion, which in turn are correlated with delinquency, dropping out, and entry into the juvenile justice system.

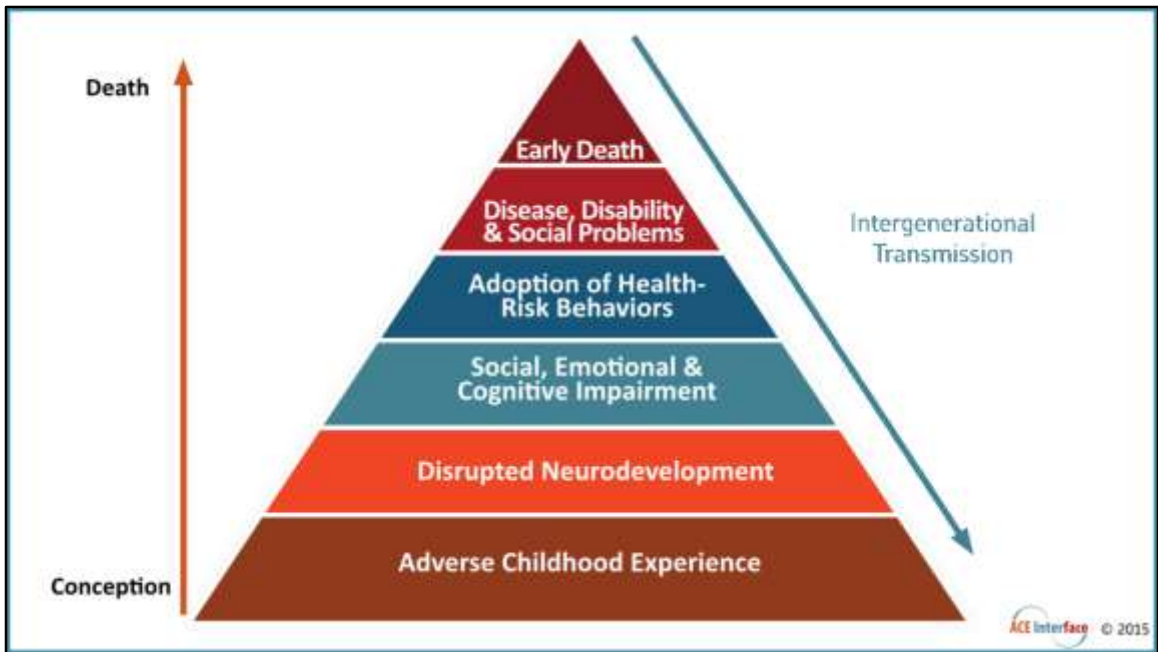
Children also experience social failure and behavior problems that involve tantrums, aggression, and outbursts. This creates a fast track to trouble at school, suspension, aggression and delinquency.

In addition, these kids are at serious risk of early and chronic alcohol, tobacco and drug use.

Interestingly, the newest nicotine studies suggest that early smoking inhibits the development of pre-frontal lobes, which creates risk for impulsive and extreme behavior in late adolescence.

This combination is a fast track to poor life outcomes. And the epidemiological evidence tells us it's also the fast track to poor adult mental and physical health. Achieving economic well-being is certainly against the odds.

Now we have to acknowledge that not every victim of adverse childhood experiences will have this life path. The numbers tell us that at least half of the people in this room experienced adverse childhood experience, and yet here we are, making a contribution.



We've see how ACEs effect health throughout the life course... from conception to early mortality. And we've also seen how people exposed to ACEs tend to develop the same behaviors and health and social problems that become ACEs for the next generation.

That's why we now show the arrow on the right side of the pyramid to emphasize the need to disrupt their intergenerational transmission.

