



**UNDERSTANDING**  
Adverse Childhood Experiences

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Building Self-Healing Communities



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Today, I will talking about a training I have recently received: ACES or Adverse Childhood Experience.



The scientific debate over nurture vs. nurture is over. We know both impact us. But there is more to learn about how.

The Adverse Childhood Experience, or “ACE” Study explain how and why adversity can predict risks for physical health, behavioral health and productivity in individual and in a population.

This is great news! What’s predictable is preventable. Protection, prevention, and resilience promotion can profoundly improve outcomes for generations to come.



ACEs scientists challenged themselves to think differently about the facts they could see.

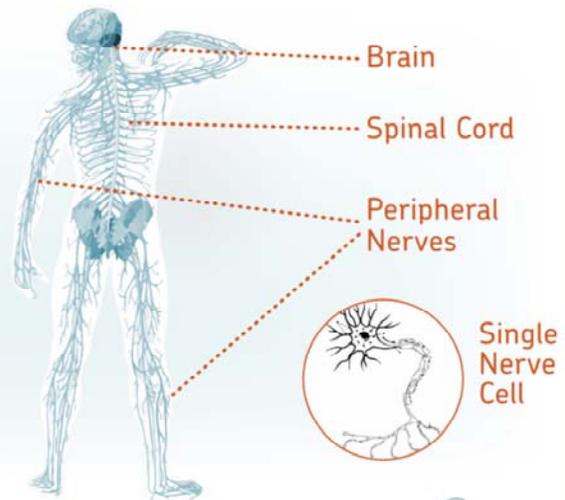
They were impatient with the amount of heart disease, diabetes, depression and suffering that exists in our country.

Together, they made a scientific discovery powerful enough to profoundly change the future of the public's health.

# HUMAN NERVOUS SYSTEM

Nervous system  
ORCHESTRATES BODY  
FUNCTIONS & PERCEPTIONS

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



To understand the ACE Study, you need to understand a little bit about brain development.

We know that the nervous system takes in input every second, almost instantaneously, to help us understand and respond to the world we live in. Nervous system cells or “neurons” process and transmit that information with the a central purpose of keeping us alive.

When children grow up with sustained danger, the child’s brain is hard-wired to “fight, flight, freeze”, resulting in a child who is quick to anger, slow to sooth, hypervigilant, and hyper-reactive. These same characteristics can also lead to cardio vascular disease, mental health challenges, and productivity problems.

# ADAPTATIONS VS EXPECTATIONS

WHEN BIOLOGY  
collides  
WITH SOCIAL  
EXPECTATIONS  
we run into  
**TROUBLE**



ACE Interface © 2014

When our biology collides with social expectations, we run into trouble.

A person from a very safe and sheltered childhood will have trouble in a chaotic environment... unless he has learned some very specific skills.

Likewise, when a child adapted to a dangerous world is asked to sit still, share, cooperate or use words as a first choice, everyone may be in for a rude awakening, and the child is likely to disconnect.



Most prior studies of the health and social effects of childhood, focused on single type of adversity such as physical or sexual abuse.

The ACE Study broadened the picture to include multiple types of childhood stressors, health issues, and social problems.

More than 17,000 adults, 19 to 94, participated in Kaiser Health's survey about ACEs. It is important to realize that most participants were well educated, predominantly white, middle class people, who had access to some of the best health care.

