The Role of Early Adversity and Trauma in Chronic Pain and Illness, and How We Can Heal

Conventional wisdom tells us what doesn’t kill you makes you stronger
But the science tells us that far more often, the opposite is true.

Childhood, disrupted

Adversity in childhood can create long-lasting scars, damaging our cells and our DNA, and making us sick as adults

The Greatest Study Never Told

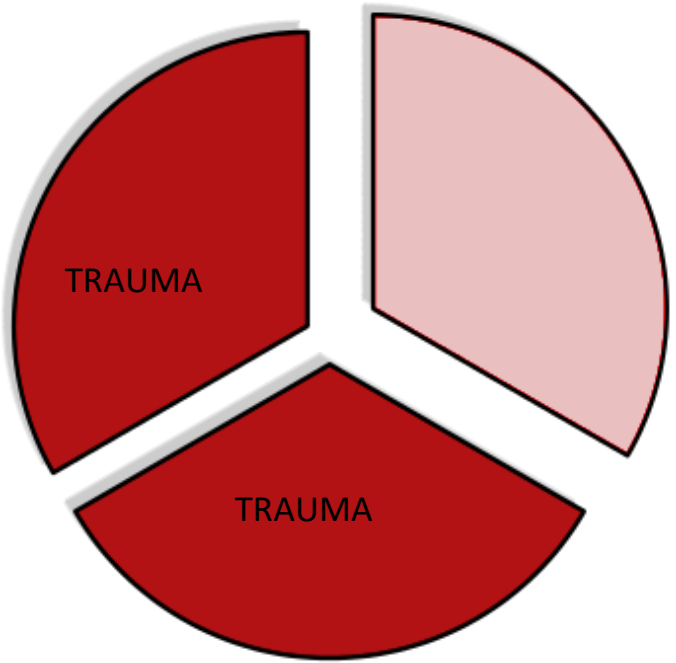
Adverse Childhood Experiences (ACES)

Felitti and Anda (1998)

- ➔ 17,000 adult patients
- ➔ Patients were in their mid-fifties and college educated
- ➔ Compared childhood experiences to adult health records
- ➔ 64% had encountered one or more categories of Adverse Childhood Experiences (ACEs)
- ➔ 40% had faced 2 or more categories of ACEs
- ➔ 1 in 8 had experienced 4 or more ACEs

⅔ of adults

carry wounds and trauma from childhood into adulthood.



What kind of trauma?

ACEs Questionnaire

1. **Chronic Humiliation.** Did a parent or other adult in the household 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?
2. **Physical Abuse.** Did a parent or other adult in the household often push, grab, slap, or throw something at you? Or ever hit you so hard that you had marks or were injured?
3. **Sexual Abuse.** 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 try to or actually have oral, anal, or vaginal sex with you?
4. **Emotional Neglect.** Did you 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?
5. **Physical neglect.** Did you often feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? Or parents were too drunk or high to care for you/take you to the doctor if you needed it?
6. **Loss of a Parent.** Were your parents ever separated or divorced? Or did a parent die before you were 18?
7. **Watching Mother Be Abused.** Was your mother or stepmother: Often pushed, grabbed, slapped, or had something thrown at her? Or sometimes or often kicked, bitten, hit with a fist, or hit with something hard? Or ever repeatedly hit over at least a few minutes or threatened with a gun or knife?
8. **Parent with Addiction in Home.** Did you live with anyone who was a problem drinker/alcoholic/ use drugs?
9. **Parent with Mental Illness.** Was a household member depressed or mentally ill or did a household member attempt suicide?
10. **Incarcerated Family Member.** Did a household member go to prison?

ABUSE

Physical

Emotional

Sexual

NEGLECT

Physical

Emotional

HOUSEHOLD DYSFUNCTION

Mental Illness

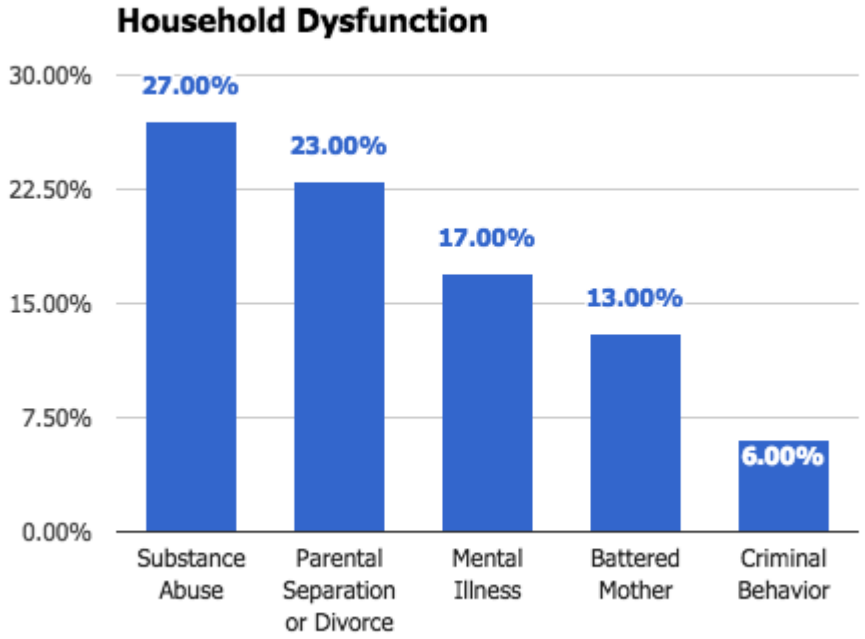
Incarcerated Relative

Mother treated violently

Substance Abuse

Divorce

Prevalence of Adverse Childhood Experiences



ACEs Predict Health Outcomes

➔4 or more categories of ACEs

- ◆ Twice as likely to be diagnosed with cancer
- ◆ Four and a half times more likely to face depression
- ◆ More than twice as likely to develop chronic obstructive pulmonary disease
- ◆ Twelve times more likely to attempt suicide

