

Please make sure to complete the sign in sheet at the back of the room.



Understanding

N. E. A. R.

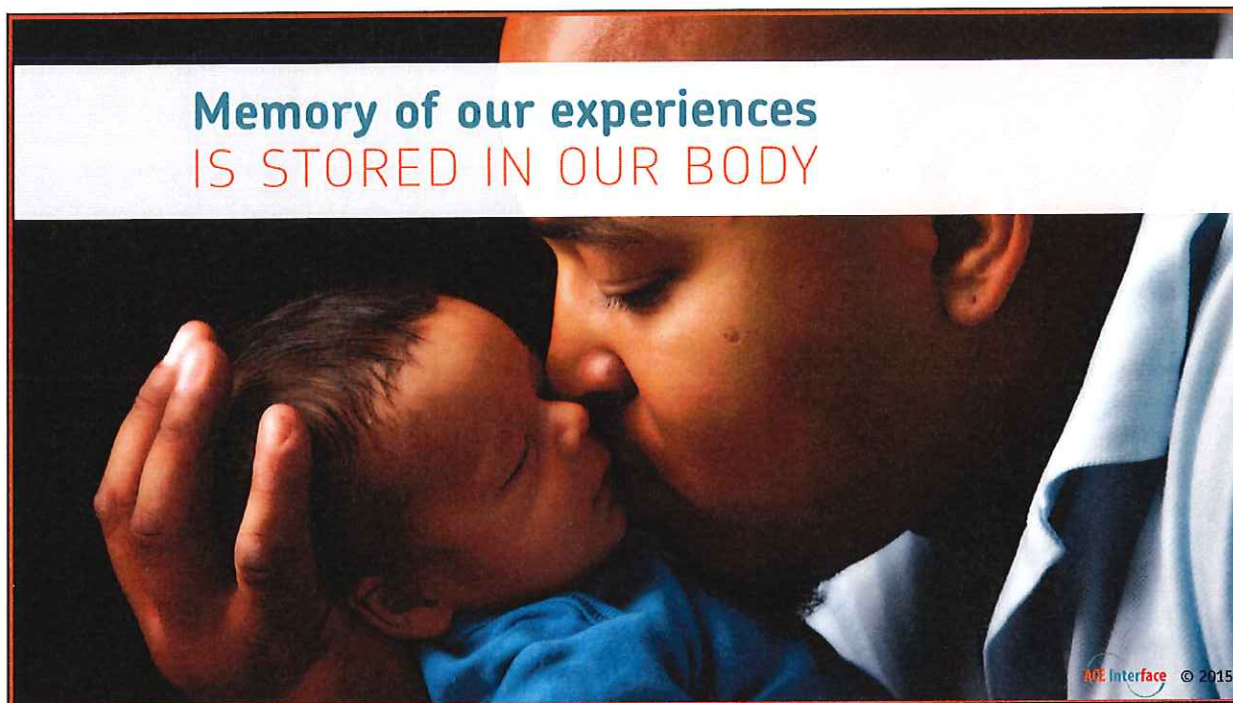
Neuroscience
Epigenetics
Adverse Childhood Experiences
Resilience

ACE Interface: Understanding Neuroscience, Epigenetics, Adverse Childhood Experiences, Resilience

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Think of a relationship you have
that you greatly value.



Memory of our experiences
IS STORED IN OUR BODY

ACE Interface © 2015



It's about you and me
CHANGING
the future of
PUBLIC HEALTH

DISCOVERY

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Objectives for Today's Training:

- Participants will
 - Understand the basic biological foundations of ACEs
 - Be able to explain key elements of the ACE Score (i.e. dose response, highly inter-related, etc.)
 - Identify personal action steps
 - Be able to explain what this means for children and their families

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

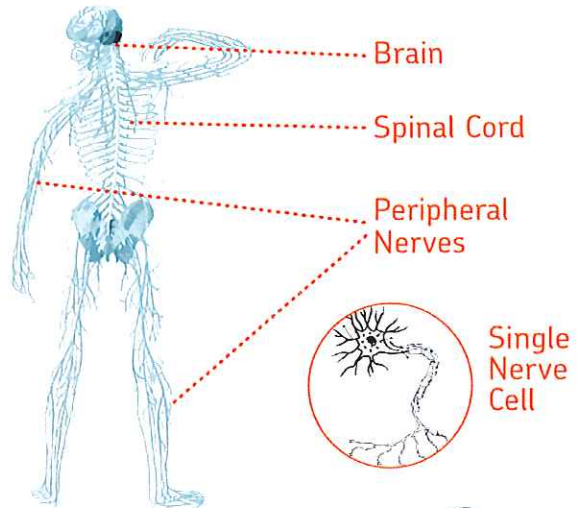
Over 17,000 study participants

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

HUMAN NERVOUS SYSTEM

Nervous system
ORCHESTRATES BODY
FUNCTIONS & PERCEPTIONS

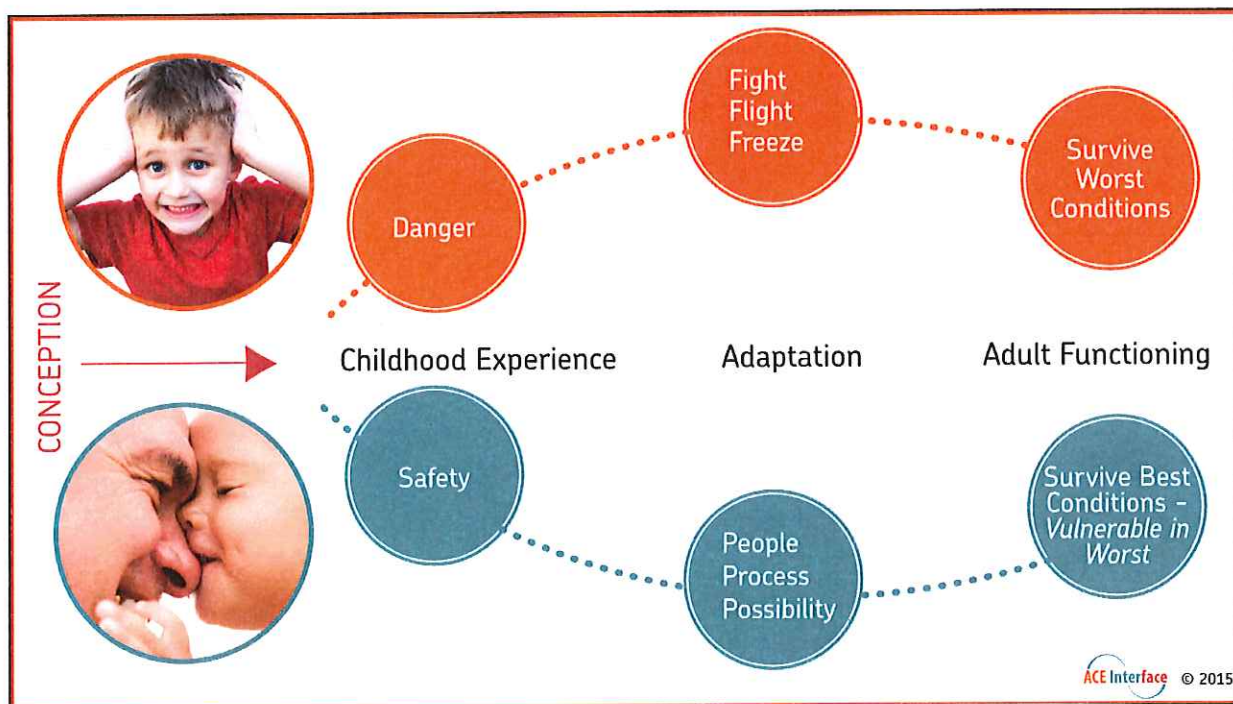
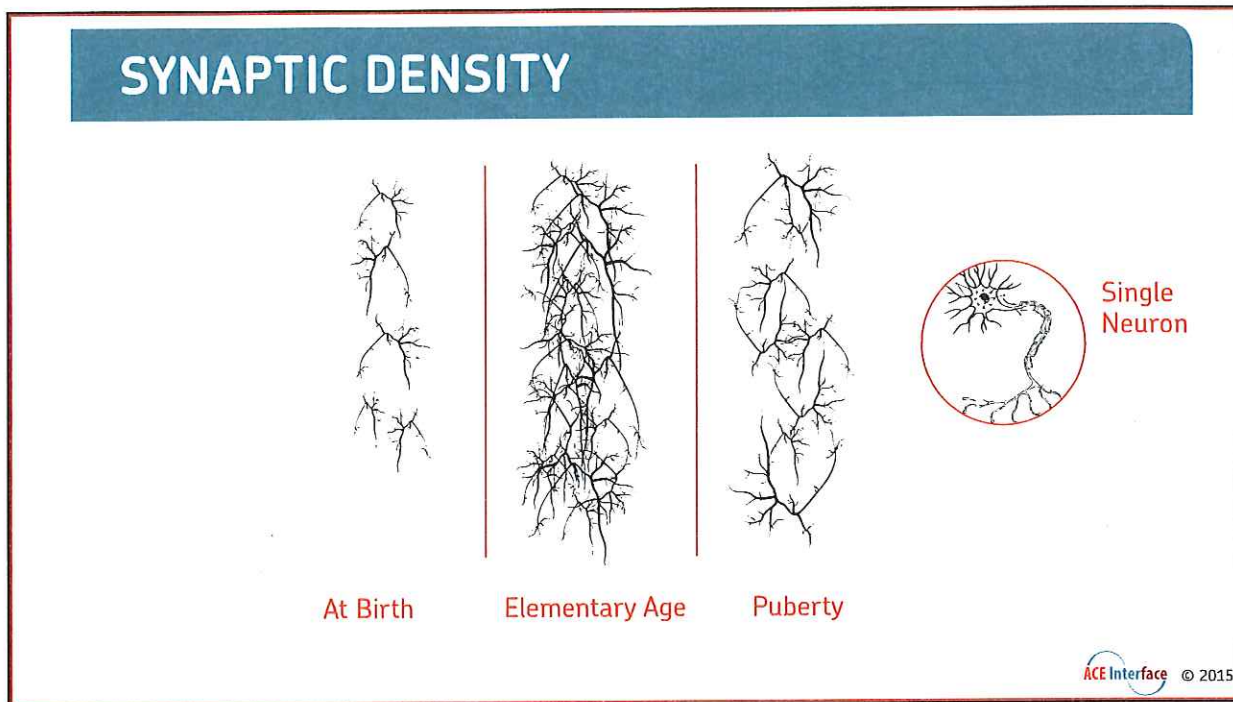
Neuroscience
HELPS US UNDERSTAND WHY
A C E S
ARE SO POWERFUL

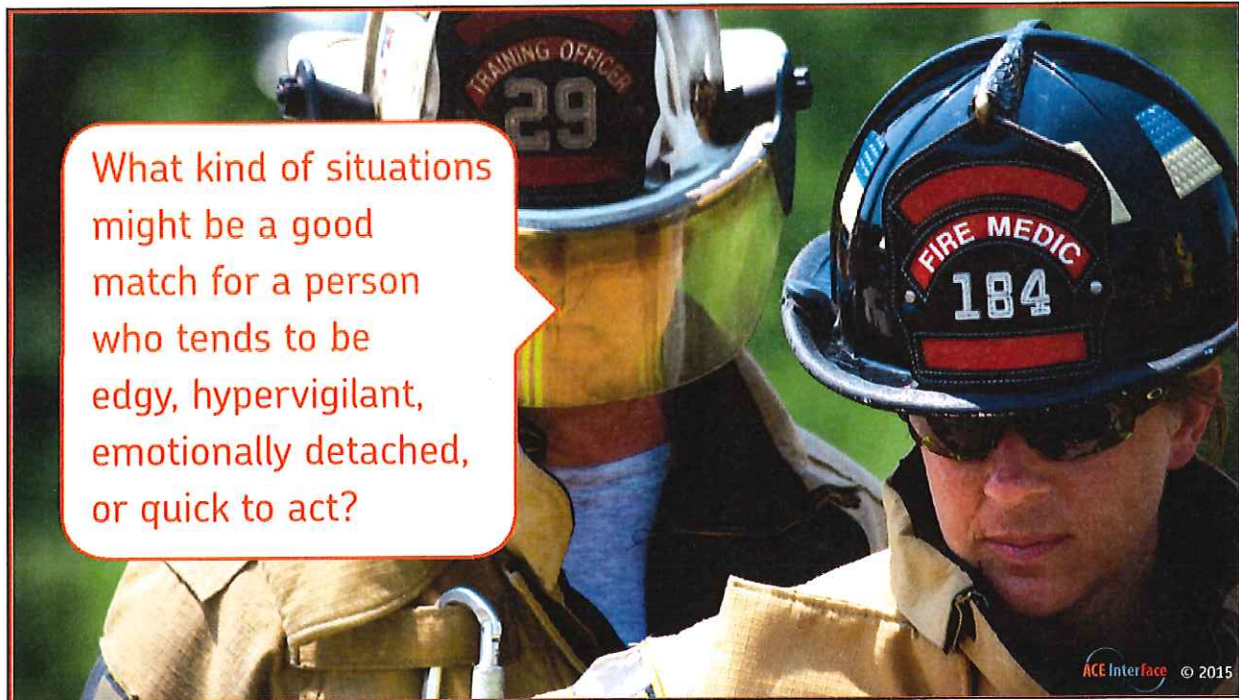


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<https://www.youtube.com/watch?v=gqu54ZlhINc>





ADAPTATIONS VS EXPECTATIONS

WHEN BIOLOGY
collides
WITH SOCIAL
EXPECTATIONS
we run into
TROUBLE

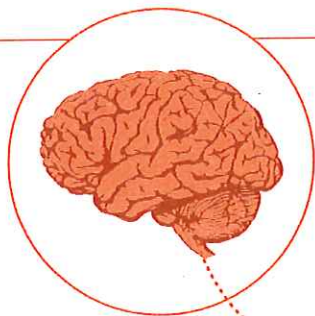


EFFECTS OF MALTREATMENT

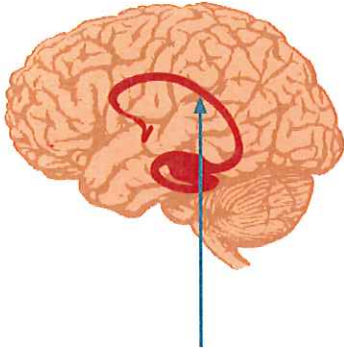


type of maltreatment
GENDER
A G E

EXPERIENCE & ADAPTATION
sensitive periods
Cause-Effect



THE LIMBIC SYSTEM



LIMBIC SYSTEM

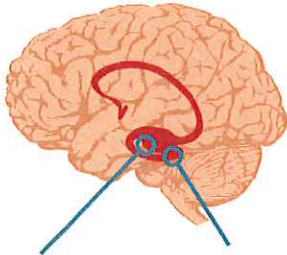
**FIGHT
or
FLIGHT**

vital for
LEARNING
MEMORY
REWARD
REINFORCEMENT

regulates
HORMONES
MOOD
HEARTBEAT
SEXUAL BEHAVIOR


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THE HIPPOCAMPUS AND AMYGDALA