## Adverse Childhood Experiences **ARE COMMON**

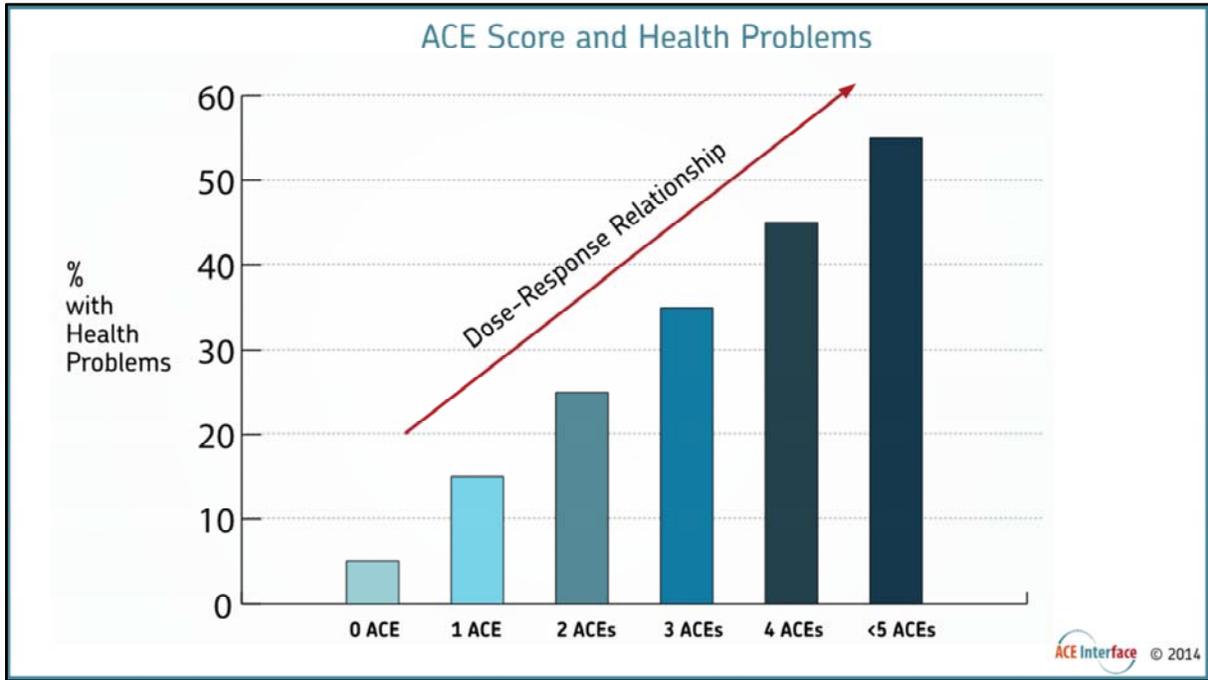


These are the 10 categories of adverse childhood experiences that were studied.

Household Dysfunction ACEs include growing up with a mentally ill or substance abusing household members, parental separation or divorce, witnessing intimate partner violence—specifically having a battered mother, or criminal behavior as evidenced by having a household member imprisoned.

Emotional, physical, and sexual abuse as well as emotional and physical neglect were studied.

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



So, let's look at numbers:

People who report higher ACE Scores are more likely to have health and social problem. 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.

## ACEs are Common, Interrelated, Powerful



High ACE Scores  
in Population



Increased Risk of Multiple  
Health and Social Problems



Intergenerational  
Transmission of ACEs

People with higher ACE Scores are more likely to have multiple mental health, physical 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.

## 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*

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

Three protective systems interact and guide positive adaptation: attachment, belonging with caring and competent people, and a protective community, faith, or culture.

# 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.

ACE interface © 2014

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.

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.

## Understanding Adverse Childhood Experiences *Building Self-Healing Communities*

The ACE Study confirms, with scientific evidence that adversity during development increases the risk of physical, mental and behavioral problems later in life. The ACE Study and other research using the study's framework have taught us that ACEs are the leading cause of health and social problems in our nation and the most powerful determinant of the public's health.

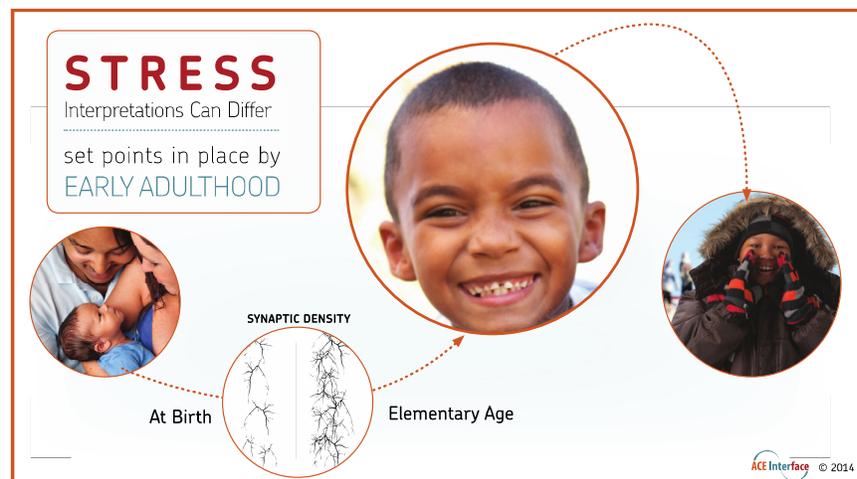
### **Brain Development is Experience-Dependent and Sequential**