➔6 or more categories of ACEs

- ◆ Shortens an individual’s lifespan by 20 years

Childhood Adversity is Linked to Adult Chronic Pain

- ACE score of 3 or higher = significantly more chronic pain.
- Men and women who report childhood emotional neglect, verbal or sexual abuse, early parental loss, or having had parents with poor parental bonding styles…
- … are more likely to experience arthritis, back/neck problems, severe headaches, and other chronic pain syndromes as adults.

Girls Face More ACEs

- ➔ Girls are 50% more likely to have experienced 5 or more categories of ACEs.
- ➔ Women who experienced physical abuse in childhood = significantly more likely to report chronic pain in adulthood.
- ➔ Women who report *any* ACE Score = more likely to have pain in late pregnancy.
- ➔ For each category of ACEs a girl experienced, her chance of being hospitalized in adulthood with an autoimmune disease increases by 20%.

Being female

\+ Facing ACEs in childhood

= Developing serious autoimmune disease in adulthood

➔ smoking and lung cancer

➔ drunk driving and car accidents

Similar associations exist between being female, ACEs, and chronic pain.

The past can tick away
inside us for decades
like a silent time bomb
until it sets off a
cellular message that lets
us know
the body does not forget
the past.

What Was Causing Disease in Individuals Who Faced Early Adversity?

- ➔ Were these individuals simply more likely to have poor health habits?
- ➔ People with an ACE Score of 7 or more **who didn't drink or smoke, weren't overweight or diabetic, and didn't have high cholesterol** *still* had a **360% higher risk of heart disease**.

How does chronic childhood stress lead to adult disease?

- ➔ Chronic unpredictable stress floods brain and body with inflammatory hormones and chemicals
- ➔ Inflammatory cocktail causes epigenetic changes to genes that oversee the stress response
- ➔ Children's developing brains and bodies are especially vulnerable
- ➔ Yale research -- kids who experience trauma show changes in genes that oversee stress-response on all 23 chromosomes

(Weder, 2014)

Bear in the Woods Vs. Bear in the Livingroom

Effects of Trauma: Epigenetic Shift

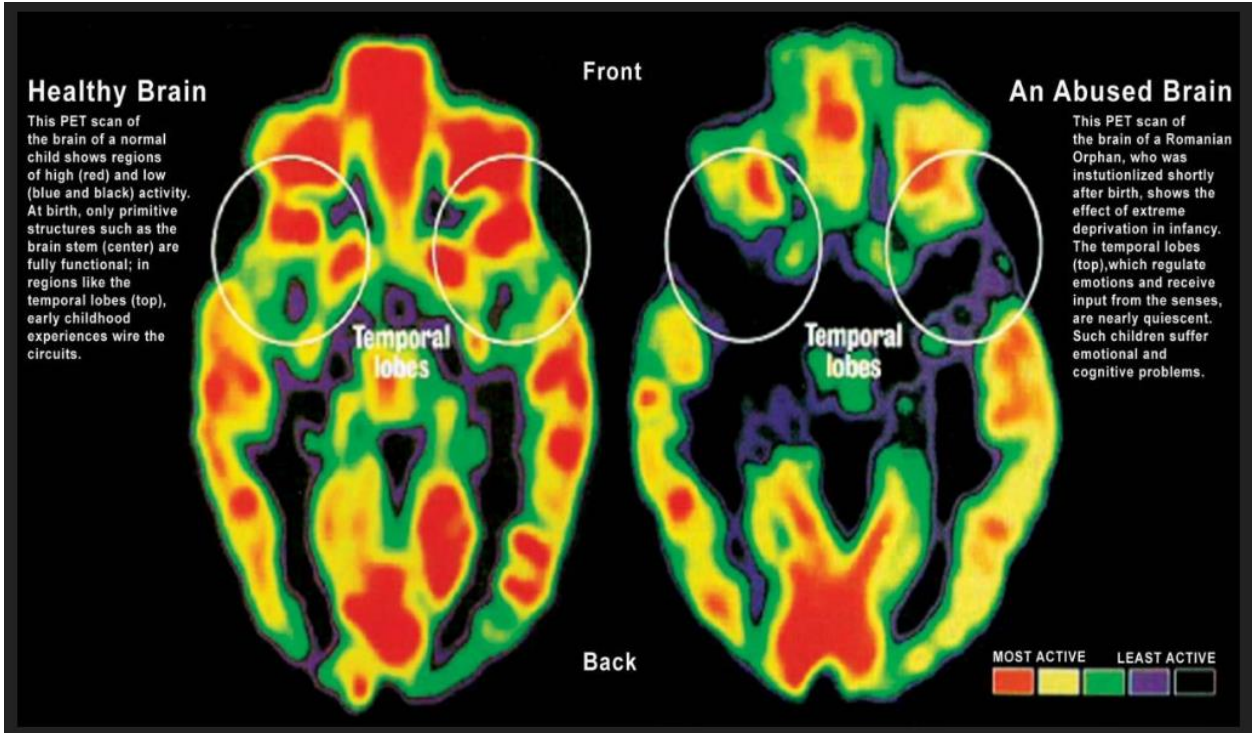
Mild Versus Severe Trauma


The adversity that a child faces doesn't have to be severe abuse in order to create deep biophysical changes that lead to chronic health conditions in adulthood.