ACEs are Common, Interrelated, Powerful



High ACE Scores
in Population



Increased Risk of Multiple
Health and Social Problems

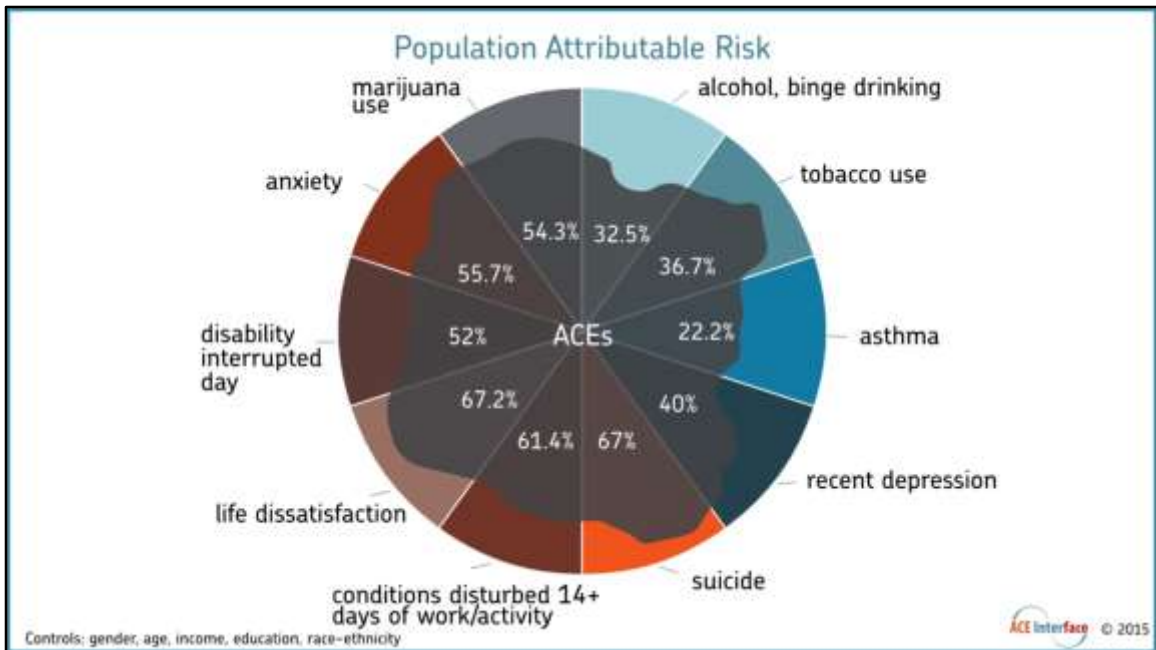


Intergenerational
Transmission of ACEs

ACEs are Common. ACEs are highly interrelated. ACEs have a cumulative impact that is captured by the ACE Score.

And... People with higher ACE Scores are more likely to have multiple health and social problems, some of which increase the odds of their children having high ACE scores.

The discoveries about the effects of toxic stress on the developing brain provide biologic plausibility for the ACE Study findings. So, this information makes a strong case for concluding that the relationship between the ACE Score and health problems is a “cause and effect” relationship.



So how do we put this all together to make a case for understanding ACEs as powerful pathway to health and wellbeing?

Now we understand that ACEs are common and have a strong cumulative impact on the risk of common health and social problems. Preventing ACEs and their intergenerational transmission is the greatest opportunity for improving the well-being of human populations. In fact, the ACE Study team and ACE Interface believe this is the greatest opportunity of our time... perhaps of all time.

This slide shows the percentage of various health and social problems that epidemiologists estimate are caused by ACEs. The calculation that is commonly used to do this in public health studies is called Population Attributable Risk; this is displayed as a percentage as an “oil spill” on this slide. The percentage of a problem coated by the oil spill represents the percentage of each problem that is potentially preventable by preventing ACEs.

The percentages are quite large. In fact the high percentages on this chart are rarely seen in public health studies.

The cumulative effects of ACEs reflect a powerful opportunity for prevention – no matter if you are working to prevent heart disease or cancer, end homelessness or hopelessness, or improve business profitability – as we align a portion of our work around a common goal of preventing the accumulation of ACEs and moderating their effects, we will reduce all of these problems, and many others, all at once!



Our culture has built separate systems and ways of thinking about health and social problems. This way of doing business in society is sometimes called a “siloed” approach. Each silo has its own budget, training, and mental model about preventing and treating the individual types of problems that is there focus.

The ACE Study and the knowledge about their effects on brain structure and function now show us that viewing health and social problems as separate issues is an illusion—and illusion based upon outdated mental models. Now we know that many common health and social problems have a common cause based upon the powerful impact of ACEs throughout the life course.

We used to talk about breaking down silos. But, that’s not practical because human nature and organizational behavior is such that the budgets and priorities in siloed systems are too well defended – the good news is that none of us has to stop working on the issues we are passionate about. If we simply add a thread to our work that is focused on preventing accumulation of ACEs, that common thread will connect and align all of our work in powerful ways.



The ACE study provides us with straight-forward information about the consequences of toxic stress during childhood.