The wiring of the brain – the making of complex neural networks – is experience dependent. What gets experienced the most tends to lead to more robust connections between nerve cells. Over time, these connections form robust networks. The least “experienced” connections tend to withdraw at about the time of puberty.

Experiences that cause stress chemicals to be continuously produced have a big impact on development of brain cells and the connections among cells. When stress hormones, like cortisol, are at high levels in the body for long periods of time they can be toxic to developing brain cells. This toxicity impacts the functioning of brain regions, hinders development of healthy neural networks, and can cause brain cells to die. When danger is episodic or long lasting during childhood, developing brains prepare and adapt to respond to the experiences of an unpredictable and dangerous world. The people whose brains adapt to a dangerous or stressful world are more likely to survive when life is tough; those whose brains adapt to a safe world are more likely to be prepared to meet society's expectations in tranquil times.

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. Stress may be interpreted by the brain as something we can tolerate and work through or as something that is overwhelming and requires an immediate response. In the latter case, a small amount of stress may be perceived as crisis. Our set-points for that interpretation are largely in place by early adulthood.

Toxic stress during childhood can effect processing of sound, development of verbal language, perception of social cues and facial expressions, ability to coordinate movement or to integrate rational ideas when in a highly emotional state. Toxic stress can effect brain interaction with body systems and lead to disease, disability and social/relational problems throughout the life course. *But childhood times are also windows of opportunity for building resilience – after all, the developing brain is sensitive to all kinds of experience.*



Human development is a magnificent dance of experience and adaptation generating age-appropriate capacities for feeling, thinking and responding to the world around us.

