

Applying the Science of ACEs to Infant Mental Health

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Adverse Childhood Experiences (ACEs)

- Verbal Abuse
- Physical Abuse
- Sexual Abuse
- Physical Neglect
- Emotional Neglect
- Witness IPV
- Substance Abuse in Home
- Separated/Divorced Parents
- Family Member Incarcerated
- Family Member Mentally Ill or Suicidal

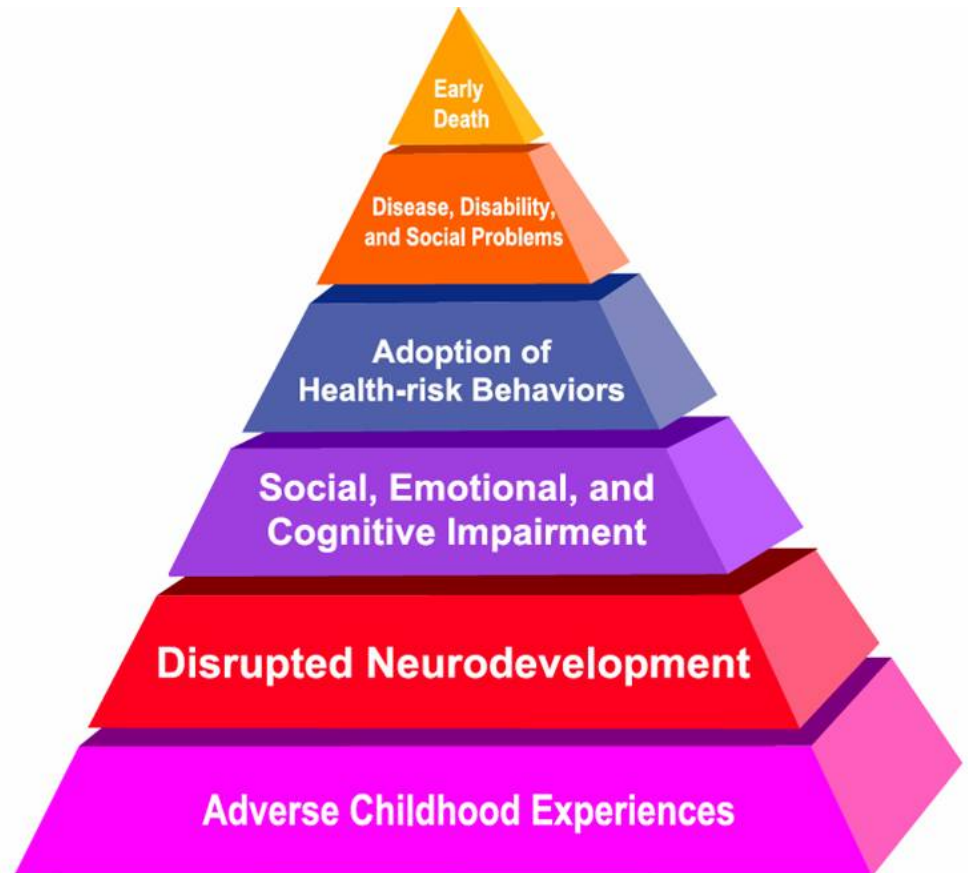


<https://www.cdc.gov/violenceprevention/cestudy/>

ACEs negatively affect health & development

In multiple studies, ACEs predicted

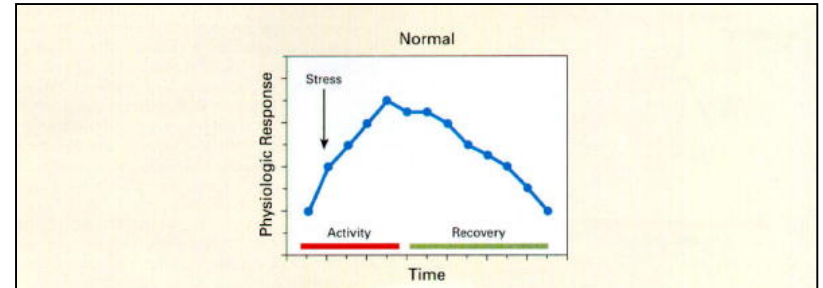
- Risky health behaviors (smoking, obesity, alcohol/drug abuse)
- Chronic health problems
Heart disease, cancer, diabetes, fractures, hepatitis, COPD
- Mental health
Depression, anxiety, panic reactions