This scientific research gives us powerful information we can use every day to improve health, safety, prosperity and longevity. But the ACE study isn't a detailed roadmap of services or programs; it is an invitation for us to be pioneers.

This news is simply too important to wait for someone else to design a detailed roadmap.

Through our collective knowledge and action, we are the ones with the power to shift the dynamics within our own families, communities and society that lead to high ACE scores.

Core Protective Systems

Capabilities

Attachment
&
Belonging

Community
Culture
Spirituality

“Nurturing the healthy development of these protective systems affords the most important preparation or ‘inoculation’ for overcoming potential threats and adversities in human development. Similarly, damage or destruction of these systems has dire consequences for the positive adaptive capacity of individuals.”

Ann Masten, 2009

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When people hear about the ACE Study findings, they often ask about resilience.

People get excited about the notion of resilience, in part because it reminds us that our supportive actions matter. Our desire for resilience leads naturally to a search for ways to help families and communities.

Three protective systems interact and guide positive adaptation. These powerful systems are individual capabilities, attachment and belonging with caring and competent people, and protective community, faith, and cultural processes.

What do we know about individuals who do well despite adversity? We know that the three protective systems are nested: people do best when they are living in thriving families and communities. We can help one another to develop personal attributes that help us all weather life’s storms. Personal attributes like positive view of one’s life, self-efficacy and self-regulation are all discussed at length in the resilience literature.

Individual Capabilities



Positive

view lets me know I am
important and valuable

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Positive view lets me know I am important and valuable; it helps me to ask for help when I need it. Positive view is closely related to hope - together they help me not to give up. Positive view is also about the story we tell ourselves that says “good things happen to me”. When we notice the core gifts of each person and help them find opportunities to give those gifts to a community they care about, we are helping to generate positive view and hope. People with positive view, hope and social/emotional support are more likely to complete at least one year of post-high school education, less likely to be depressed, and more likely to be employed... even in this deep recession.

Self-efficacy is the belief that what I do influences what happens to me. Simple things do help build self-efficacy, like asking people to do tasks or chores that have real value for the family or community, and encouraging a person to build skills that are complex and take time to develop.

Self-regulation is our ability to gauge our state of mind and emotions, and to keep these under control while we navigate a social situation. When we can’t—or don’t--read the situation and adapt our behavior to it, the social aspects of life become more difficult. There are a number of strategies for practicing self-regulation. Depending on the cultural environment, these might include belly breathing, mindfulness, prayer, movement, biofeedback and other calming practices.

While there certainly are individual capabilities that are associated with recovery and resilience, these are often the very same capabilities that do not develop well when experiencing toxic stress. Believing that people could just try harder to be what their biologic adaptations keeps them from being is a circular logic that’s not helpful.

Self-Efficacy



Words from individual capabilities slide: Self-efficacy is the belief that what I do influences what happens to me. Simple things do help build self-efficacy, like asking people to do tasks or chores that have real value for the family or community, and encouraging a person to build skills that are complex and take time to develop.

Small group discussion – what do you do in your care giving that helps build self-efficacy for Infants, toddlers, preschools, school agers, parents?



From Individual capabilities slide: Self-regulation is our ability to gauge our state of mind and emotions, and to keep these under control while we navigate a social situation. When we can't—or don't--read the situation and adapt our behavior to it, the social aspects of life become more difficult. There are a number of strategies for practicing self-regulation. Depending on the cultural environment, these might include belly breathing, mindfulness, prayer, movement, biofeedback and other calming practices.

Small group discussion: What do they do to self-regulate themselves?

Attachment & Belonging

RELATIONSHIPS
with caring and competent
people are
—VITAL—
contributors to
resilience & recovery



The second protective system we can nurture is belonging. Many people talk about the importance of people in their lives – people who recognize and encourage our unique talents, interests and strengths.

Relationships with caring and competent people are vital contributors to resilience and recovery. Sometimes this message gets shortened and only includes caring relationships, but competency requires learning new skills and practicing safety in all of its forms when relating to people who are hard-wired for survival in a dangerous or unpredictable world. People who have difficulty with emotional regulation, picking up social cues, problems with addiction and family bonds, and other consequences of developmental trauma, can be challenging friends and neighbors.

Relationships that provide security and belonging will become the norm as we learn and improve our skills and competencies to be relevant and helpful during times of stress and challenge as well as during celebration and rest.