Amygdala **Hippocampus**

**VITAL
for
RELATIONSHIPS**



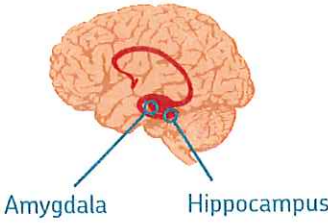


Panic & Fear | Attention | Memory | Social Cues

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MALTREATMENT
0-3

SEXUAL ABUSE
Age 0-5



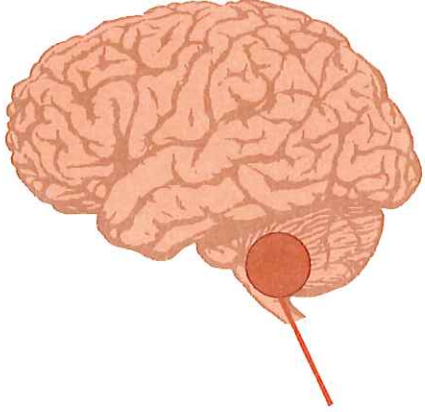
Amygdala Hippocampus

ACE Interface © 2015

POSITIVE FEELINGS

Perception

Attention



ADDICTION

Attention Problems

Mental Illness

Cerebellar Vermis

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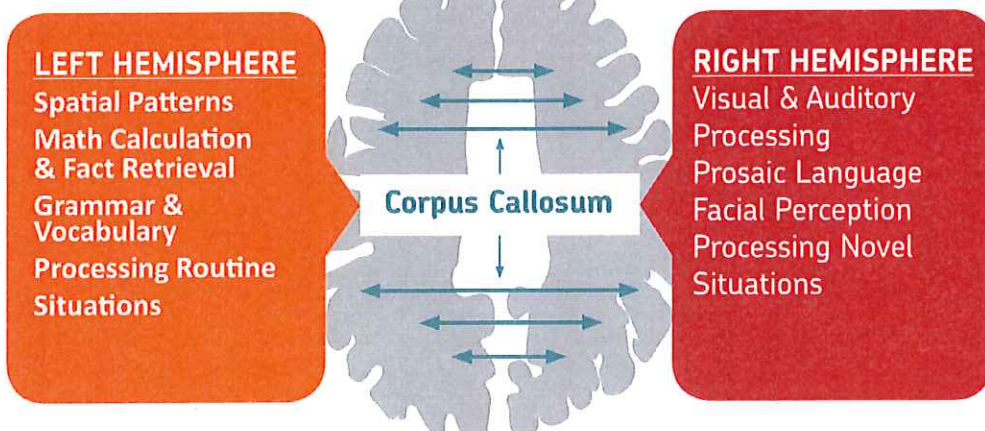


Cerebellar Vermis

BIOLOGICAL CONNECTIONS

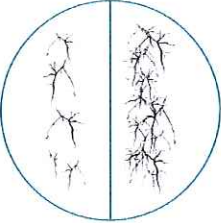
between trauma-induced adaptations in the Vermis ——— and ——— serious and persistent MENTAL ILLNESS

The Corpus Callosum




♂ **NEGLECT**
in
Infancy

♀ **SEXUAL ABUSE**
Age 9-10

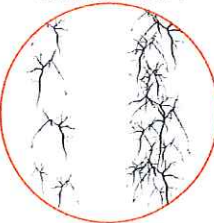
At Birth  Elementary Age

SYNAPTIC DENSITY

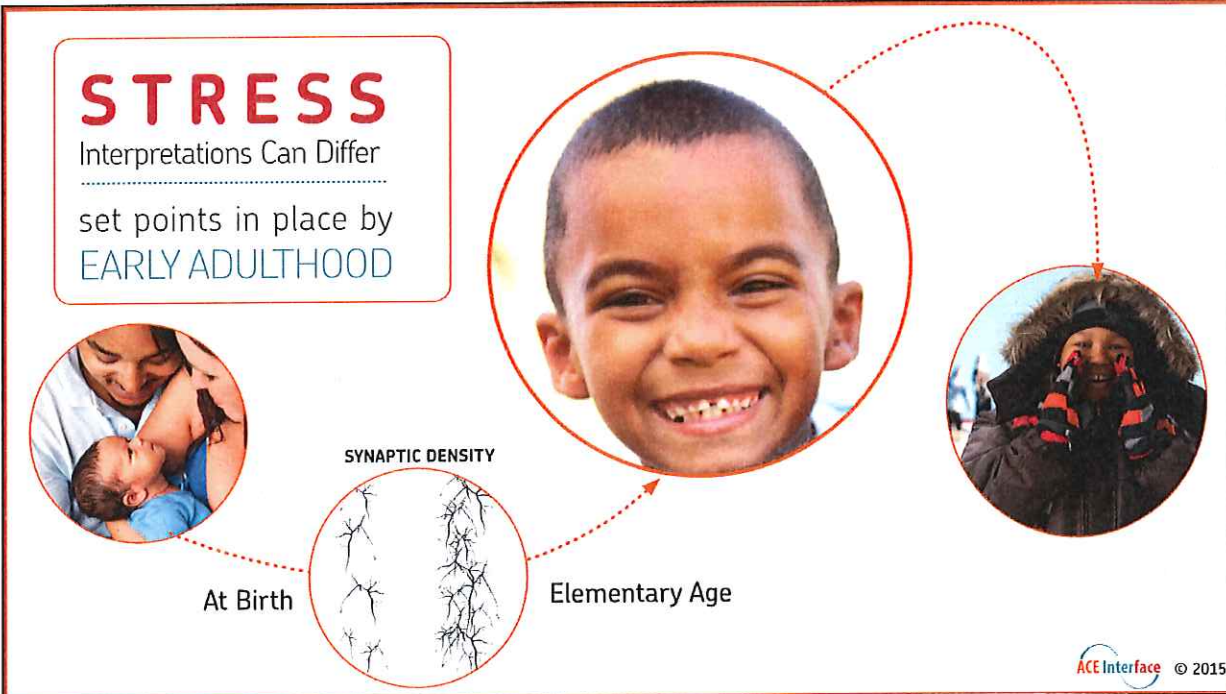


ACE Interface © 2015

STRESS
Interpretations Can Differ
set points in place by
EARLY ADULTHOOD

At Birth  Elementary Age

SYNAPTIC DENSITY



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We have a collective **CHOICE**



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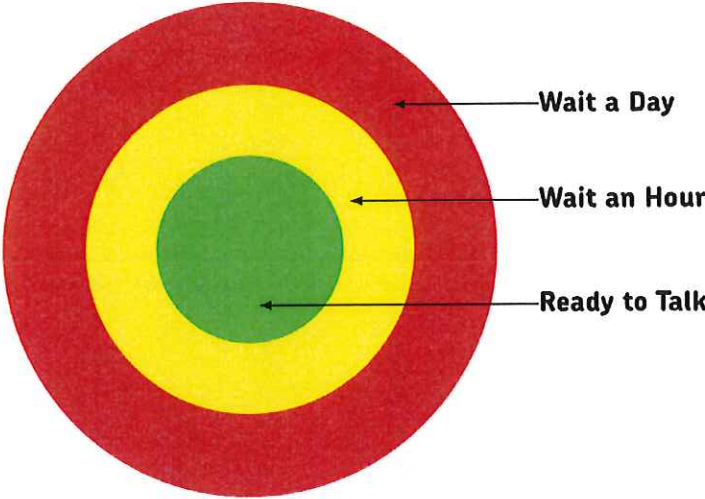


Bullying



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Trauma-Informed School Discipline

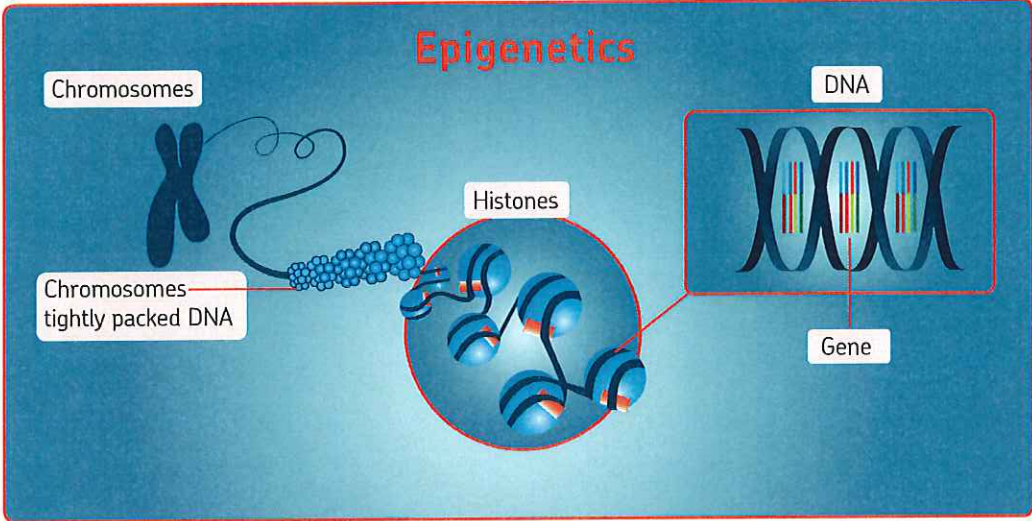


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HAND MODEL OF THE BRAIN



ACEs Influence Gene Expression



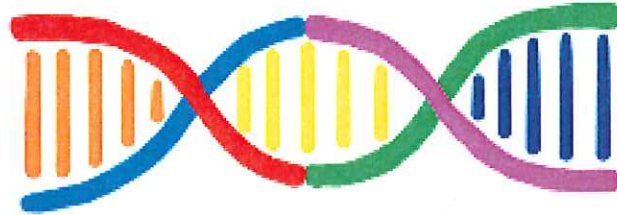
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Epigenetics & Enduring Health

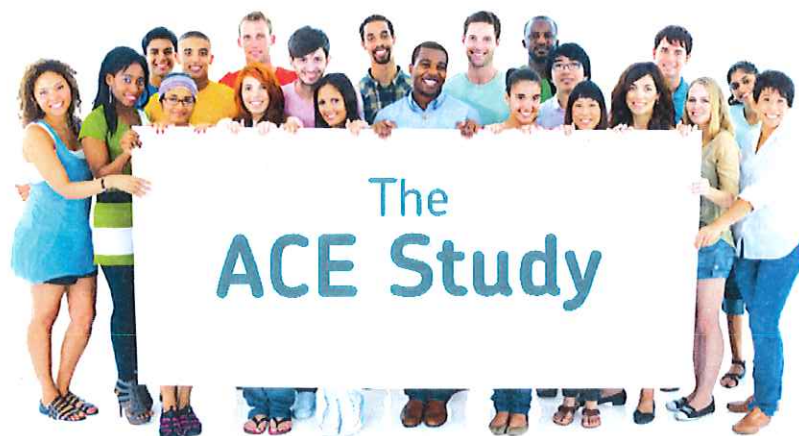


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WHAT IS EPIGENETICS?



<http://www.acesconnection.com/clip/epigenetics-why-inheritance-is-weirder-than-we-thought>