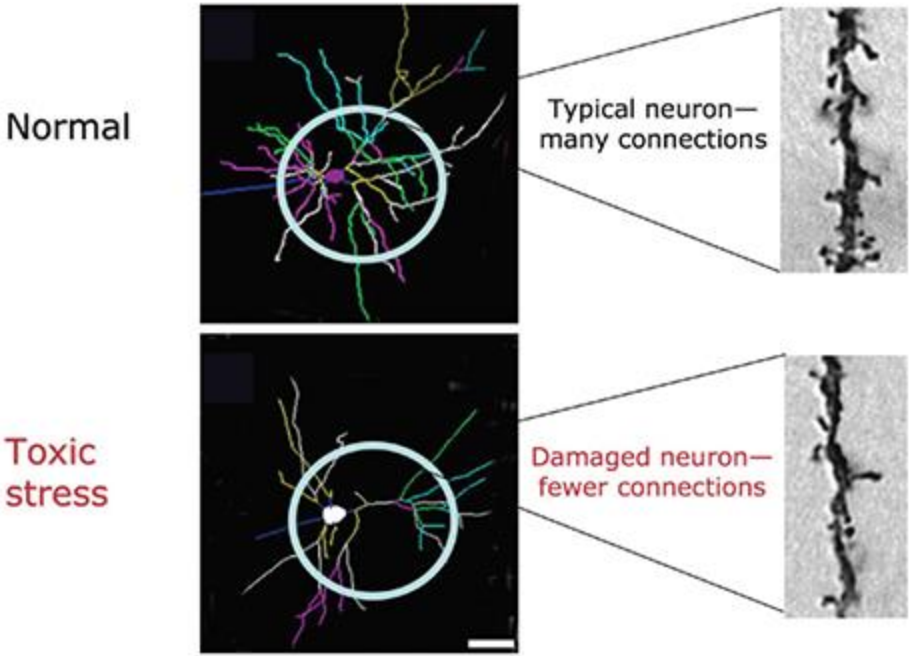
The Truth About “Mild” Trauma

- Brain does not distinguish between “severe” trauma (violence, sexual abuse) and “milder” trauma.
- Common forms of childhood stress can cause just as much damage as a parent who lashes out with angry, physical beatings.
- Other types of childhood adversity: community violence, poverty, bullying, bickering parents, medical trauma.