If we've decided to dramatically improve health and safety for this and future generations, we must foster thriving communities. Fostering thriving communities is about empowerment – it's about investing in the people who have the most at stake so they can be the expert leaders of their own community's change. As we invest in community capacity, we can systematically providing education about neurobiology, ACEs and resilience so local people have a common language for cross-sector and multi-disciplinary work.

Building community capacity is about helping people learn, manage and improve their efforts systematically, and about providing flexible funding, state of the art education, and direct supports that help mobilize everyone who wants to help. Public and private partners that foster thriving communities learn from those communities and celebrate exceptional results from their work.

To learn more about capacity building processes, we look to communities that have changed the way people work together to solve tough problems, and had stunning success. Success doesn't happen overnight, it's a journey that intentionally builds new capacities and supports healing and prevention.



Each successful community has traveled that journey differently – because each community is unique. But communities that have reduced major social problems, reduced the percent of young people with high ACE scores, and improved key factors for resilience do use similar processes for achieving better results. They use these processes to work over time to build new capacities for helping one another to thrive and new capacities for aligning resources and systems so they achieve better results.

In Washington State, a system of Community Public Health and Safety Networks call these communities “high capacity communities”. The process they have used since 1994 is called general community capacity development. It’s a public health approach to solving interrelated problems by improving peoples’ connections, their shared responsibility, and the collective impact of their efforts.

Community Capacity Development puts into place a four-phased iterative process to nurture development of healthy and productive adults regardless of the circumstances into which they are born. It is an approach that invites all members of the community to shift the ways we engage with one another on a day to day basis, improving peoples’ connections, shared responsibility, skills and efficacy.

This approach increases the collective impact of services and neighborhood initiatives by aligning efforts around common purpose. The four phases in the process are: leadership expansion, coming together around issues of importance to the community, learning together, and results-based decision making. The process is powerful because success in one phase propels success in the next. It generates a virtuous cycle with the power to improve population health, and uses all the resources in a community including its “people power”.



Leadership Expansion

Where will **YOU** lead us



ACE interface © 2015

What does leadership expansion really mean? High capacity communities consider everyone who wants to help as a leader, and open opportunities for people to contribute their gifts and talents to commonly held goals.

Diverse perspectives enrich solutions and enhance resources available for community improvement. Even something as simple as offering thoughts about how to keep children safe and healthy is an important form of leadership that fuels capacity building.

Leadership Expansion: Children's Resilience Initiative



<http://resiliencetrumpsaces.org/>

ACE Interface © 2015

One example of a community that has been using the Community Capacity Development Model for over decade and making huge strides in both problem reduction and leadership expansion is Walla Walla, Washington. The coordinating network has engaged in service program improvement, community engagement and system change.

After establishing various service organizations to address specific problems, community leaders realized that one of the community's greatest strengths is its people. The community decided that neighboring is a verb, and commenced a neighboring revolution. During each ACE-informed process inviting new members and introducing different sectors of the community to each another has been critical.

In 2010 the Walla Walla Community Network invited Dr. Anda to speak to community residents. Annett Ridenour listened. She calculated that she had an ACE score of 10. With this new awareness Annett declared, "Something happened." She spoke up about the hardship in her life and the new perspective the ACE Study provided her. The community listened just as intently to Annett as they had to Dr. Anda. They included Annette in planning and decision making.

Annett acknowledged that previously she had just been "going through the motions" and now "I'm in the middle of it, I'm involved. You know the saying 'It takes a village to raise a child? It's my favorite saying in the world; because my village came together.'" Today Annette is the lead parent representative to the Children's Resilience Initiative in Walla Walla. You can learn about their work at the Children's Resilience Initiative website.



The second phase of capacity development process is coming together around issues that matter. People have an instinctive need to be together. When we are together, we can find one another's strengths and act upon them.

Conversations that matter to community members build social networks – an important factor for resilience. Conversation, sharing perspectives, looking at data are all activities that help people to gain a common view of how people in the community are faring in their lives.

When people come together and discuss issues like Adverse Childhood Experience, emotions like grief, longing, and hope may surface. So, it is especially important for community leaders to design events for safety in all of its forms.

In Washington, the Family Policy Council sponsored education programs and events and provided assistance to communities to support this phase of capacity development. Systematic investments over more than a decade built cultural expectations that people would gather together to dialogue about issues of significance to the people. The Family Policy Council hosted a train-the-trainer program to support group learning about emergent scientific discovery. The strategy was effective in attracting an ever enlarging circle of youth and adults who are committed to dramatically improving the future of the public's health.