ACE Interface © 2015

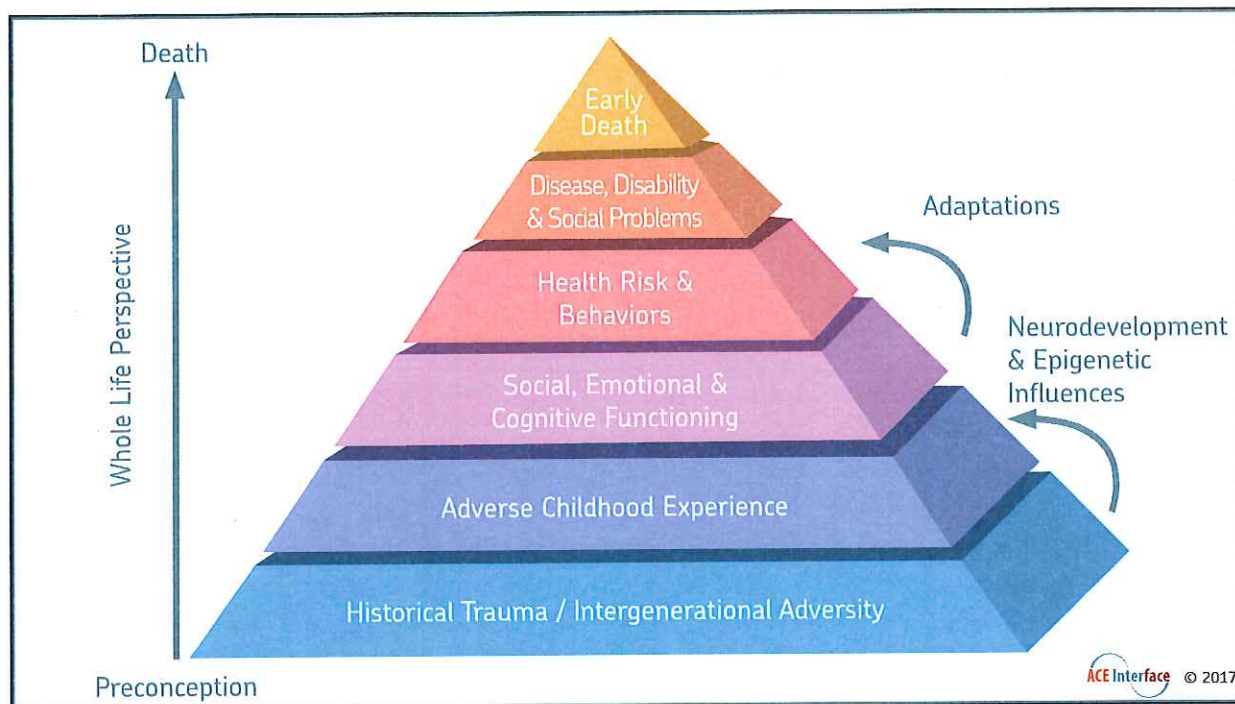
Understanding Health Behaviors

adaptations
to
ADVERSITY

ACEInterface © 2015

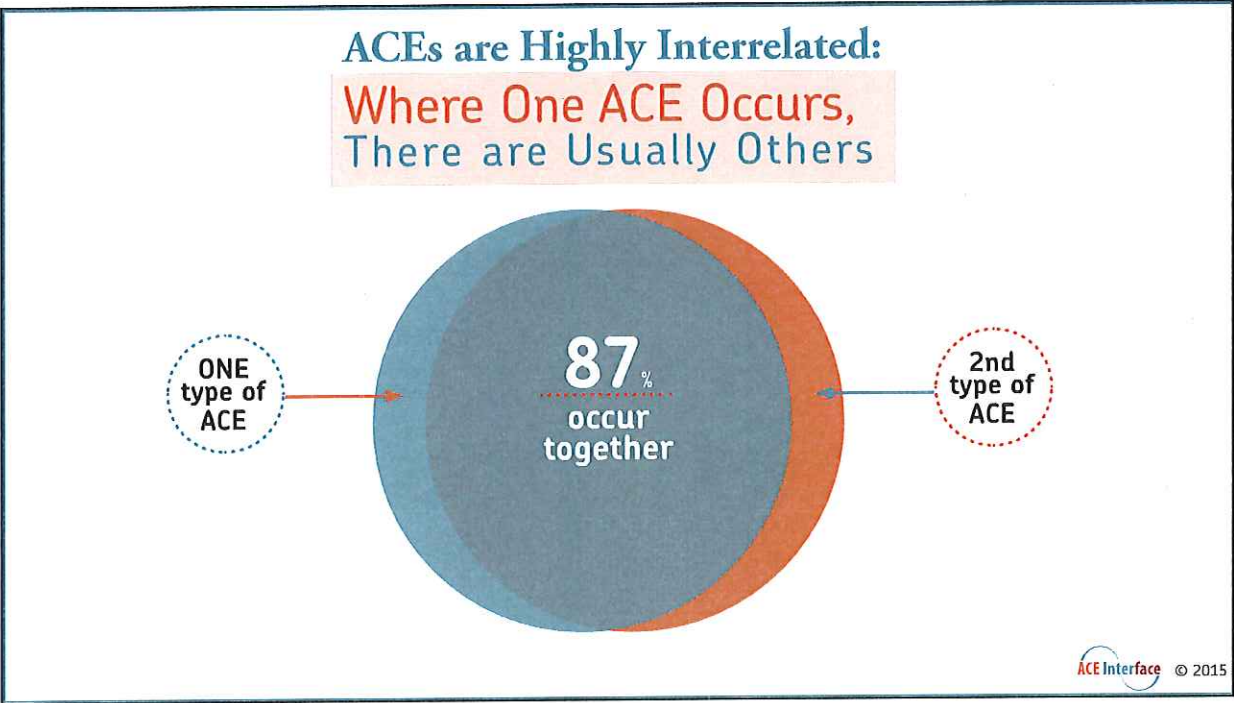
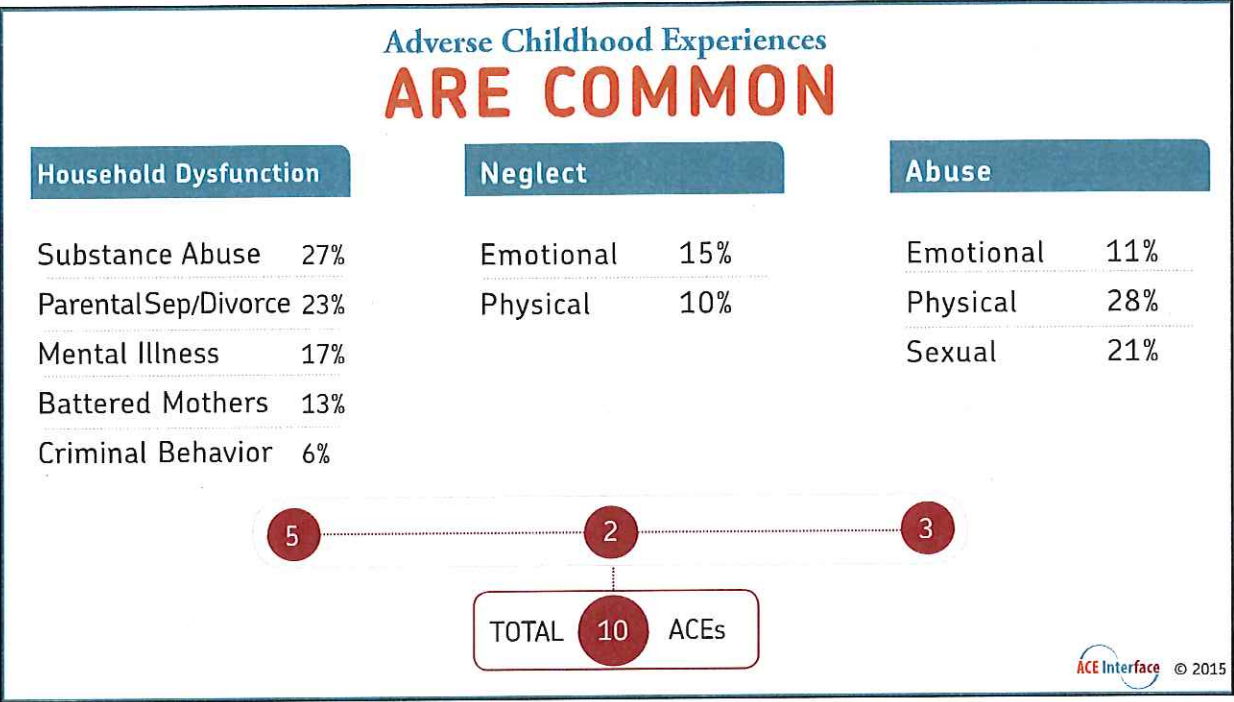
Does the Risk for Chronic Health Problems Originate in Childhood?

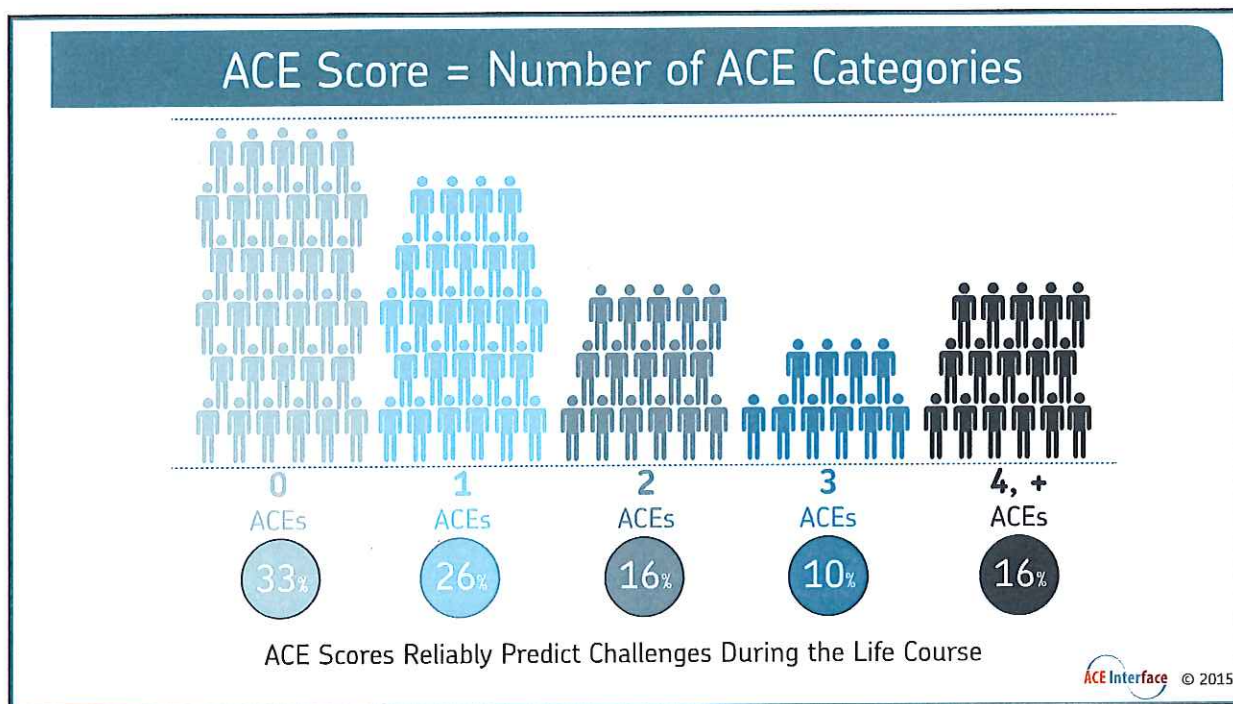
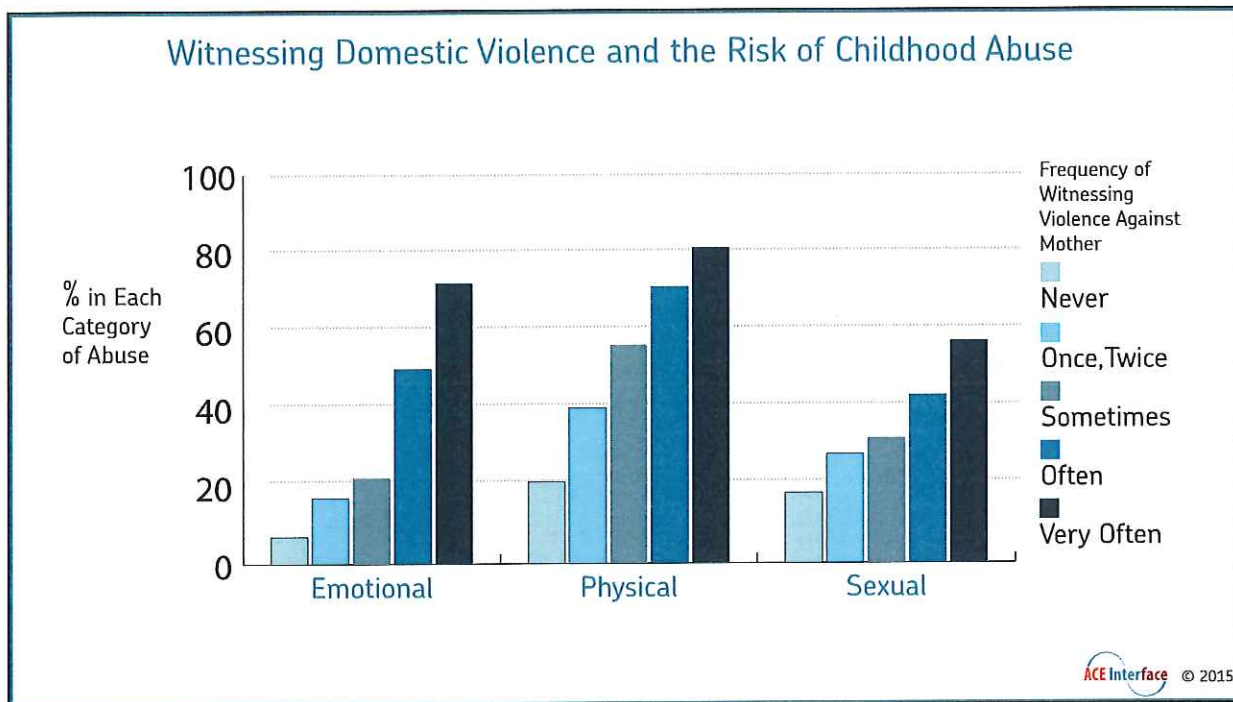
ACEInterface © 2015

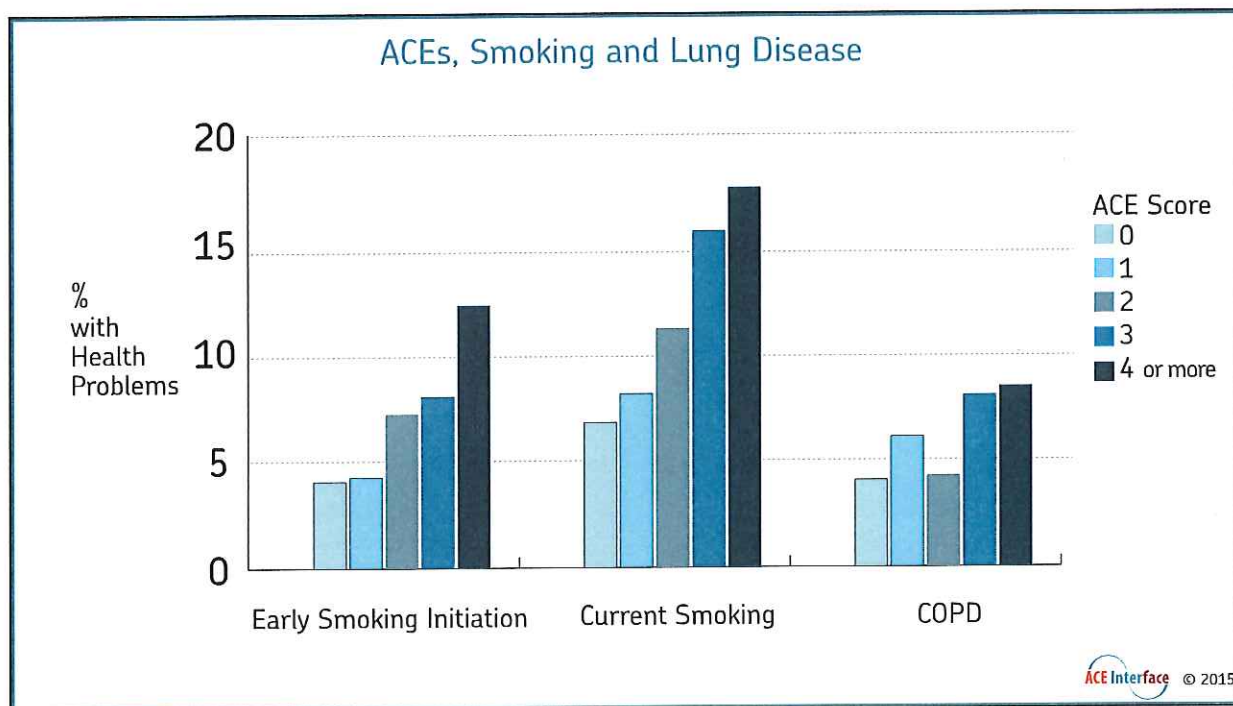
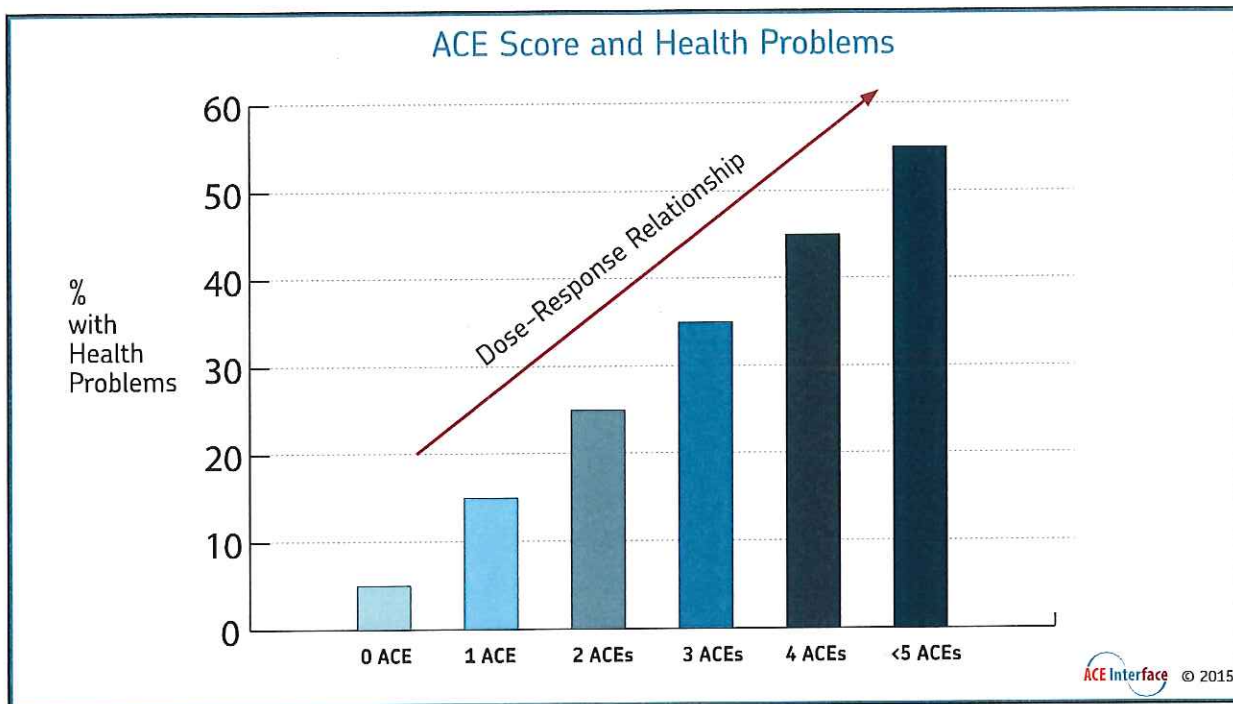