Effects of Trauma: Brain Activity



Persistent Stress Changes Brain Architecture

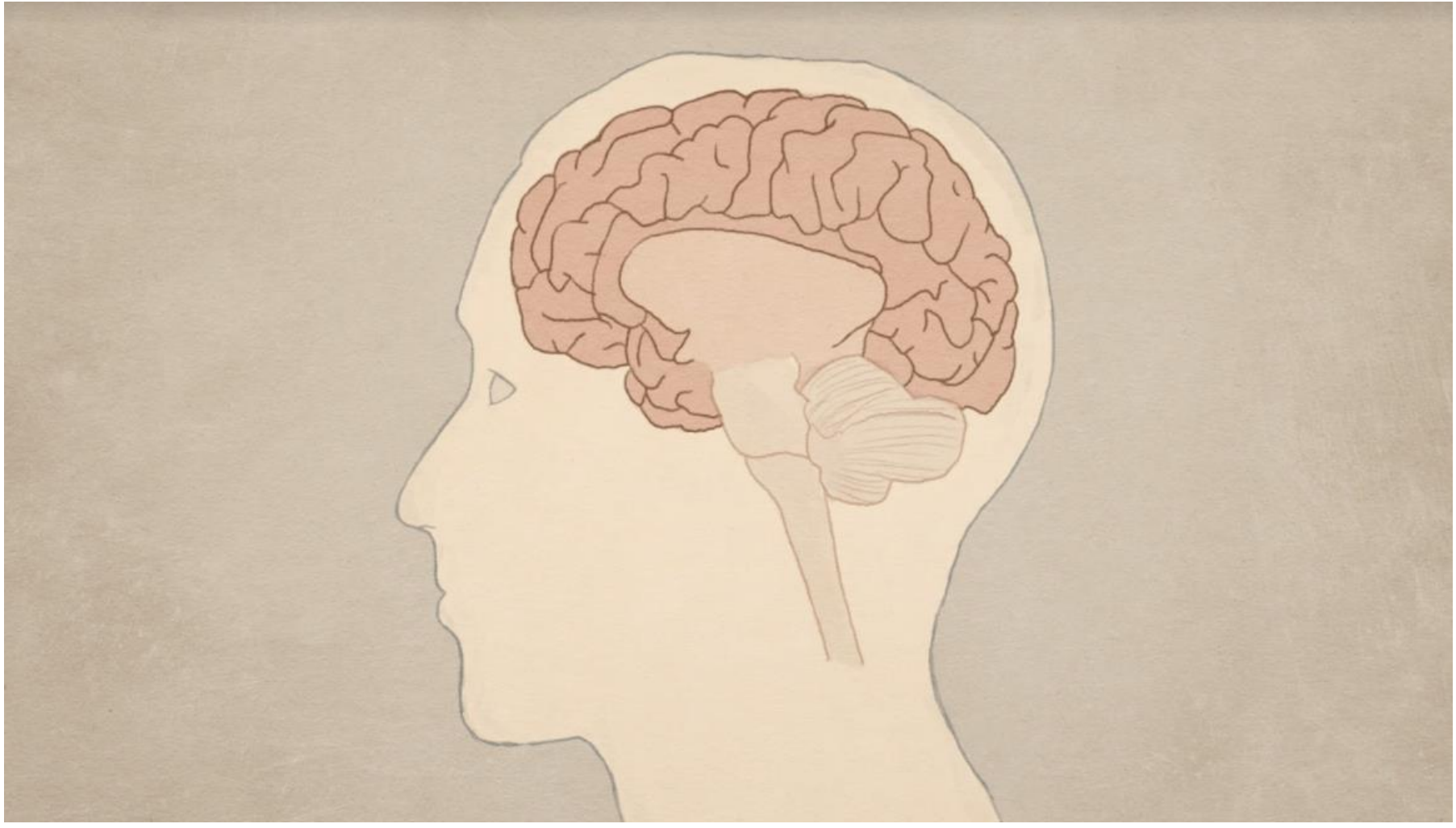


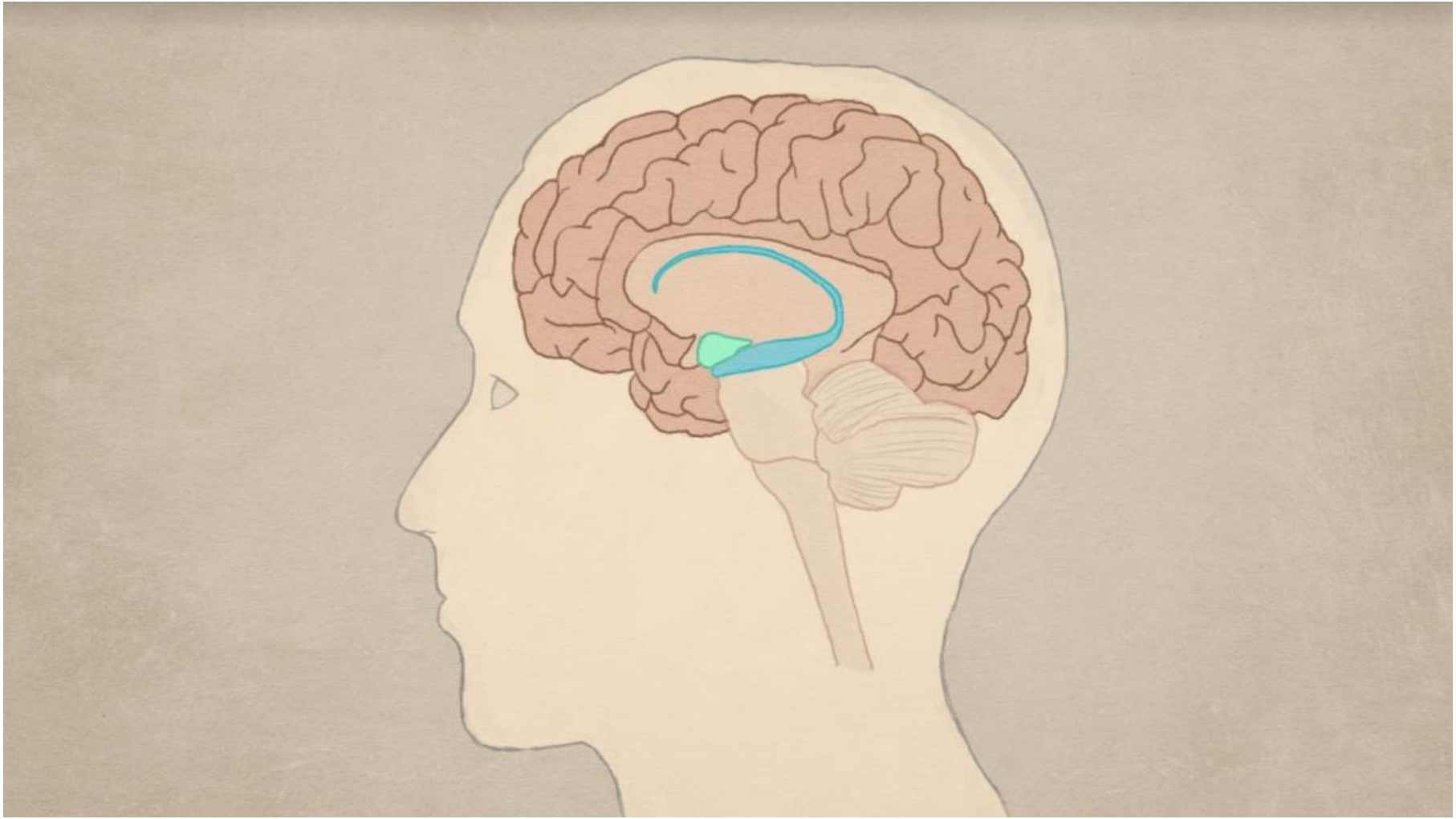