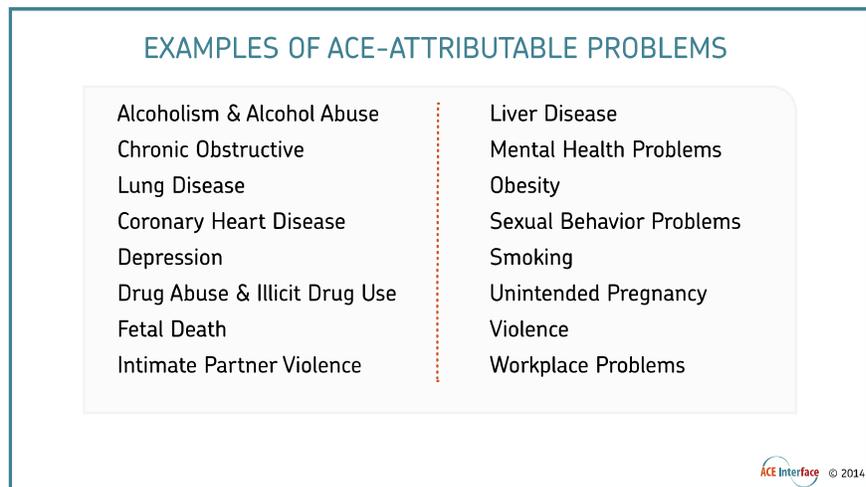
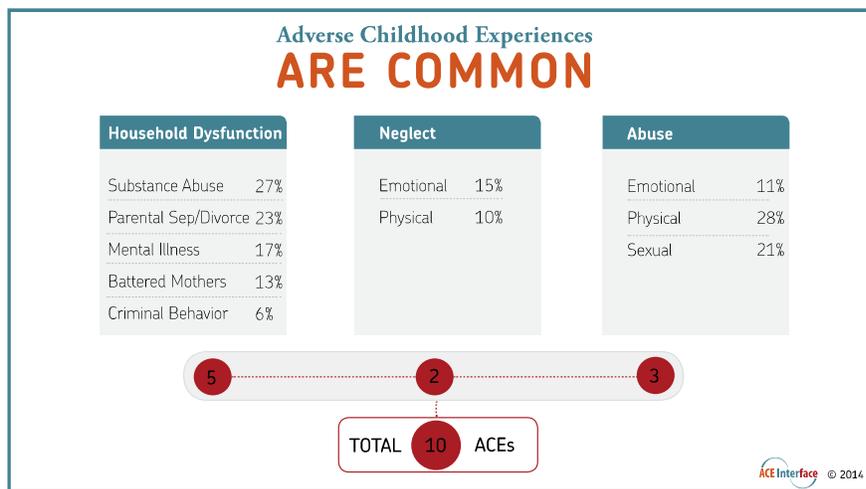
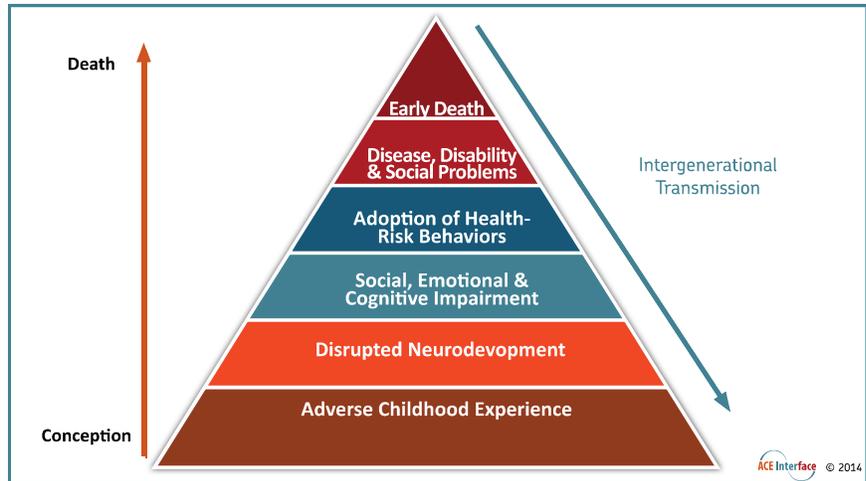
## The ACE Study

The ACE Study considers the effects of childhood adversity on population health and wellbeing. A partnership between Kaiser Permanente in San Diego and the Centers for Disease Control and Prevention in Atlanta, The ACE Study takes a broad public health perspective of the effects of multiple forms of childhood adversity on population health. The ACE Study is the largest of its kind, with over 17,000 participants.

The ACE Pyramid (top right) represents the life course model of the ACE Study: ACEs disrupt neurodevelopment, which in turn leads to social-emotional and cognitive adaptations that can then lead to risk factors for major causes of disease, disability, social problems, and early death. The ACE Study is designed to help us understand how Adverse Childhood Experiences influence human development and life course health in predictable ways.

The ACE Study considers ten categories of childhood adversity (middle right). Study findings include:

- 1. ACEs are common across all socio-economic and culture/ethnicity lines.**
- 2. ACEs are interrelated.**
- 3. ACE accumulation has a powerful impact on public health.**
- 4. ACEs tend to be held in the body, leading to mental, physical, and behavioral health problems throughout the life course.** (lower right)



As the ACE Score goes up the risk of many health and social problems goes up in a “dose-response” fashion. As a result, as the ACE Score goes up in a population, the percent of people with these problems also goes up. It is also important to understand that some of those problems become ACEs for the next generation—thereby perpetuating the cycle of adversity and their attendant problems.

### ACE Prevention: Our Powerful Legacy

ACE Prevention is the greatest opportunity for improving the well-being of human populations. ACEs are considered the most powerful determinant of the public's health because of the breadth of impacts – from heart disease to homelessness, from depression to violence – and because of the large percent of each of these problems that are attributable to ACEs.