FINDING MORE CONNECTIONS

how multiple forms of **childhood adversity** can affect many important **PUBLIC HEALTH PROBLEMS**



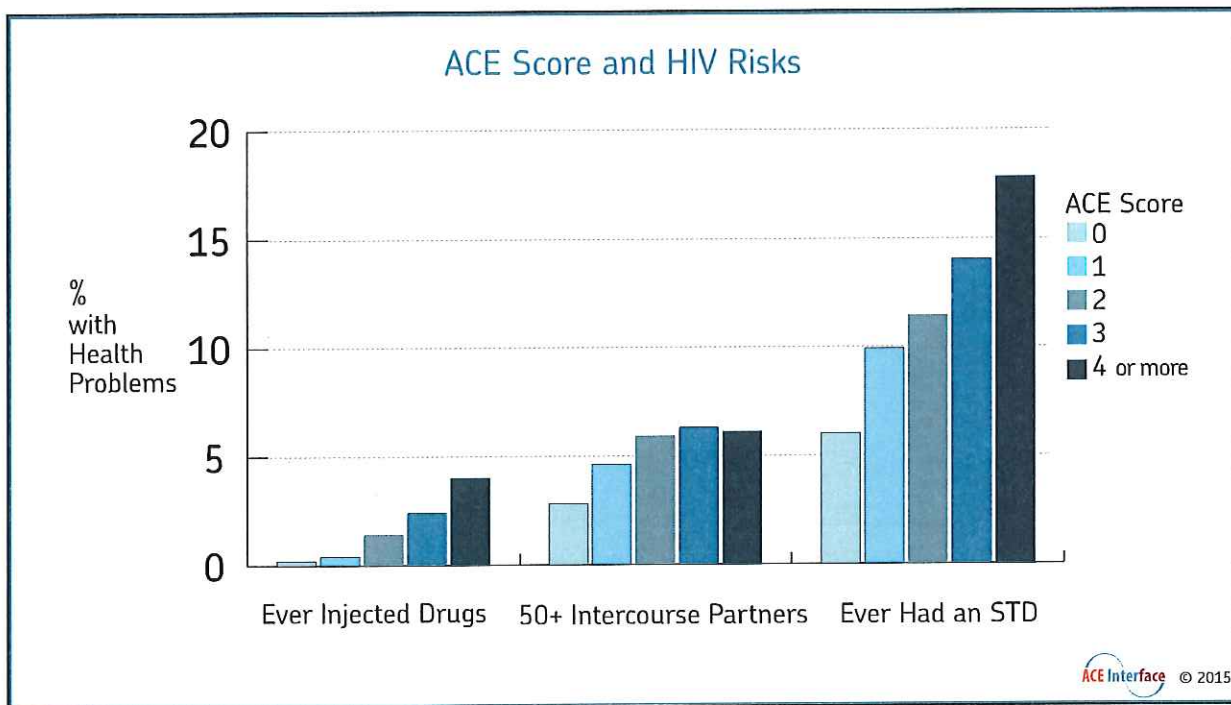


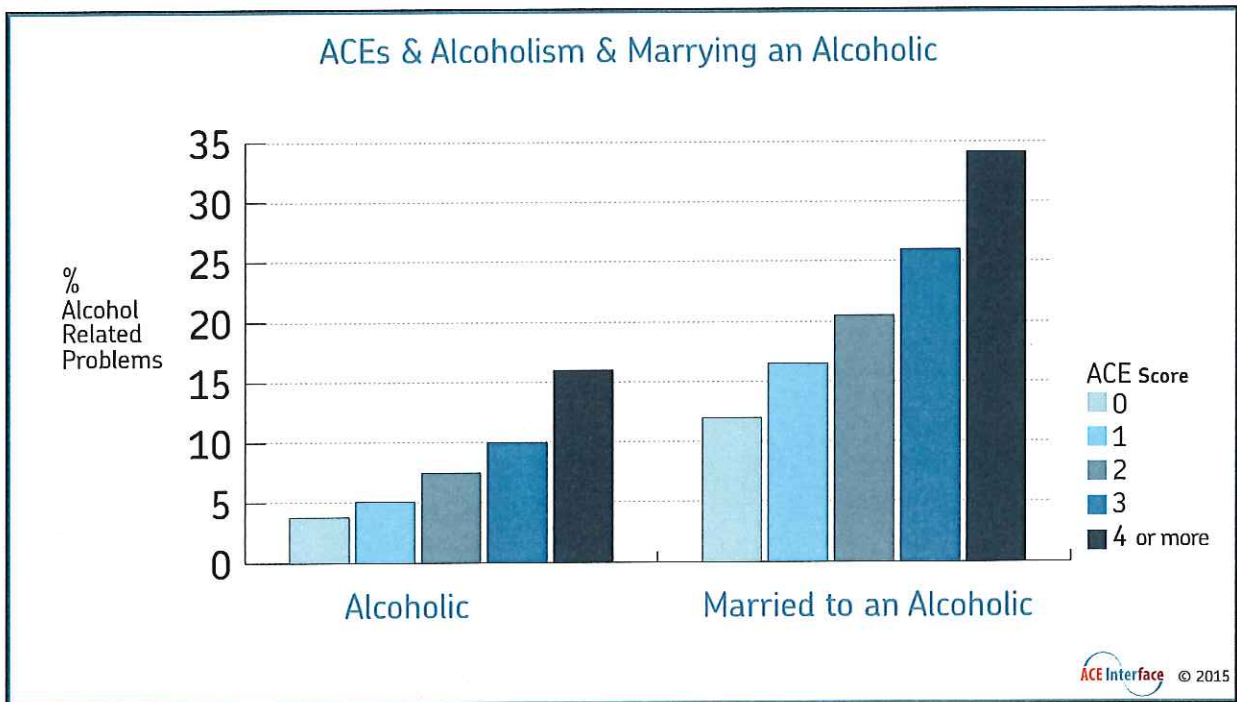
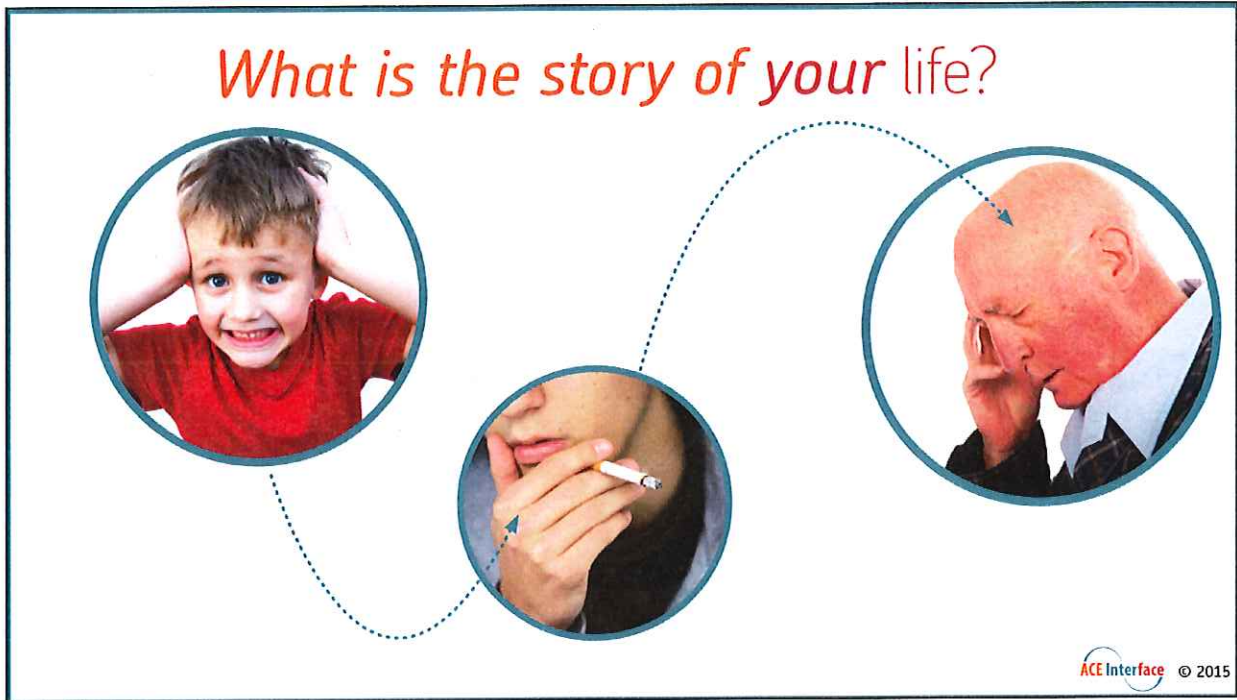


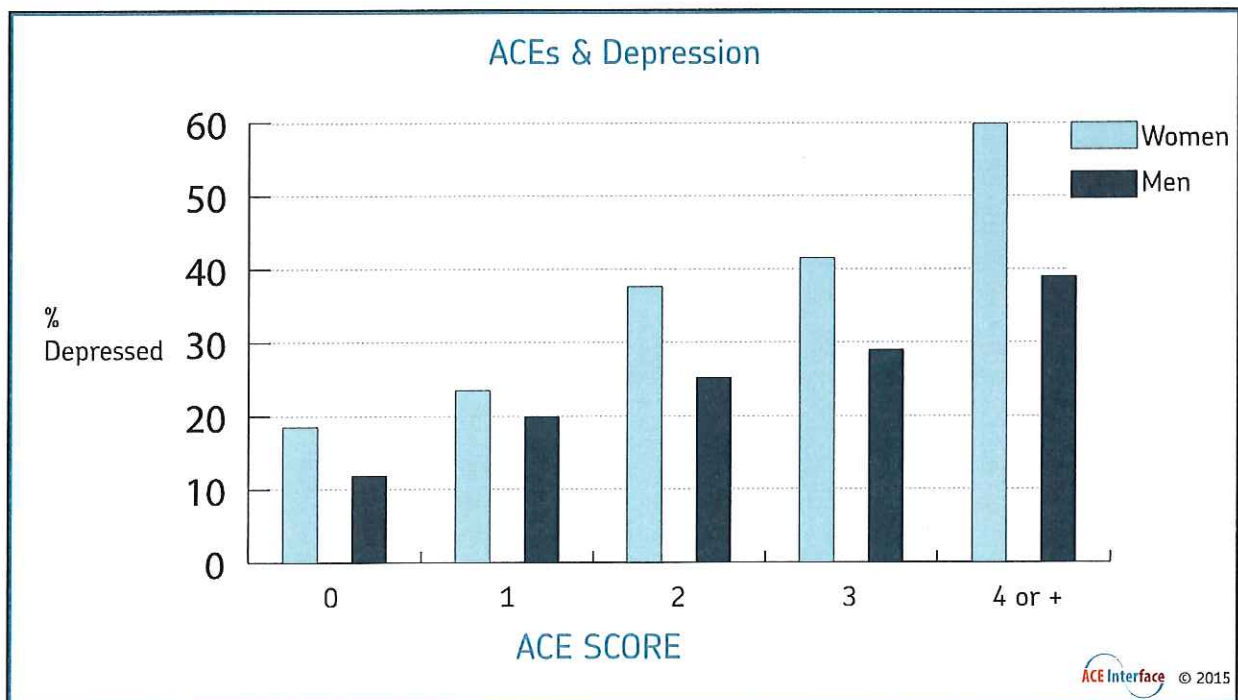
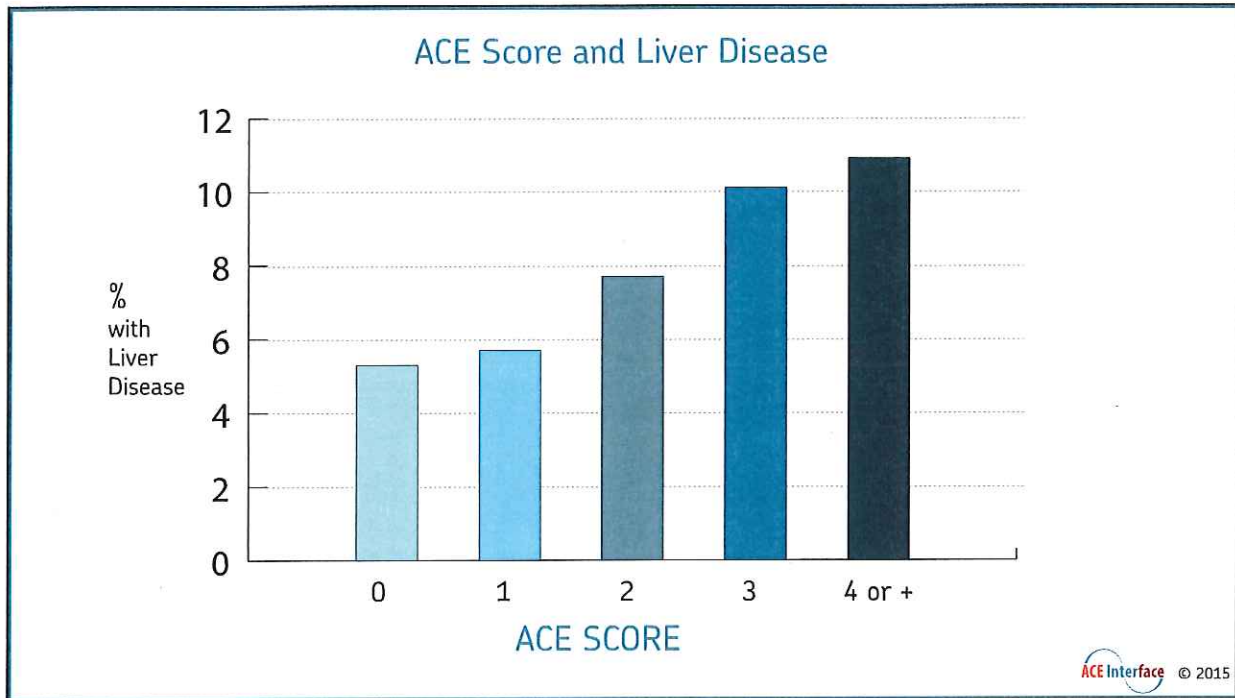