Effects of Trauma: Smaller Hippocampus

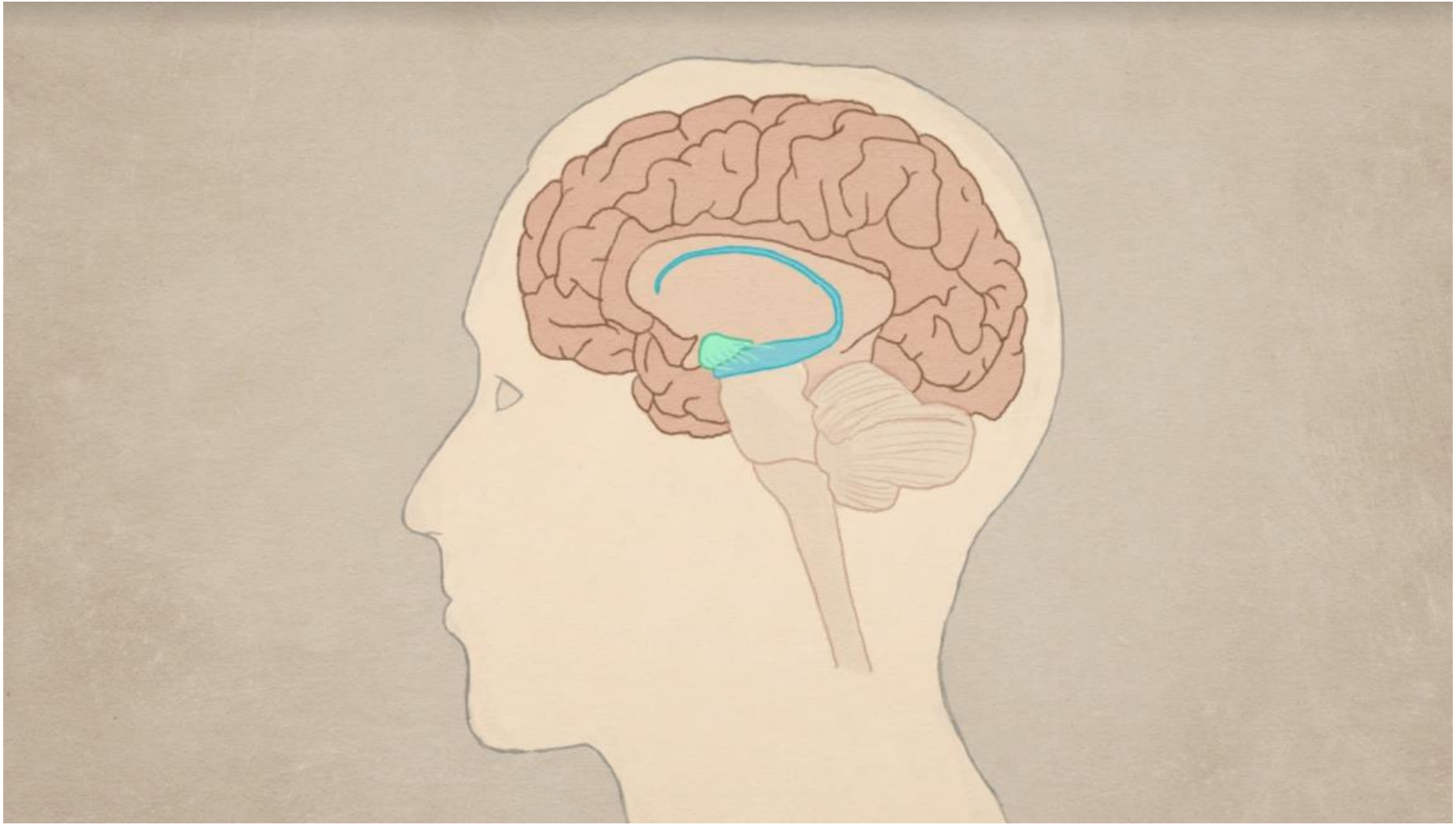
Adversity Affects Boys' and Girls' Brains Differently