Epidemiologists use a standard statistical calculation to estimate the amount of a disease or condition that is caused by a disease agent – called the Population Attributable Risk. The dark area in the center of the graphic (upper right) represents the portion of each condition that is attributable to ACEs – from 22% of asthma to 67% of life dissatisfaction. As we are successful preventing accumulation of ACEs in the next generation, we will reduce all ACE-attributable problems accordingly.

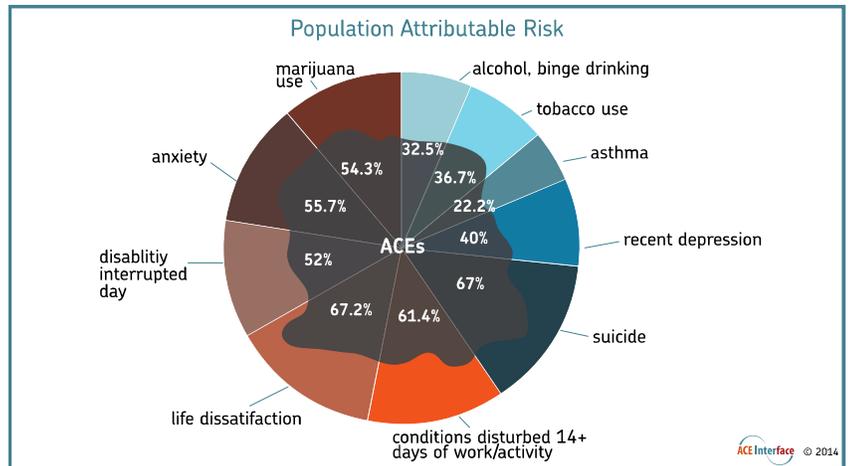
### Protective Systems Promote Resilience

Three protective systems interact and guide positive adaptation: 1) individual capabilities, 2) attachment and belonging, and 3) community, faith, and cultural processes. These three systems are nested: people do best when they are living in flourishing families and communities.

People most affected by ACEs are leading formation of *Self-Healing Communities* that have a rhythm of engagement that includes:

1. **Safe and regularly scheduled ways of coming together for belonging and cooperative action,**
2. **Networked social and inter-organizational processes characterized by learning, reciprocity, social bridging, and efficacy,**
3. **Shared times and venues for critical reflection and decision making about hope-filled action,**
4. **Continuous expansion of opportunities for informal and formal leadership.**

*Building Self-Healing Communities* is about investing in the people who have the most at stake—especially people affected by ACEs-- so they can be expert leaders of their own community's change. We live at a time of great hope and promise – the greatest public health discovery of our time is about us. The ACE Study provides a discovery – a common framework and language – that we can use to profoundly improve the health and well-being of our society now and for future generations to come.



### 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*



## Finding Your ACE Score

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

1. Did a parent or other adult in the household **often or very often**...  
Swear at you, insult you, put you down, or humiliate you?  
**or**  
Act in a way that made you afraid that you might be physically hurt?  
Yes No If yes enter 1 \_\_\_\_\_
2. Did a parent or other adult in the household **often or very often**...  
Push, grab, slap, or throw something at you?  
**or**  
**Ever** hit you so hard that you had marks or were injured?  
Yes No If yes enter 1 \_\_\_\_\_
3. Did an adult or person at least 5 years older than you **ever**...  
Touch or fondle you or have you touch their body in a sexual way?  
**or**  
Attempt or actually have oral, anal, or vaginal intercourse with you?  
Yes No If yes enter 1 \_\_\_\_\_
4. Did you **often or very often** feel that ...  
No one in your family loved you or thought you were important or special?  
**or**  
Your family didn't look out for each other, feel close to each other, or support each other?  
Yes No If yes enter 1 \_\_\_\_\_
5. Did you **often or very often** feel that ...  
You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?  
**or**  
Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?  
Yes No If yes enter 1 \_\_\_\_\_
6. Were your parents **ever** separated or divorced?  
Yes No If yes enter 1 \_\_\_\_\_
7. Was your mother or stepmother:  
**Often or very often** pushed, grabbed, slapped, or had something thrown at her?  
**or**  
**Sometimes, often, or very often** kicked, bitten, hit with a fist, or hit with something hard?  
**or**  
**Ever** repeatedly hit at least a few minutes or threatened with a gun or knife?  
Yes No If yes enter 1 \_\_\_\_\_
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?  
Yes No If yes enter 1 \_\_\_\_\_
9. Was a household member depressed or mentally ill, or did a household member attempt suicide?  
Yes No If yes enter 1 \_\_\_\_\_
10. Did a household member go to prison?  
Yes No If yes enter 1 \_\_\_\_\_