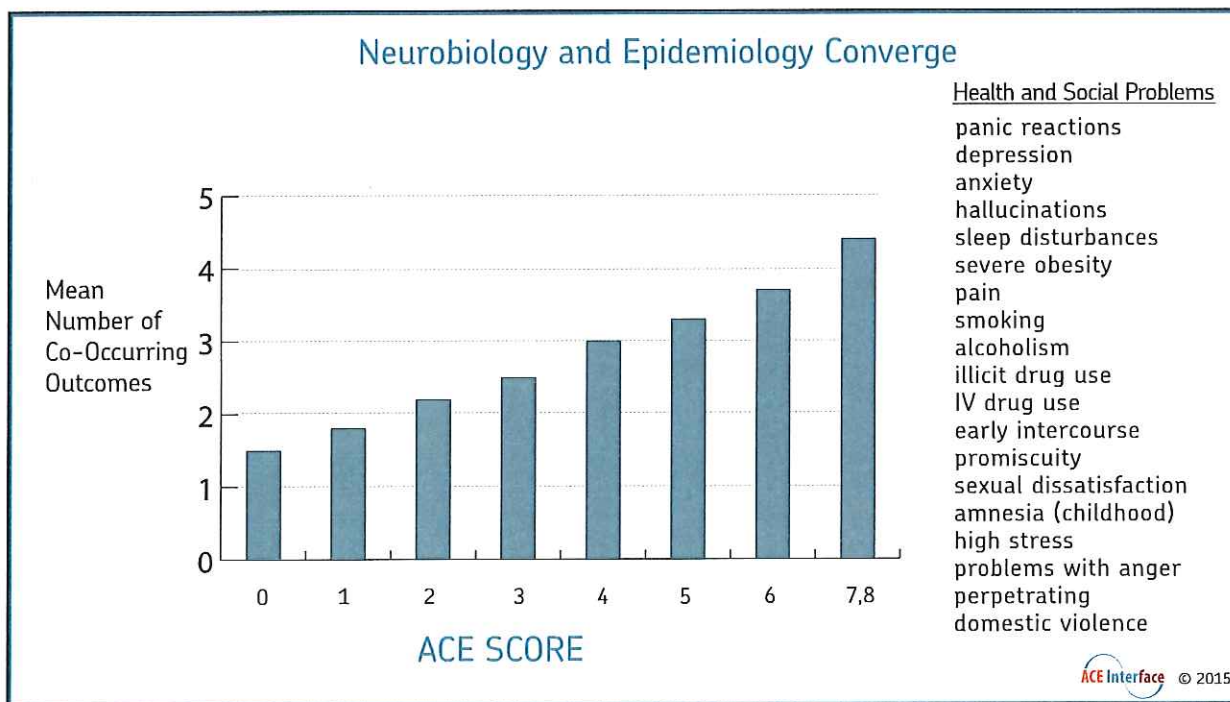
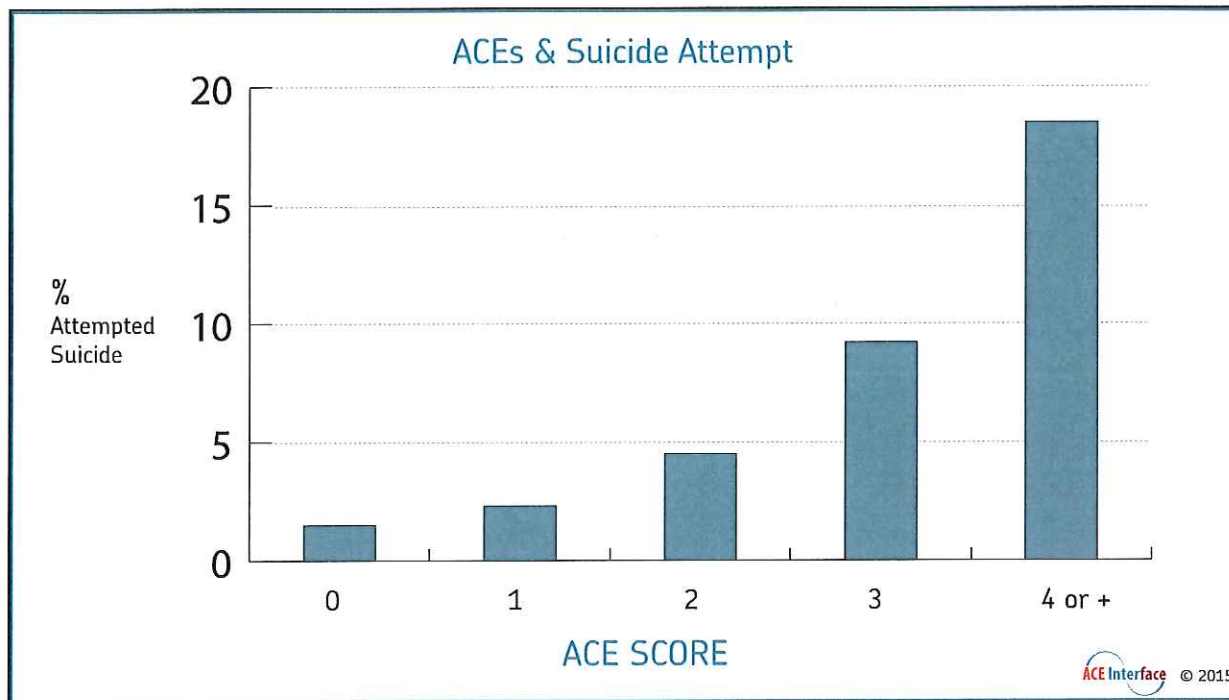
Anxiety
Depression
Difficulty Concentrating
SMOKING

ACE Interface © 2015









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

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					


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	X
22		23	24	X	25	26
27	X	28				
29		30				

 © 2015


the WAY you spend YOUR day?

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

 © 2015

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					

 © 2015

Knocking Down ACE Scores
— will prevent —



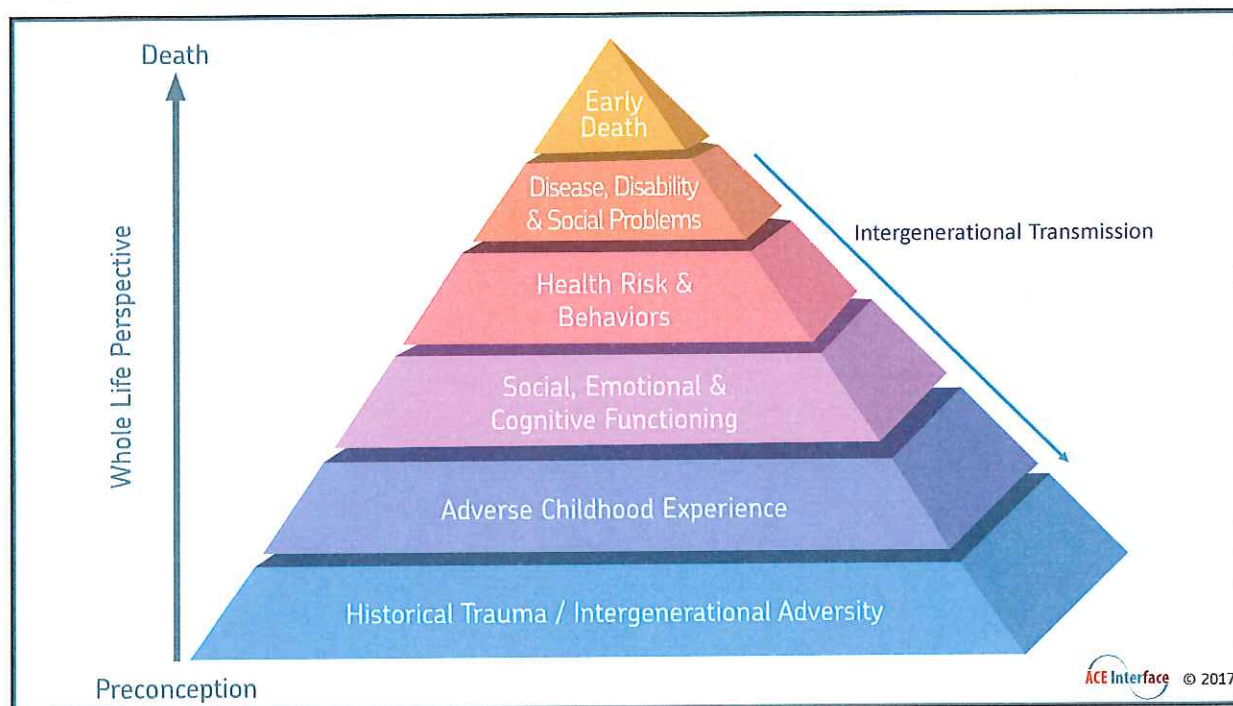
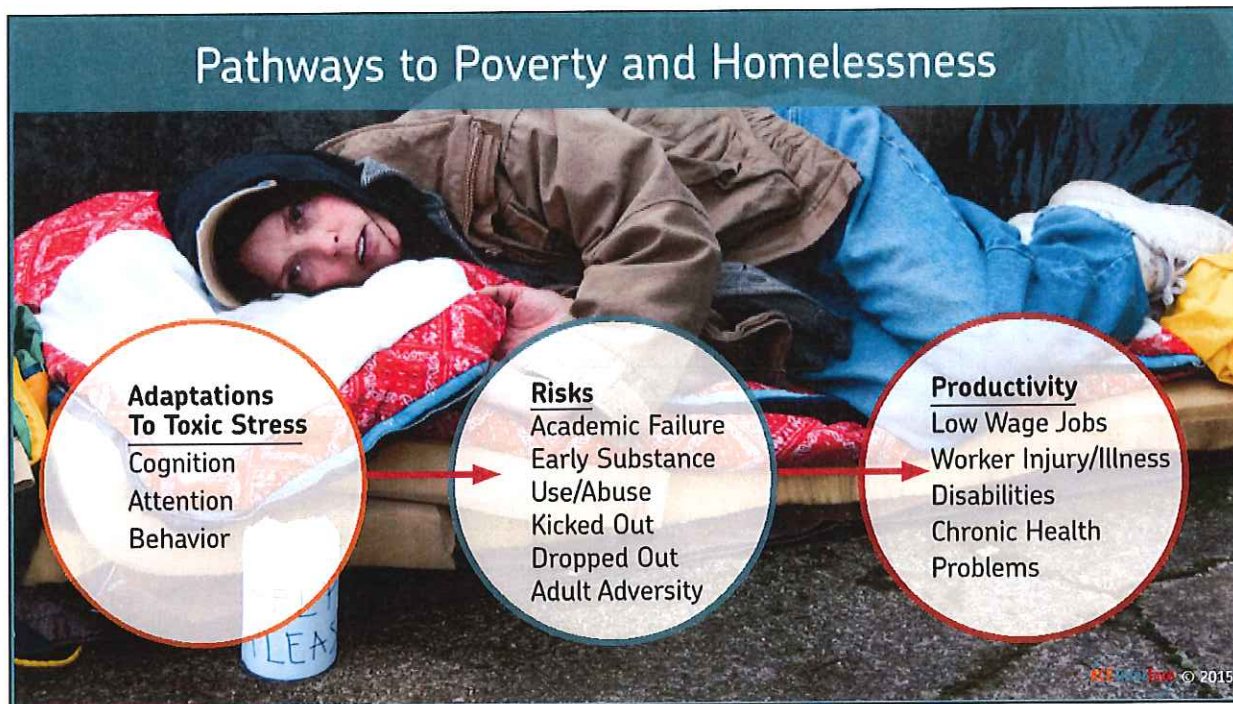
3 homelessness, unemployment, incarceration

2 disability, learning problems


1 poverty

0

 © 2015




ACEs are Common, Interrelated, Powerful



High ACE Scores
in Population

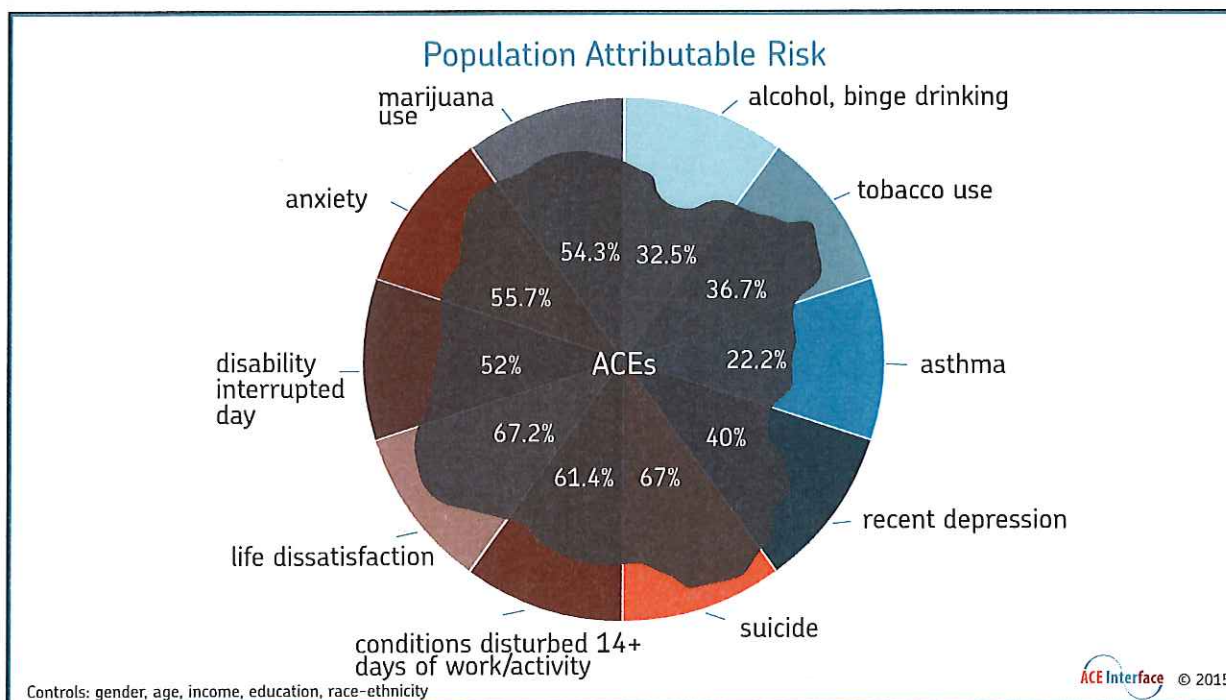


Increased Risk of Multiple
Health and Social Problems



Intergenerational
Transmission of ACEs


ACE Interface © 2015



The screenshot shows a web browser window displaying a CDC infographic. The title is "THE REAL COST OF EXCESSIVE ALCOHOL USE". Below the title, it asks "WHAT EXCESSIVE DRINKING COSTS US". The infographic features a map of the United States composed of dollar signs, with the text "\$249 BILLION IN 2010" below it. To the right, there are two statistics: "\$807 PER PERSON" next to a person icon and "\$2.05 PER DRINK" next to a wine glass icon. At the bottom of the infographic, it says "COST BREAKDOWN". The browser's address bar shows the URL "https://www.cdc.gov/alcohol/pdfs/excessive_alcohol_cost.pdf". The Windows taskbar at the bottom shows the time as 5:20 AM on 9/19/2018.