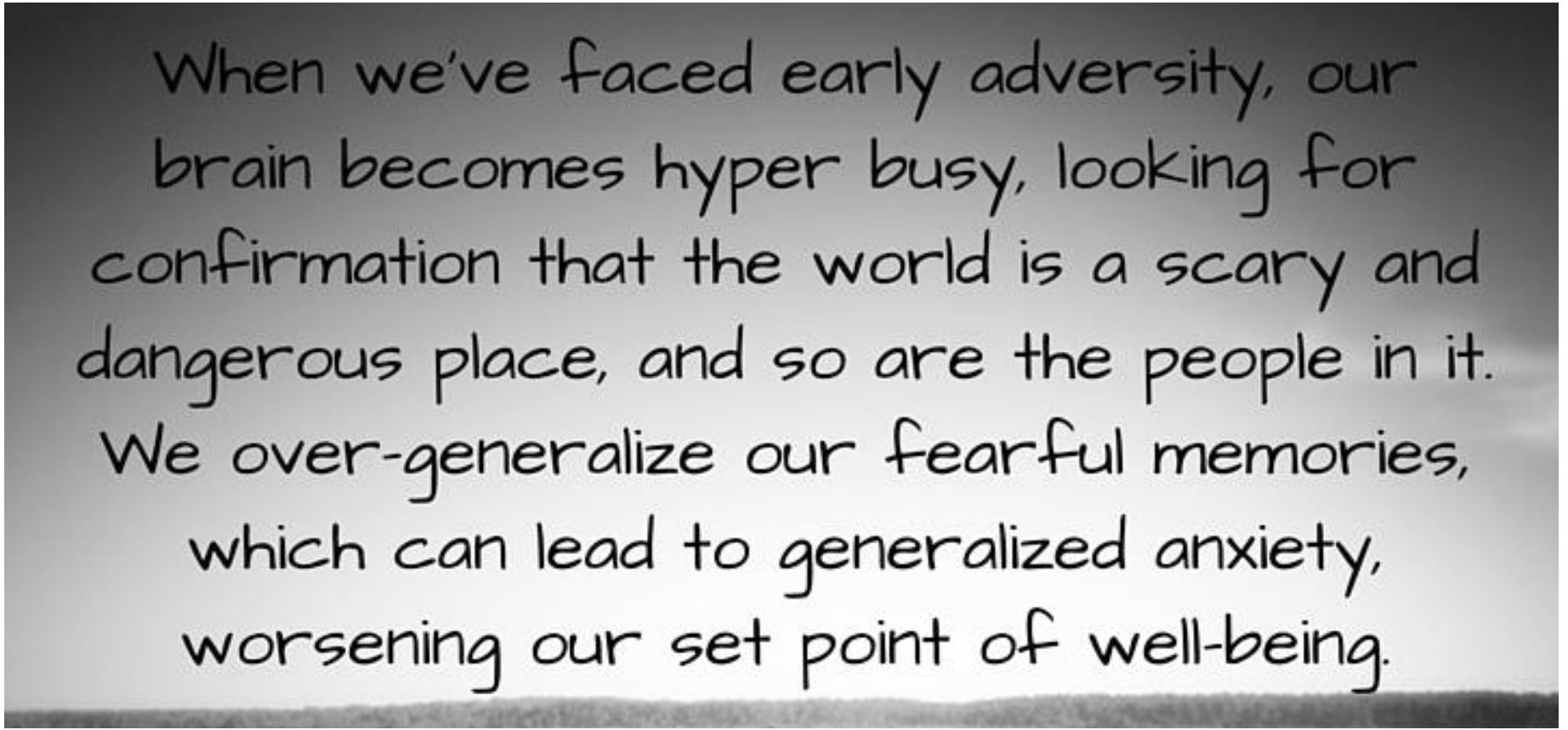
- ➔ girls and boys show weakened neural connections between hippocampus and prefrontal cortex (memories, emotions and decision making).
- ➔ Girls *also* show weakened connections between the amygdala and prefrontal cortex (fear and emotional responses).
- ➔ Leads to more anxiety and depression in girls.
- ➔ Boys show decreases in gray matter in caudate region of brain – responsible for impulse control and behavior.

(Herringa 2013, Edmiston, 2011)








When we've faced early adversity, our brain becomes hyper busy, looking for confirmation that the world is a scary and dangerous place, and so are the people in it. We over-generalize our fearful memories, which can lead to generalized anxiety, worsening our set point of well-being.

Lower Set Point of Well-Being

➔Adverse Childhood Experiences create a **neurobiological straight-jacket**

- We are limited in our ability to respond appropriately to the world around us.
- We are often either over-reacting or under-reacting to the world around us.

The Survival of the Nurtured

- Family dysfunction and familial loss become a neurobiological inheritance.
- Childhood adversity creates profound functional changes in areas of the brain that govern how we recognize our own feelings, voice what we need and want, and empathize with other people
- When we grow up without secure attachment, we will not be wired for love.
- We are not the survival of the fittest; we are the survival of the nurtured and those who are nurtured will survive best.

The Good News:

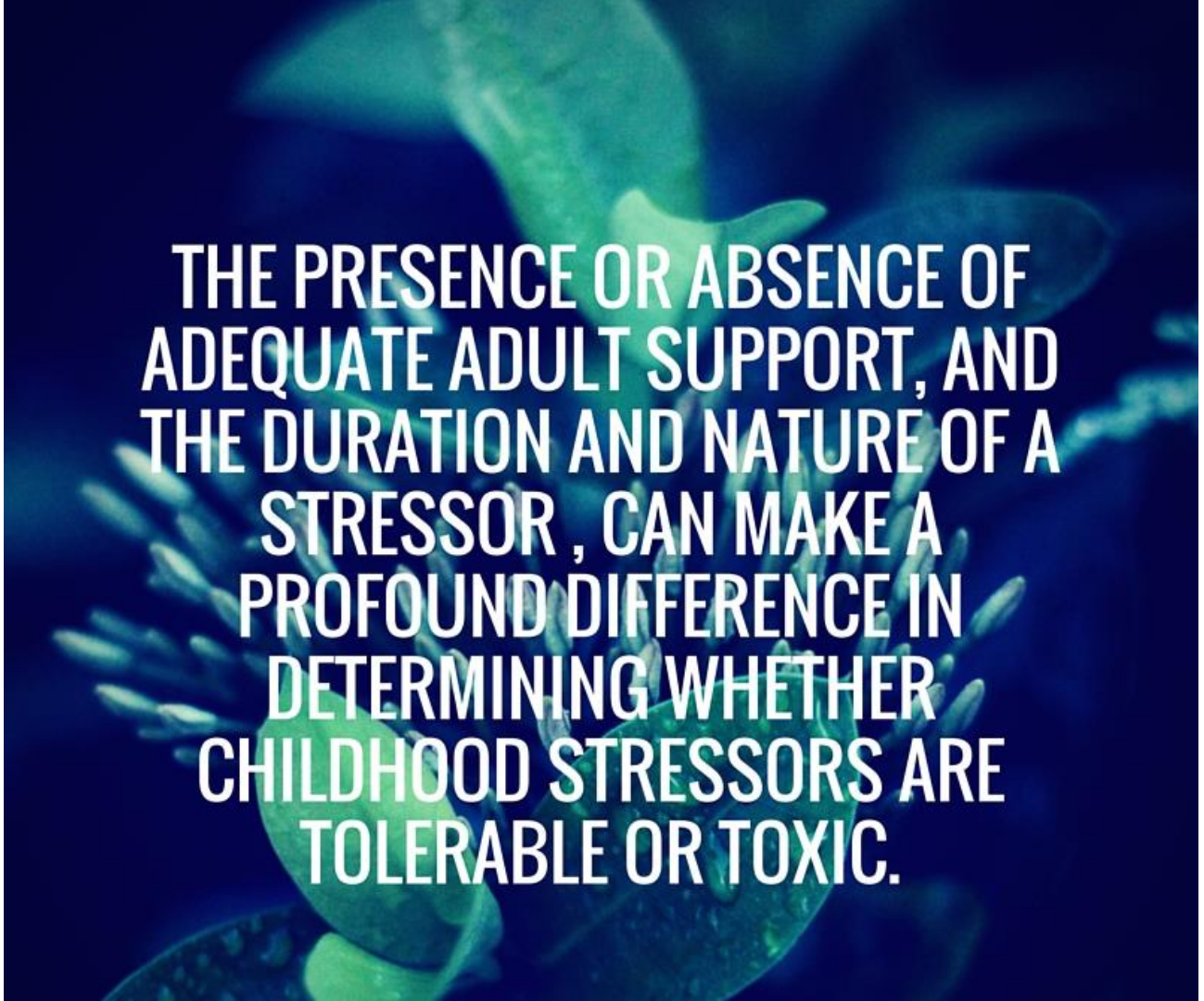
The brain is very plastic

and

we can turn bad epigenetics

into good epigenetics.


Parental love is a boon for life. Feeling loved and seen for who we really are, and supported to become who we hope to become, pays forward (mentally and physically throughout our lives.


THE PRESENCE OR ABSENCE OF ADEQUATE ADULT SUPPORT, AND THE DURATION AND NATURE OF A STRESSOR , CAN MAKE A PROFOUND DIFFERENCE IN DETERMINING WHETHER CHILDHOOD STRESSORS ARE TOLERABLE OR TOXIC.

Healing from Childhood Trauma

1. Take the ACE Survey and learn how ACEs are impacting your health
2. Write to Heal
3. Mindfulness Meditation - the Best Method for repairing the brain
4. Movement Practices -- Yoga, Exercise, Tai Chi, Qigong
5. Loving-Kindness and Forgiveness Practices
6. Heal the Gut -- your microbiome affects your mind
7. Build Social and Emotional Connections
8. Therapeutic modalities including talk therapy, Trauma Focused CBT, Somatic Experiencing, Hypnosis, Neurofeedback and EMDR -- all therapeutic approaches that can help take the charge out of our memories and increase our ability to be present and mindfully aware.

Giving Patients the ACE Survey: Revealing is Healing

In a study of 125,000 patients, those individuals who:

- Were given the ACE Survey by medical practitioner
- *And* whose medical practitioner:
    - Listened to patient as they shared the emotional pain they've lived with all their lives
    - Acknowledged that patient's emotional and physical pain
    - *And* validated the link between their past trauma and their current chronic condition . . .

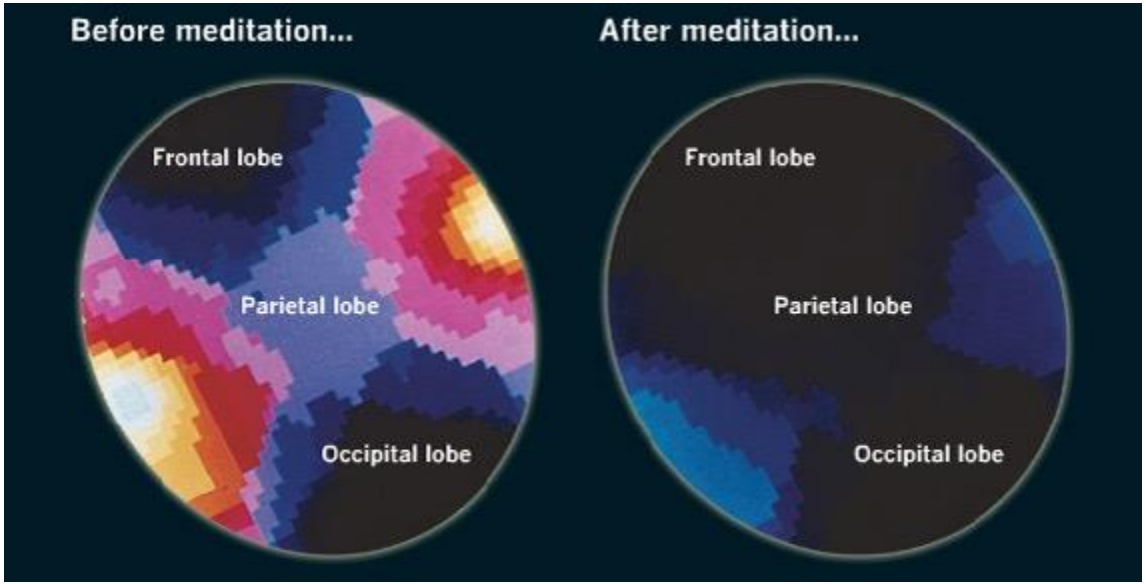
. . . **had a 35% reduction in doctor's visits**, and fewer hospital stays .