**Now add up your "Yes" answers: \_\_\_\_\_ This is your ACE Score.**

# Building Resiliency – Individual, Relational, Community

## Building Positive View

- Deliberate Acts of Kindness (Seligmann, 2011)
  - The most powerful and simple way to momentarily increase your well-being daily is to do 1 deliberate act of kindness for someone else
- Cultivating Gratitude: 3 Good Things (Seligman, Steen, Park & Petersen, 2005)
  - For 1-2 weeks before bed, write down 3 good things that happened to you that day and what your role was in them. This gives you a mental health boost for 6-12 months!
    - Example: The sunset was amazing with all its colors! My role was taking the time to stop and notice it.
- To offset our negative bias, which we all have as a survival mechanism, we must experience 3 good things for every 1 negative experience for our mood to “break even.” To cultivate greater positive emotion, we must have a 6:1 ratio; for every bad experience, we must have 6 positive experiences.
  - Be intentional about what you watch, listen to, and who you spend time with. (Fredrickson, 2009)
  - HEAL Model (*Hardwiring Happiness*, Hansen, 2013): Take in the good using this pneumonic HEAL: Have a positive experience, Enrich, Absorb it, and (optional) Link the positive experience in negative circumstances in order to soothe and even replace it

## Building Self-Regulation

- Meditation & Mindfulness
  - Reduces rumination and stress (Chambers et al., 2008; Hoffman et al., 2010; Farb et al., 2010)
  - Boosts working memory and focus (Jha et al., 2010; Moore & Malinowski, 2009)
  - Lessens emotional reactivity and boosts cognitive flexibility (Ortner et al., 2007, Siegel, 2007)
  - Creates greater relationship satisfaction and increases happiness (Barnes et al., 2007, Waschs & Cordova, 2007)
  - Boosts the immune system (Davidson et al., 2003, Grossman, Neimann, Schmidt & Walach, 2004)
    - **Note:** Prayer and crafts like beading, sewing, woodworking, etc. also put the brain in a meditative state
- Yoga & Exercise
  - Low intensity exercise or yoga decreases cortisol levels, the stress hormone (Hill et al., 2008)
  - Improves brain function and focus (Ratey & Hagerman, 2013)
  - Improves sleep (Singh, Clements, Fiatarone, 1997)
  - Increases dopamine levels and other “feel good” neurotransmitters, which improve mood (Fields, 2011)
- Adequate sleep
  - Improves willpower, focus, and memory (McGonigal, 2013)
  - Helps with mood regulation (Peterson & Benca, 2006)
  - Most adults should be getting between 7-9 hours of sleep a night; teens, 8-10 hours; preteen, 9-11 hours; 3-5 years, 10-13 hours; 1-2 years, 11-14 hours; and one-year-olds and younger, up to 17 hours a day (National Sleep Foundation)
- Healthy Eating:
  - Lowers inflammation (Willett & Skerrett, 2005)
  - Improves overall health and decreases risk of heart disease, stroke, cancer, obesity, and other ailments (Willett & Skerrett, 2005)
  - Helps with mood stabilization. The food we eat impacts our body’s ability to make serotonin, a neurotransmitter that stabilizes our mood; 80-90% of it is produced in the digestive tract! (Kim & Camilleri, 2000)

## Building Self-Efficacy

- Set mini-goals (too small to fail): When we reach a goal, it increases our sense of self-efficacy, the belief that you can perform a task or manage a situation. It also gives our brain a dopamine hit.
  - Examples: 1 push-up a day, 1 mindful breath an hour, read 30 words a day, etc.
- For children: Parents/caregivers can nurture realistic self-efficacy in children by praising honestly, setting short-term goals, and helping children learn from setbacks. Having children complete meaningful tasks around the house or school can also help build self-efficacy by making them realize they have an important role to play in their communities.