The infographic is titled "COMMON CAUSE" in large blue letters. Below the title, the text reads "everyone can contribute prevent accumulation of ACEs". The text "everyone can contribute" is in red, "prevent accumulation" is in red, and "of ACEs" is in blue. To the left of the text is a collage of seven hexagonal images: a person in a mask, a child being held, a woman with a child, hands being held together, an elderly woman, a group of people, and a man with a child. In the bottom right corner, there is a logo for "ACEInterface © 2015".

We
have the power to
shift the dynamics
that lead to
high ACE scores.



The central graphic features the word "TEAMWORK" in large, bold letters. Below it, the word "SUCCESS" is written, followed by "GROWTH" at the top. There are several gears of different colors (yellow, green, red) and arrows indicating a cycle. Other words like "HELP", "PARTNER", and "VISION" are scattered around the central elements. The people surrounding the graphic are diverse in age and ethnicity, smiling and looking towards the center.

ACE Interface © 2015

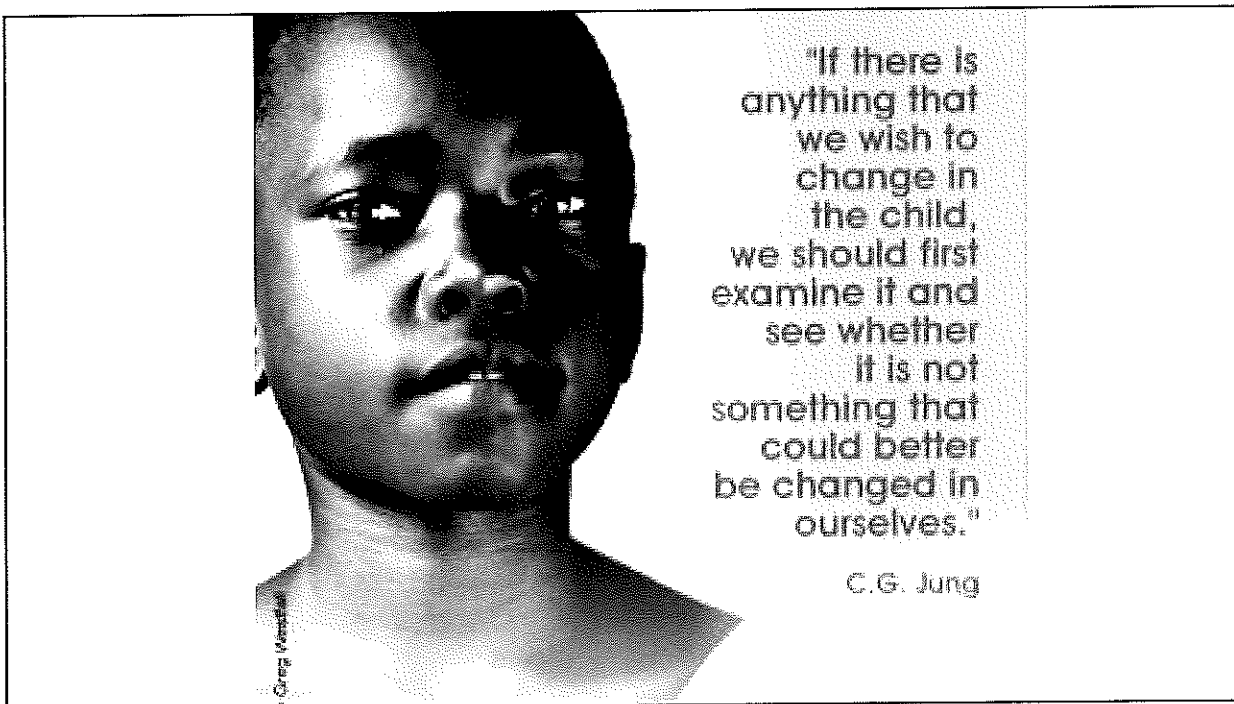
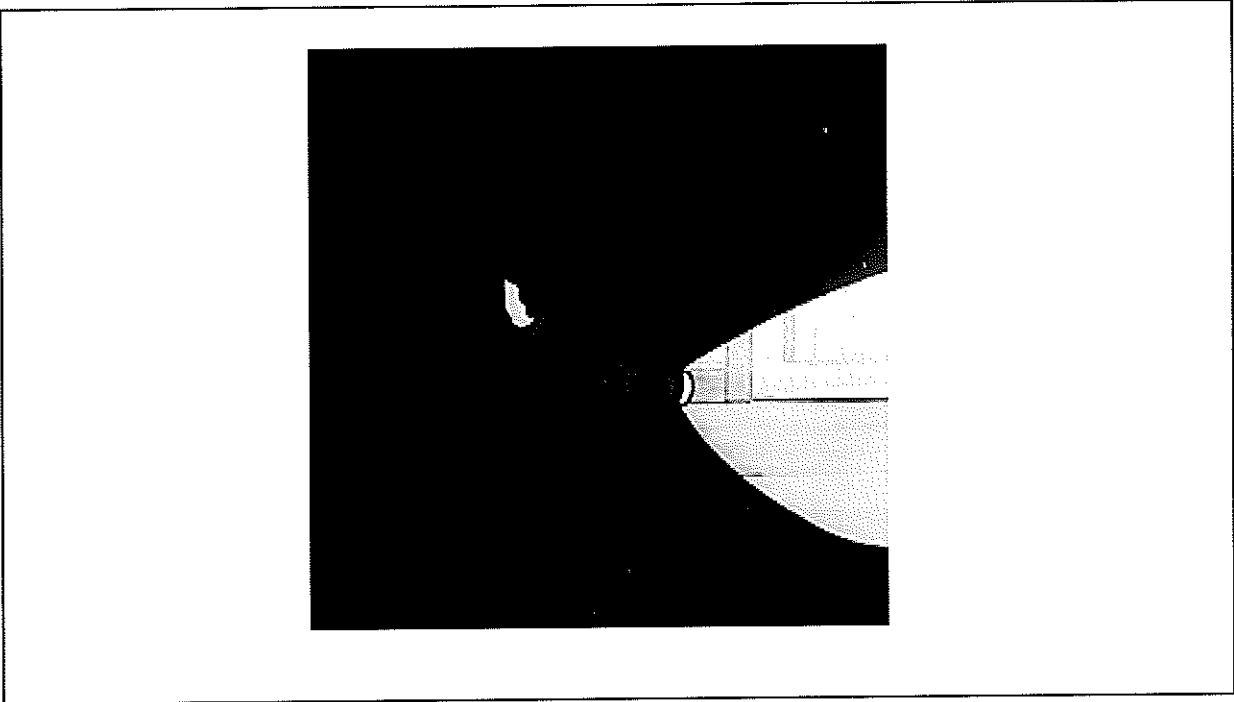
CHANGE is up to **US**



The three circular images show: 1) A woman holding a baby and a young girl. 2) A woman holding a young girl. 3) A group of four children smiling.


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

ACE Interface © 2015

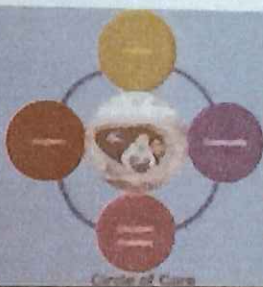
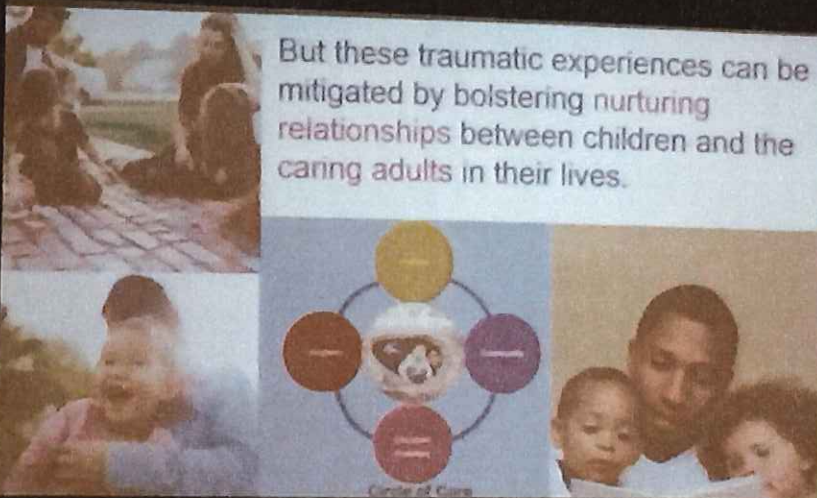


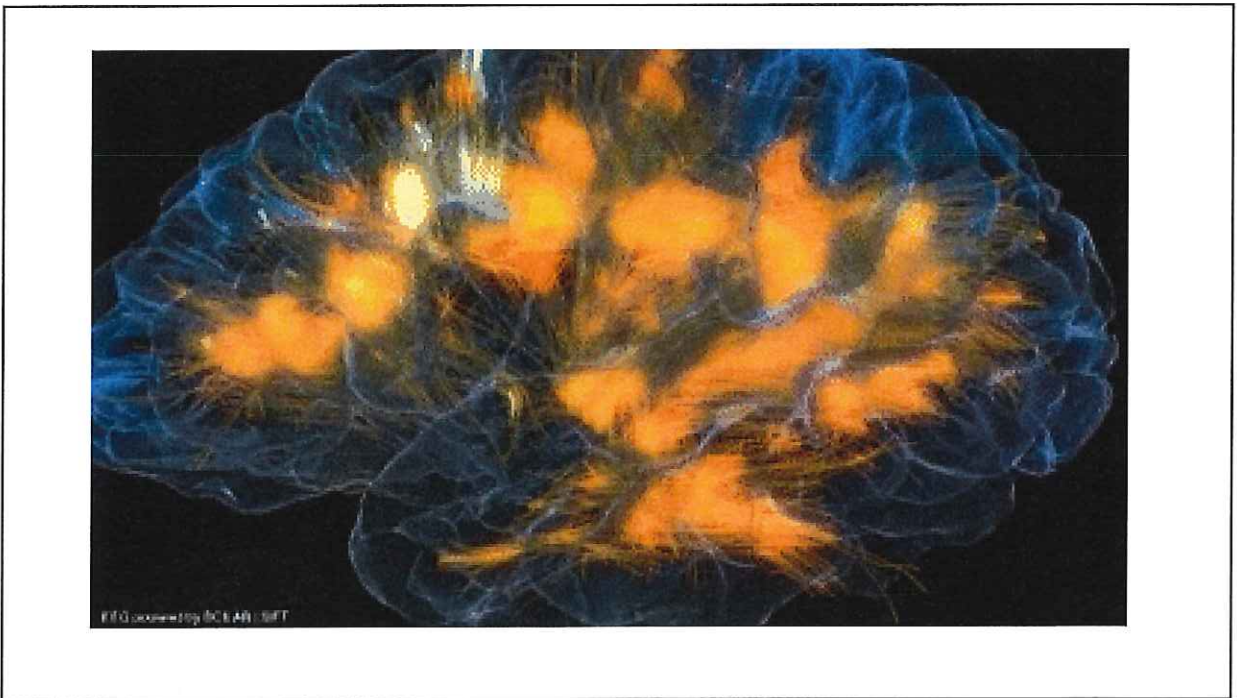
Rich Early Childhood Experiences

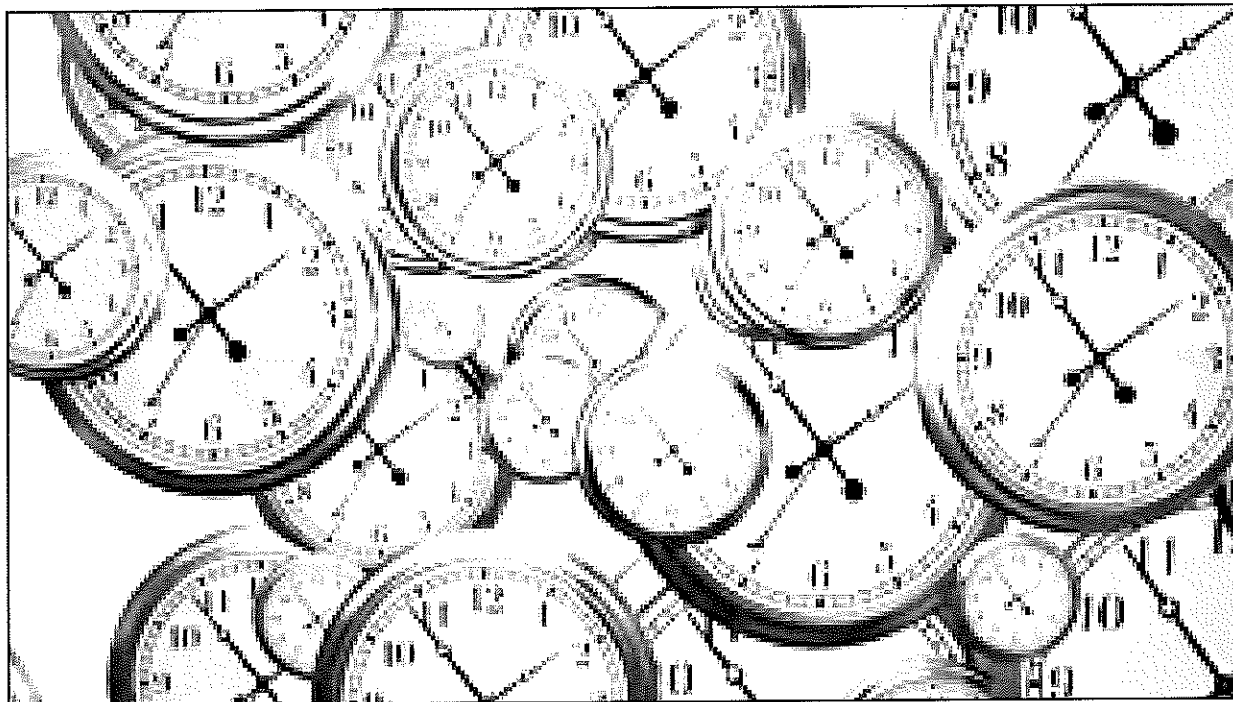
- Individualize learning experiences
- Create language rich and responsive settings
- Develop academic skills
- Enhance executive functioning
- Structure formal and informal activities
- Prompt reflection, prediction, hypothesizing, problem-solving
- Enrich health and well-being
- Fostering collaborative family engagement
- Develop family and community partnerships
- Promote equity

An illustration of a child and an adult standing together. The child is on the left, wearing a yellow shirt and dark pants. The adult is on the right, wearing a dark shirt and pants. They appear to be in a simple, possibly outdoor or semi-outdoor setting.