Writing to Heal

➔ Research shows individuals who write about emotional upheavals and stressful experiences for 20 minutes each day, over a period of four days:

- need less medical care
- have fewer doctor's visits
- show positive changes in immune function
- improved stress biomarkers
- improved cardiovascular health
- reduced symptoms in asthma
- reduced pain levels in autoimmune diseases such as rheumatoid arthritis
- students' grades improve

Practicing Mindfulness and Meditation Creates New Neural Networks



Patients Who Practice Mindfulness-Based Stress Reduction and Mindful Breathing

- ➔ Show increased gray matter concentration in left hippocampus, posterior cingulate cortex, temporo-parietal junction, cerebellum

  These are brain regions involved in:

  - learning and memory
  - emotion regulation
  - sense of the physical self (somatic experiencing and pain)
  - perception, interpretation and perspective

- ➔ They also show changes in genes that regulate the stress response and oversee output of inflammatory hormones

- Pharma has invented many medications that attempt to dampen down sympathetic nervous system ("stress now system," fight-or-flight response)
  - But there ***is no drug that boosts parasympathetic nervous system*** ("purr now system, relaxation, homeostasis)
  - Slow, deep breathing naturally boosts parasympathetic nervous system -- nature's best and oldest medicine
  - … and it has zero side effects

Name It to Tame It

- ➔ Naming specific emotions as we feel them (sad, happy, glad, excited, worried, anxious, etc.) activates areas of the brain that help us feel less reactive
- ➔ Amygdala quiets down, modulating stress response
- ➔ Mindfully managing stressful thoughts plays crucial role in pain management:
  - pain is not simply measure of tissue damage
  - nociceptors (danger receptors) that carry pain messages trigger neural networks that "fire and wire together"
  - network of brain cells (neurotags) further activated by thinking about pain
  - as pain persists, neural networks become more easily kindled
  - patients ***given this information about pain-brain feedback loops*** show reduction in pain, fewer pain flare-ups

Amplify the Good

Take in the good around you, and see the good in yourself.

- ➔ Look for good facts, for beauty in the world, turn them into good experiences, and marinate in those feelings.
- ➔ Fires and wires up new, positive, neural structures that help put challenges into perspective.
- ➔ Fosters “growth mindset” instead of “fixed mindset.”
- ➔ Neural power of “Self-Talk”: Use your name, talk to yourself as a best friend or benefactor might.

Forgiveness

Forgiveness is not something we do just for the other person.

We forgive so that we can live free of the acute suffering that comes with holding on to our past.

Neurofeedback

- EEG - a map of the brain's electrical activity and reflects a patient's emotional and cognitive states.

- qEEG compares that information, in real time, to a digital database of hundreds of EEGs of healthy subjects.

- Neurofeedback trains the brain to re-establish normal brain-wave activity

Therapies to Desensitize Memory

- Adverse experiences can lead to a wider range of emotional and physical symptoms than PTSD

- **EMDR, Trauma-Focused Cognitive Behavioral Therapy, Talk Therapy, Somatic Experiencing,** are all therapeutic approaches that can help take the charge out of our memories and free our nervous system from its constraints.

- Memory by memory, feeling by feeling, our alarm system can be switched off.

The Soothing Power of Eye Contact

- Polyvagal theory: Eye contact soothes the stress system.
- Looking into a another's eyes offers a sense of connectedness, stimulating vagus nerve, calming stress response.
- When we feel unsafe, we stare at a person's mouth – remnant of the fear our ancestors had of being eaten!

Grit Vs. Resiliency

- There is a vast difference between coping and thriving, grit versus resiliency.
- Resiliency isn't about gritting it out, or gutting through.
- We can only develop resiliency when there is:
- Awareness of what's happening (the past is acknowledged, emotions are named).
- We have adequate support in our journey.
- We **create new meaning out of our experiences** in ways that serve us over the long-term.

Becoming Trauma Informed

Instead of asking “What did you do?” or “What’s wrong with you?” we need to ask:

“What happened to you?”

Understanding childhood trauma allows us to shift from judgment and blame to understanding and compassion.

It has been said that if child abuse and neglect were to disappear today, the *Diagnostic and Statistical Manual* would shrink to the size of a pamphlet in two generations, and the prisons would empty.

Understanding the link between childhood adversity and adult suffering can inform all of our efforts to heal.

- ➔ We can remove early “fingerprints” from neurobiology.
- ➔ We can move toward post-traumatic growth.
- ➔ Adults who embark on a journey to heal from their own ACEs experience post-traumatic growth, gaining an inner wisdom and compassion that makes them better members of their communities, and healthier, happier people in every arena of their lives.