## Caring and Competent Relationships

- Competency in adults means we can regulate our emotions/ reactions and we have a good understanding of child development so that we do not mistake normal developmental behavior for disobedience or a child being “bad.”

- Practicing and modeling self-regulation will go much further than telling kids to manage their emotions and expecting them to do it on their own.
- Emotions can transfer, so check your mood! Be intentional. What do we want to pass along to our children? (Bourg Carter, 2012)
- Positive touch can go a long way (Kuchinskas, 2009)
  - Holding a handshake or a hug for at **least 6 seconds** releases oxytocin, the neurochemical that helps us feel connected and loved, for both individuals.
- Our words are powerful! Shame is not the same as guilt. (Brown, 2013)
  - Shame says, “I am bad,”; guilt says, “I did something bad.”
    - **Shame= focuses on the individual. Guilt= focuses on the behavior.**
  - When children are shamed (i.e. “you are stupid,” “why can’t you do anything right,” “you are lazy,” etc.) they begin to believe something is wrong with them.
  - When children are talked to in a way that focuses on their behavior, (i.e. “it doesn’t seem you thought through that decision very well”; “it was not a good idea to stay up until 3am playing video games when you knew you had a big test to take today”; etc.) they are more likely to feel guilty instead of ashamed and will want to change their behavior.
  - *Shame is highly correlated with addiction and depression whereas guilt is inversely correlated.* What this means is the more shame an individual feels, the more likely they will be depressed or struggle with addiction. On the other hand, when someone feels guilty, they are less likely to feel depressed or develop addictive behavior.
  - Guilt can motivate us to change because guilt focuses on our behavior!
- Fixed vs. Growth mindset (Dweck, 2007)
  - Fixed mindset: I am good at something or I am not good at something
  - Growth mindset: I can get good at something if I work hard, have good strategies for improving, and ask for help
  - Fixed mindset focuses on the **product** (“that is a beautiful picture,” “you are very smart,” and “you are a great singer”)
  - Growth mindsets focuses on the **process** (“tell me about your picture and how you made decisions about what colors and shapes to use”; “you must have studied really hard to get that A”; and “you have a beautiful voice and I can tell you practice.”)
- Relational health is a better predictor of outcomes than ACEs! (Perry, 2016)
  - We all need people we can talk to. Having someone to “dose” with (share with) and then space to process more on our own is powerful
  - Someone with good relational health and a high ACE score will have fewer physical, mental, emotional, and social issues than someone with poor relational health and an ACE score of 0

### Community, Culture, and Spirituality: (ACE Interface, 2013)

- Fostering thriving communities is about empowerment and includes:
  - Expanding leadership: Go beyond the elected officials and department heads. Tap into the leadership of those most impacted by ACEs to get a better idea of how to make meaningful change
  - Coming together: Bring the community together often to build relationships and share stories
  - Creating shared meaning: Having a common language and understanding of ACEs, trauma, resiliency, and previously effective strategies from the community, will go a long way in generating powerful “next steps.”
  - Working towards meaningful results: Everyone in the community has a role in reducing ACES in the next generation, and supporting adults and children with high ACEs in the community. Figure out the role of the school, the clinic, the after-school programs, the housing department, etc.
- Cultural activities, clubs, organizations, afterschool programs, churches and spiritual practices, social supports, and safety nets are all important factors in building a healthy community
- Help that Helps: Research about Washington State communities has shown that feeling supported and hopeful, and having at least 2 people to call on for concrete help can have a powerful impact
  - Feeling supported dramatically improves mental and physical health, ability to work, etc.
  - Having at least 2 people to call on for concrete support improves diabetes outcomes, decreases depressive symptoms, and improves mental illness symptoms