Coming Together: Sanctuary Model



www.sanctuaryweb.com

ACE Interface © 2015

Sandra Bloom is co-developer of the Sanctuary Model for trauma-informed care. The Sanctuary Model is a holistic approach to improving both context and personal wellbeing. As community leaders are designing processes of bringing people together, we can use Dr. Bloom's wisdom to guide our work.

For any of us to thrive and grow, we must experience safety. Many people who have been the victims of violence or abuse are keenly attuned to any and all threats in the environment – even small threats can be perceived as crisis. In developing the Sanctuary Model, she learned to intentionally attend to four interrelated dimensions of safety: physical, psychological, social and moral safety.

Physical safety means being free of any and all threats to our physical self. Psychological safety is the ability to be safe with oneself; to rely on one's own ability to self-protect against any destructive impulses coming from within oneself or deriving from other people and to keep oneself out of harm's way. Social safety means feeling safe with other people.

Moral Safety is being free from moral distress - which means being in situations where you know what the right thing to do is, but doing it is thwarted by constraints. A morally safe environment engages in an ongoing struggle with the issues of honesty and integrity and welcomes questioning – are we helping or hurting?

While the Sanctuary Model was developed for a therapeutic environment, communities can foster these four dimensions of safety in the way they bring people together, structure interaction, model fundamental respect for each person, and intentionally overcome constraints in order to do the right thing.



The third phase of the capacity development process is shared learning, as we are doing today. It's especially valuable to develop a common language and concepts, like the language and concepts of Adverse Childhood Experiences. Learning together naturally leads to people sharing and generating opportunities to help one another or combine resources to achieve commonly held goals. Something as simple as one person needing a book in order to complete a class, and another person lending that book, can be an important opportunity.

Larger exchanges take place in Community Capacity Development, but the small exchanges establish the norm of offering to help.

When we share perspectives, cultural differences, common values, or simple interest in one another, we naturally build hope and a sense of shared identity and belonging. It becomes easier for us to ask for and receive help. It becomes easier for us to notice how we can help others. Families become more stable when there is reciprocity – the give-and-receive flow of interaction that benefits all.

In high capacity communities, emotional support, practical help, and assurances of safety are given and received in the flow of community life.

The Washington Family Policy Council successfully used this approach to develop a common language and understanding of scientific facts. This language and understanding enabled people from different disciplines to develop innovative solutions and a collective approach to health improvement. Learning occurs at the individual level, and also at the organizational and community levels. As learning together becomes a norm, programs and policies become more responsive to the needs, strengths and values of local people.

Shared Learning: Public Health Process



www.jeffersoncountypublichealth.org/index.php?family-health-services

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As a result of the community capacity development principles we are describing here, health professionals gained the knowledge and community support to integrate ACE science into their practice. The Family Policy Council Community Network in Jefferson County worked with local public health to integrate ACE science into public health practice.

People have a right to know about the most powerful determinant of the public's health. That's what the public health department director in Jefferson County thought when she changed the intake process for every person the department serves.

Some people thought that it would be hard to talk with people about ACEs, but she thought "if public health nurses can talk to people about condoms and sexually transmitted disease, they can certainly talk to people about ACEs". Some people thought that talking about ACEs would take more time from other services, but it turned out that talking about ACEs didn't take more time – it just improved the match between a person and the service that would help. People thought that talking about ACEs might trigger trauma and be too hard.

But, talking about ACEs didn't trigger trauma. In fact, people felt that finally someone was asking about the truth of their lives in a kind and respectful way. Parents understood for the first time that they are the most powerful people in the world for reducing the ACE scores of their children. And, now that they understood the effects of ACEs in their own lives, they made a deeper commitment to preventing ACEs for their children.



The fourth phase of the Community Capacity Development process includes making decisions about next steps based on the results of our past strategies and actions; and, based on the future we want to create for our children, grandchildren, and future generations.

Results-based decision making can be challenging because people naturally are proud of what they have been doing. In high capacity communities, there is no blame or failure – only opportunities for improving upon our past successes. We are looking for ways to employ new knowledge and include a wider array of people and other resources to help the community to thrive.

As people make decisions together and experience community improvements, they develop a sense of belonging and shared identity that brings them back together for a next cycle of capacity development.