But these traumatic experiences can be mitigated by bolstering nurturing relationships between children and the caring adults in their lives.

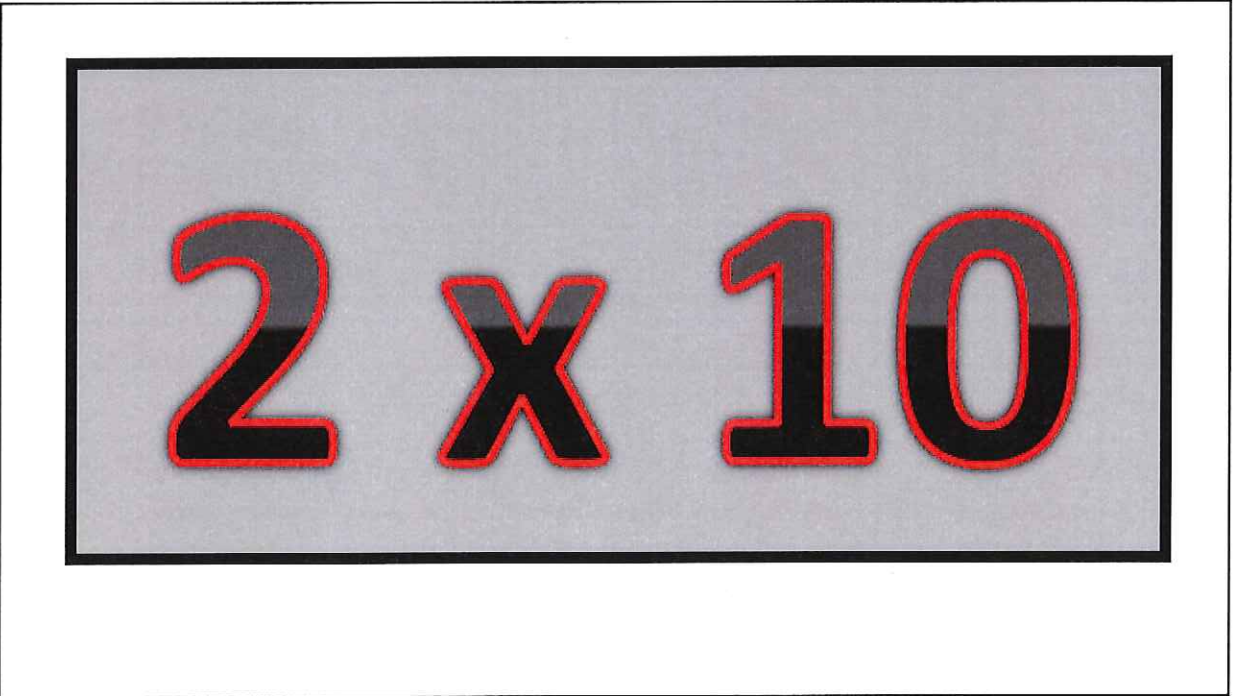
A diagram titled "Circle of Care" showing a central image of a child's face surrounded by four colored circles (yellow, purple, red, blue) connected by lines, representing a support network.A collage of four photographs: top-left shows a woman and a child sitting on a paved area; bottom-left shows a close-up of a baby's face; top-right shows a man and a child; bottom-right shows a man and a child looking at a book together.

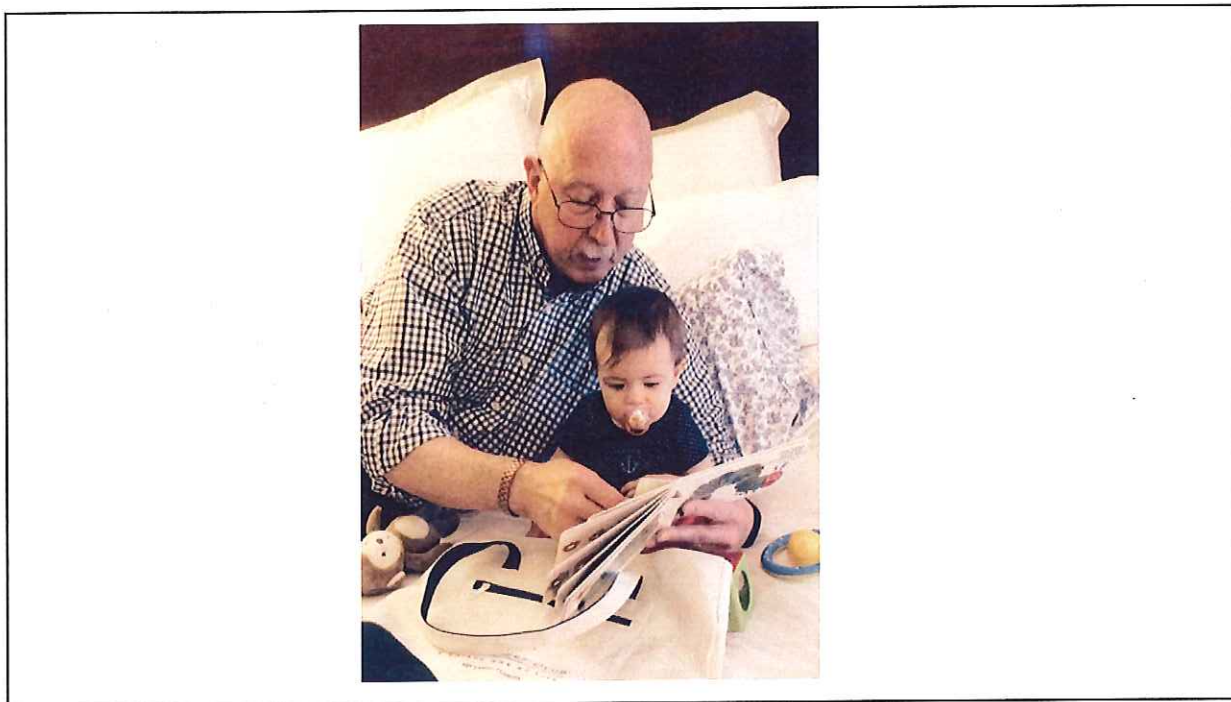




The single most important issue for
traumatized people is to find a
sense of safety in their own bodies.

— *Bessel van der Kolk* —














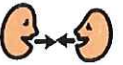







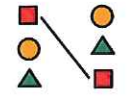


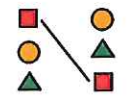



VTP

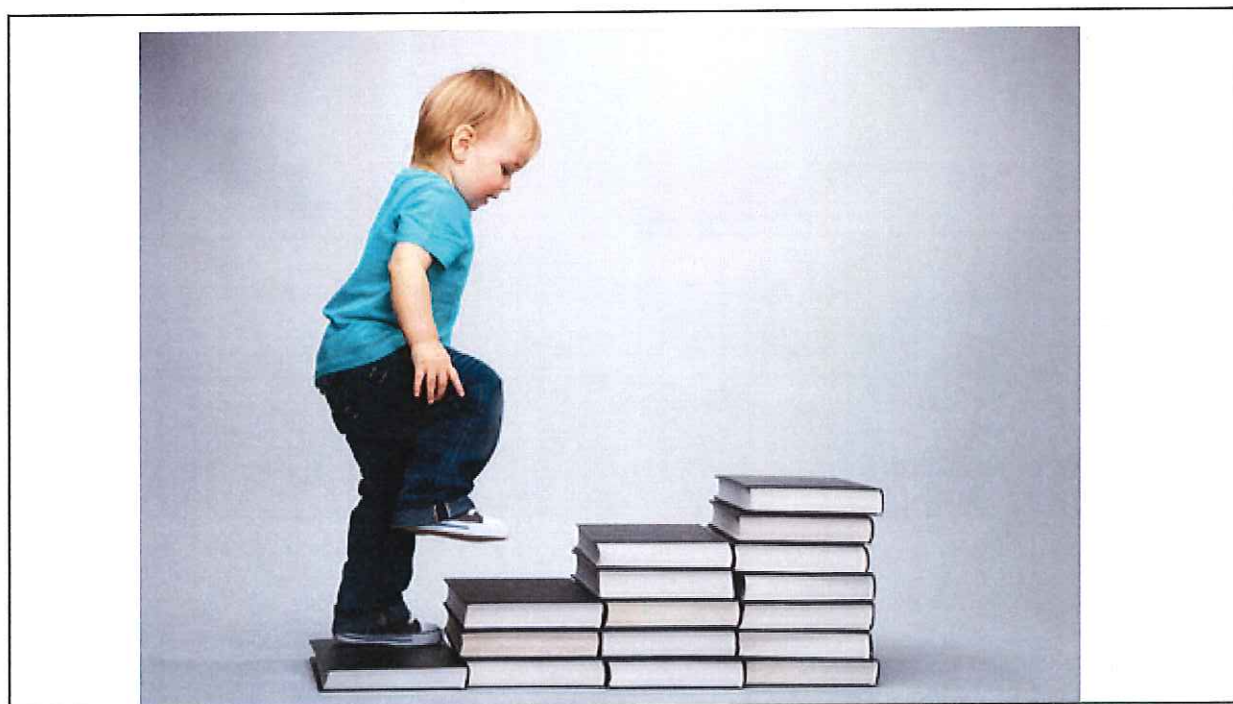


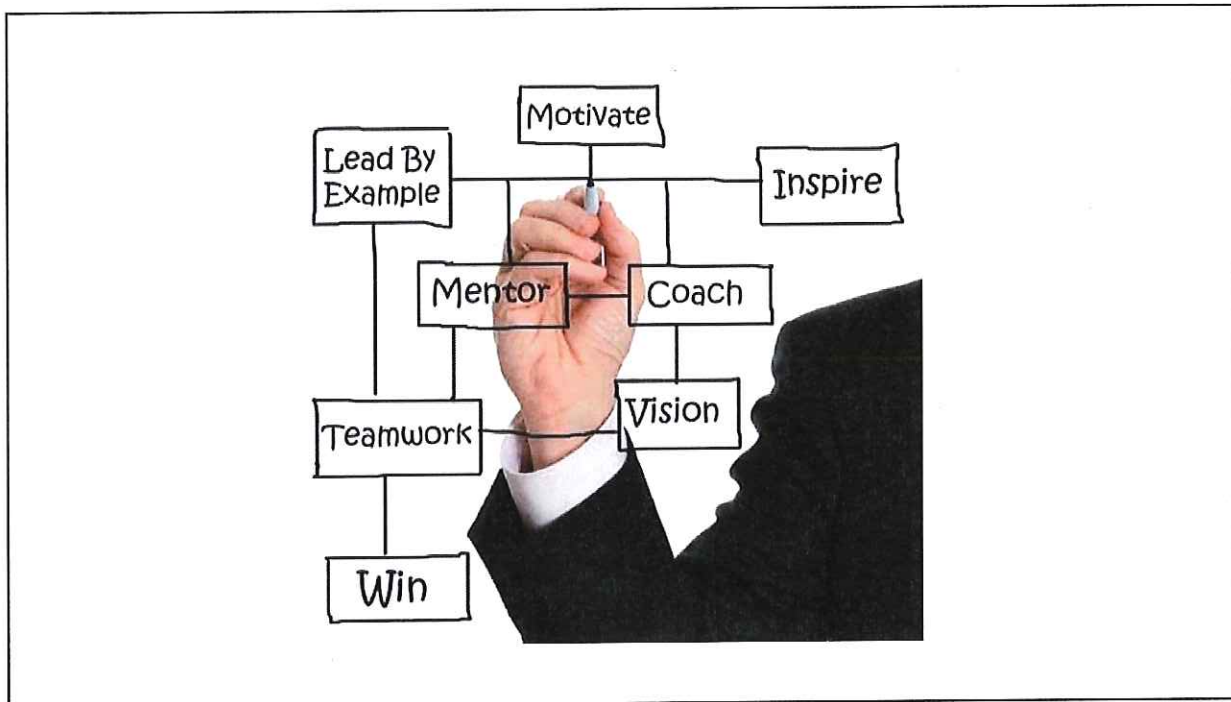
Wash Hands

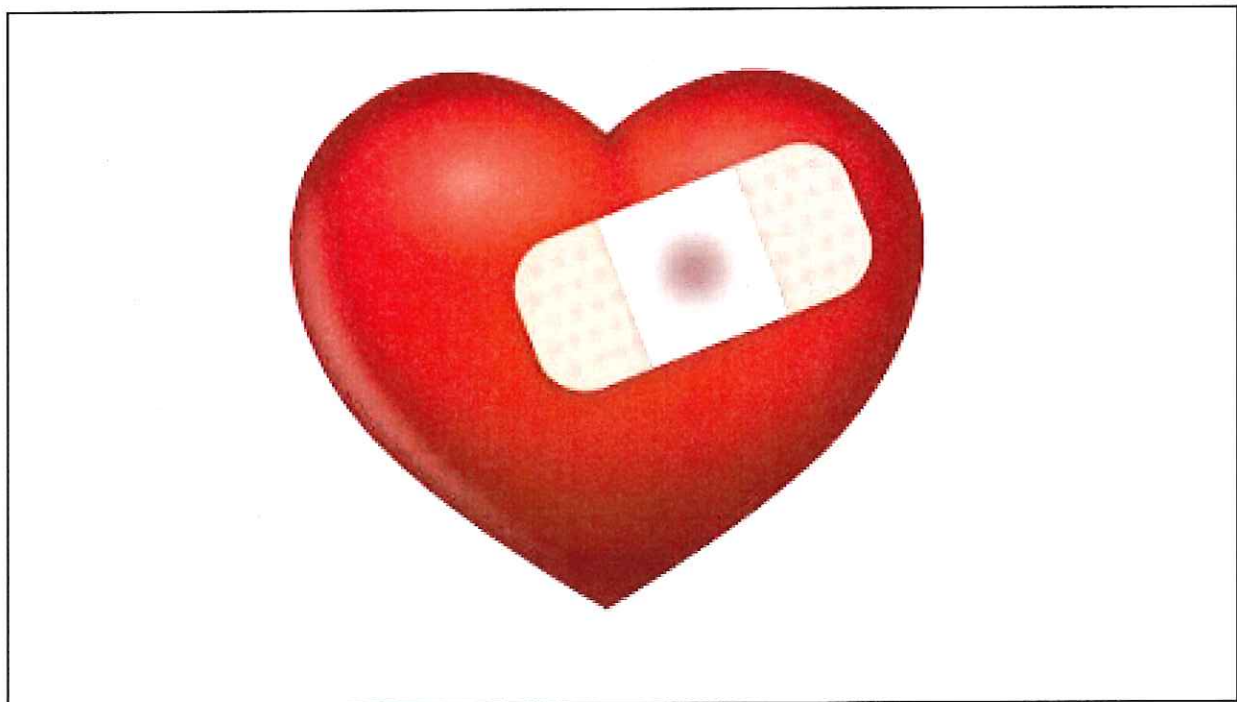


<p>Joining In</p> 	<p>Inviting Others</p> 	<p>Rules for games.</p> 
<p>Can I play?</p> 	<p>Do you want to play?</p> 	<p>Take Turns</p> 
<p>How do you play?</p> 	<p>Lets play</p> 	<p>Wait Nicely</p> 
<p>Maybe next game?</p> 	<p>What game do you like?</p> 	<p>Talk and Share</p> 

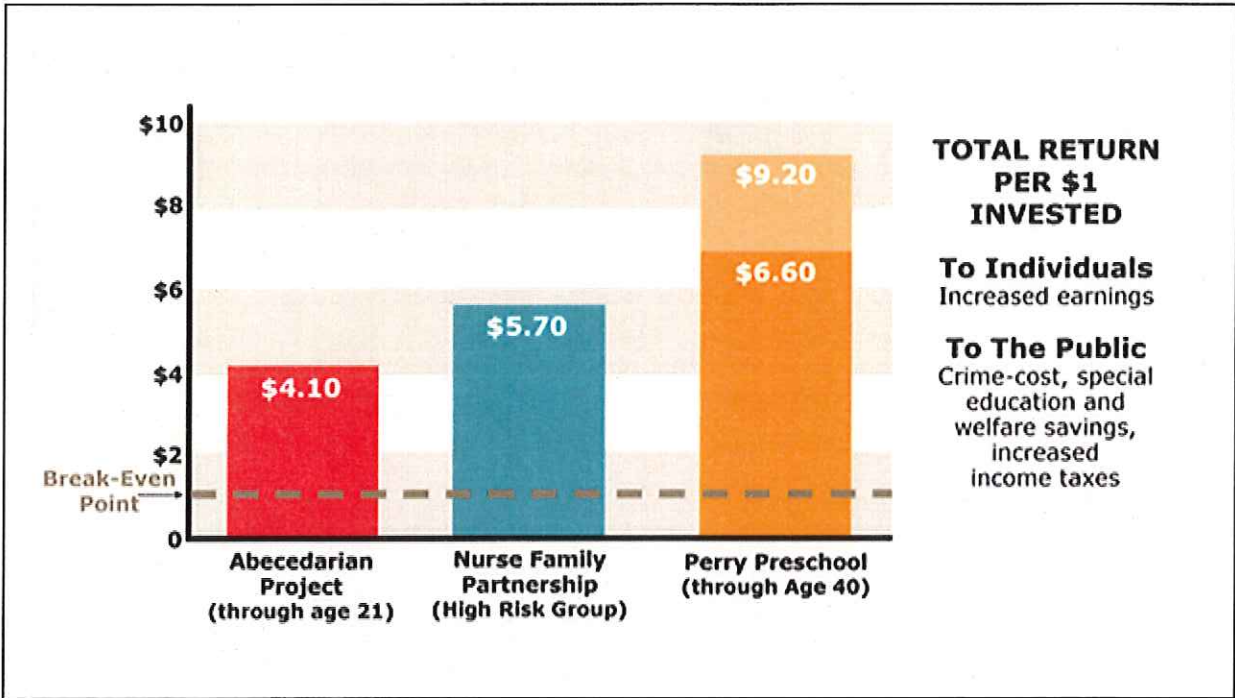
greeting	songs	story
		
play	calendar	game
		
play	calendar	game
		
greeting	songs	story
		

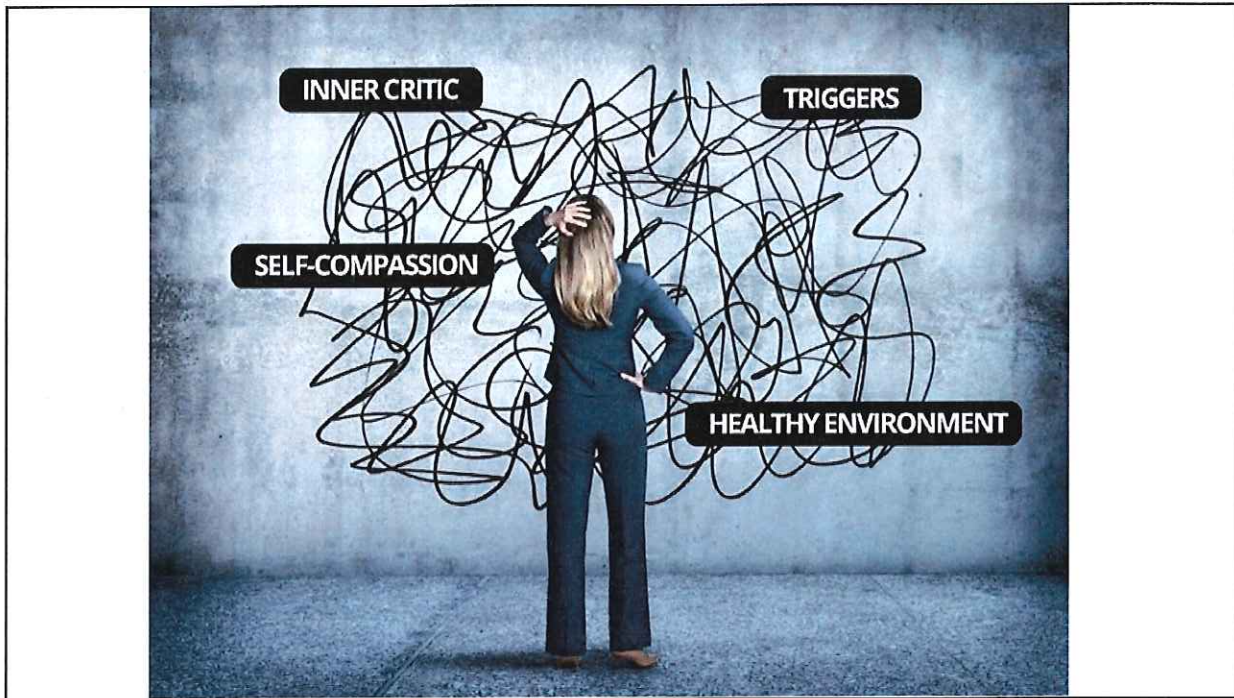












Summary:

- Time and attention to those "acting out"
- Recognize changes in behavior require rewiring the brain's functions
- Things take time
- Assume the best about a child (family)
- Sense of safety
- Arrange individual time (1 to 1)
- Soft yet firm
- Volume. Tone. Posture.
- Use rubrics when appropriate
- Positive language
- Model behavior
- Be an advocate
- Take care of yourself



Objectives for Today's Training:

- Participants will
 - Understand the basic biological foundations of ACEs
 - Be able to explain key elements of the ACE Score (i.e. does response, highly inter-related, etc.)
 - Identify personal action steps
 - Be able to explain what this means for children and their families



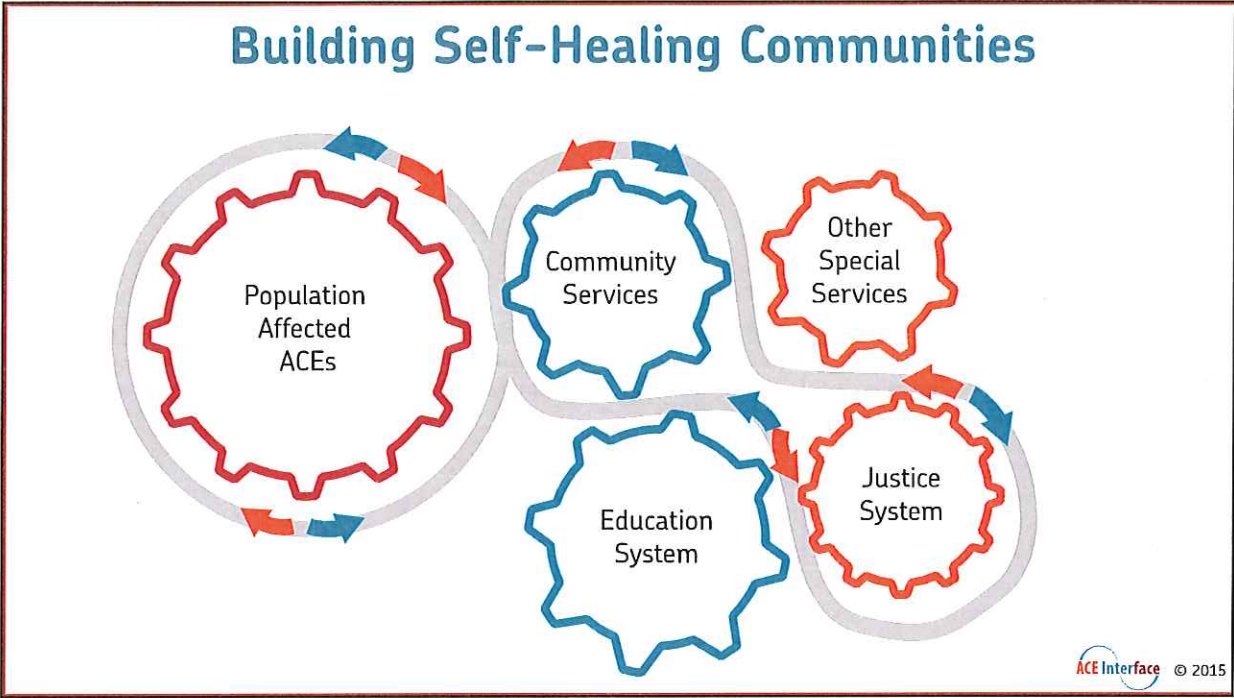
How are you feeling about information shared related to the ACE study?

ACE Interface © 2016

Reflection



ACE Interface © 2015



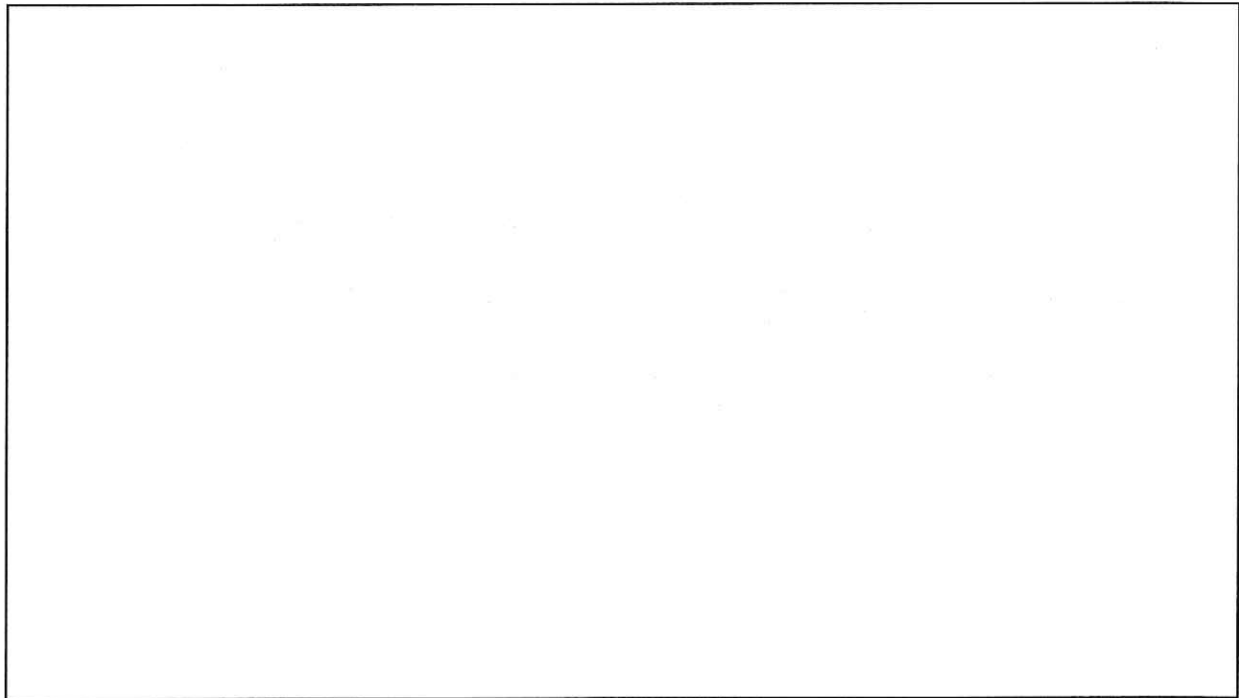


ACE Interface
Building Self-Healing Communities

Thank YOU!

www.aceinterface.com

Design by  www.CryanDesign.com  © 2015

A screenshot of a YouTube video player. The video title is "Baby Shark Dance | Sing and Dance! | Animal Songs | PINKFONG". The channel name "PINKFONG" is visible. The video thumbnail shows the text "Baby Shark" in large blue letters over a blue background with a white shark fin and a yellow shark tail. The video progress bar shows 0:10 / 2:16. The YouTube logo and various control icons are visible at the bottom of the player.

Baby Shark Dance | Sing and Dance! | Animal Songs | PINK...

PINKFONG

Baby Shark

MORE VIDEOS

0:10 / 2:16

YouTube

The viral children's video "Baby Shark," which has become a global phenomenon. (Pinkfong)

Embedded “Affirmations” in your care:

- Regaining a sense of control;
- “You’re good at that!”
- Safe spaces
- Anticipate challenges and provide support
- Be aware of “silent suffering”
- Recognize good days and bad days
- I’m here
- Understand there is help
- Use music and other forms of expression
- Break things into steps

“Still Face” Experiment

<https://www.youtube.com/watch?v=apzXGEbZht0>

Costs of Cancer - Final V x

Secure | <https://www.fightcancer.org/sites/default/files/Costs%20of%20Cancer%20-%20Final%20Web.pdf>

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Cancer is one of the leading causes of death and disease in the U.S. The American Cancer Society (ACS) estimates that roughly 1.7 million new cases of cancer will be diagnosed in the U.S. in 2017¹ and more than 15 million Americans living today have a cancer history.² Not only does cancer take an enormous toll on the health of patients and survivors—it also has a tremendous financial impact.

For patients and their families, the costs associated with direct cancer care are staggering. In 2014 cancer patients paid nearly \$4 billion out-of-pocket for cancer treatments. Cancer also represents a significant proportion of total U.S. health care spending. **Roughly \$87.8 billion was spent in 2014 in the U.S. on cancer-related health care.** These costs were paid by employers, insurance companies, and taxpayer-funded public programs like Medicare and Medicaid, as well as by cancer patients and their families.

Total U.S. Expenditures for Cancer by Source of Payment—2014

Source of Payment	Percentage
Private Insurance	46%
Medicare	27%
Other*	19%
Medicaid	4%
Patient Out-of-Pocket Costs	4%

Patient Out-of-Pocket Costs = \$3.9 billion

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