The results at Lincoln Alternative High School in Walla Walla Washington are an example of the kind of change that occurs when people are making results-oriented decisions. But that success did not occur in a vacuum. It happened in the context of the community regularly coming together to ask themselves “how are the children”? When the answer to that question fell short of community aspirations, people committed to one another to shift the way they relate to clients, customers, employees, and neighbors in order to improve life in Walla Walla.



Imagine the powerful prevention strategies we could employ if we could clearly see the cascade of factors that shape life-course.

One systems change expert, named Julie Grevstad, charted an important part of that picture in Pierce County, Washington. She used risk assessment data from youth served by the juvenile court to learn that high ACE scores, early suspension, early academic failure are a highly predictive pathway to incarceration for youth. Once the data revealed such a clear picture, she was able to convene a different kind of community conversation.

If children are not safe at home and not safe or successful at school; why are we surprised when they knock at the door of the court? With that picture, school personnel and neighborhood residents understood their juvenile crime prevention roles differently. The adults now hold themselves accountable to intentionally and systematically generate safe and welcoming social and academic environments that don't exclude children who have experienced traumas.

This approach led to changes in the Pierce County juvenile justice system and reduced recidivism among youth served by the court. Because the Pierce County work was a part of the state-wide system of Community Networks, and Networks that were providing community-based education about ACEs to judges, probation officers, prosecutors, attorneys, and the general public, findings from Ms. Grevstad's work have informed improvements in the justice and education systems in many communities across the state.

Cultural Respect and Continuity is Vital

Reclaiming cultural ways after a time of loss is a powerful driver of well-being. "One of the first things that has to be done is to ask the community what is important to the community."

Duran & Duran, 1995



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When communities engage in capacity building, they dig deep into the human experiences that have shaped their past and influence the present.

From generation to generation people pass their history of experience, including its rich heritage, language and traditions and also its experience of historic trauma, slavery, racism or injustice. While the ACE study didn't measure historic trauma like slavery or children being taken from their parents and forced to deny their culture and language in boarding school, neurobiology research would suggest that these and other traumatic experiences that elevate stress hormones for long periods of time during child development would have enduring effects.

For every trauma history, there is also a survival history – a history of resilience. Cultural continuity, including reclaiming cultural ways after a time of loss, is a powerful driver of well-being. Drs. Bonnie and Eduardo Duran advise that "One of the first things that has to be done is to ask the community what is important to the community."

Linda Thhiwai Smith, of the University of Waikato agrees. "Communities are the ones who know the answers to their own problems... Visits to communities which have developed their own programmes demonstrate both the creativity alive and well at the community level and the strength of commitment shown when the programme is owned by the community."

In their study about the effects of cultural continuity in Canada's First Nations, Michael Chandler and Christopher Lalonde found that self-government, land claims, education, health services, cultural facilities and having Tribally controlled police and fire significantly reduced the relative risk of suicide among youth. The right to self-govern reduced relative risk of youth suicide by 85%, while cultural continuity in education reduced relative risk by 52%!



Supporting healthy community processes that respect cultural traditions and values, is a high leverage activity. Just as a rising tide lifts all boats, a high capacity community lifts all beings. People living in high capacity communities are less likely to have high Adverse Childhood Experience scores, less drug and alcohol abuse, less depression and serious and persistent mental illness, and fewer problems in school and at work.

CHANGE is up to US



It is shaped by our thoughts, our conversations, the way we relate with one another in relationships, in families, and in communities.

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There's a predictable pattern to transformative change. It begins with discovery and communication, which leads people to clarify their values and thinking. With new knowledge and new habits of thinking, people change the actions they take in every-day life.

The collective actions of many people shape a new reality that is ratified in organizational and policy change. The truth is that people create a new reality long before new laws are passed!

Change is up to us –It is shaped by our thoughts, our conversations, the way we relate with one another in relationships, in families, and in communities.



As we work to prevent accumulation of ACEs, – Let’s keep in mind that we don’t have to get to ACE Scores of zero – bringing scores down any amount will have huge effects.

We might not be able to prevent a first ACE from occurring in a family. But we certainly can notice when children have five ACEs and make sure that number doesn’t go to ten!

As we thread through all of our work a new focus of supporting adults – particularly adults who, through no fault of their own, experienced many ACEs when they were children – we will prevent ACEs for the next generation.

We live at a time of great hope and promise. The largest public health discovery of our time – perhaps of all time – is about family, community, children – it’s about us. Our action to prevent ACEs – whether large or small – can profoundly improve our future.

Thank you.