Mechanisms by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

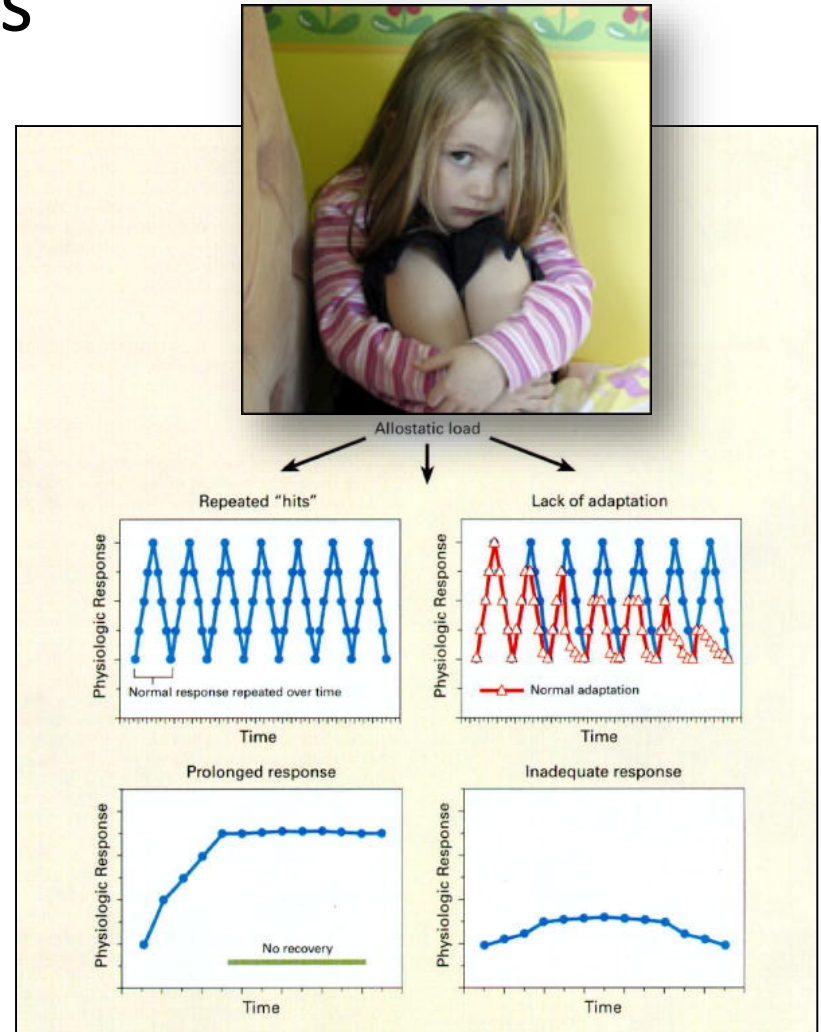


ACEs - Stress response



When survival is threatened, the body produces multiple responses to ensure we can rise to the challenge: fight, flight, or freeze. This response affects the brain, the immune system, the endocrine system, and the metabolic system. After the danger is passed, the systems return to normal.

Allostatic Load: Wear and tear from repeated exposure to stress



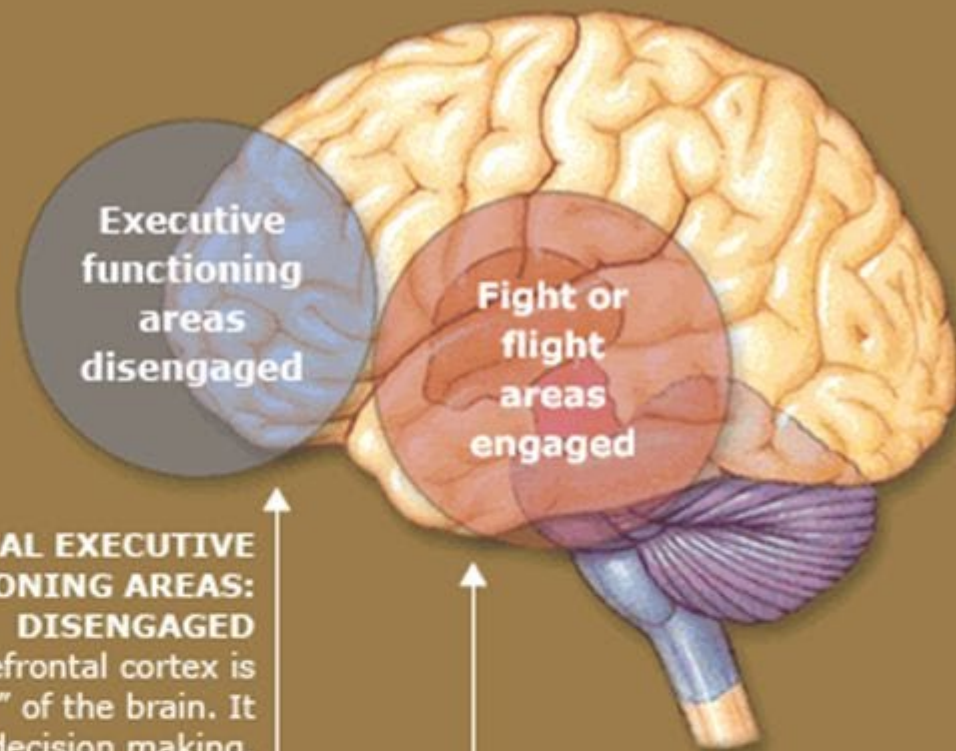
Stress & the Brain

- Frontal executive functioning areas are disengaged
- Subcortical *fight or flight* areas are engaged

Trauma:

Allostatic load

The wear and tear that the body experiences due to repeated cycles of stressful events as well as the inefficient turning-on or shutting off of these responses



FRONTAL EXECUTIVE FUNCTIONING AREAS: DISENGAGED

The prefrontal cortex is the "CEO" of the brain. It regulates decision making, judgment, planning, moral reasoning, and sense of self. Stressful experiences (academic pressure, sleep deprivation, substance abuse, etc.) disengage the frontal lobes. Over time, this can lead to impulsive, short-sighted, even violent behavior; increased anxiety; depression; alcohol and drug abuse; learning disorders; and increased stress-related diseases.

SUBCORTICAL FIGHT OR FLIGHT AREAS: ENGAGED

The subcortical arousal system—thalamus, hippocampus, brainstem, and hypothalamus—mobilizes the body for action, increasing heart rate, respiratory rate, and muscle tone. The nature of this system is to bypass the frontal executive functioning and trigger the fight or flight mode.

ACEs affect school performance

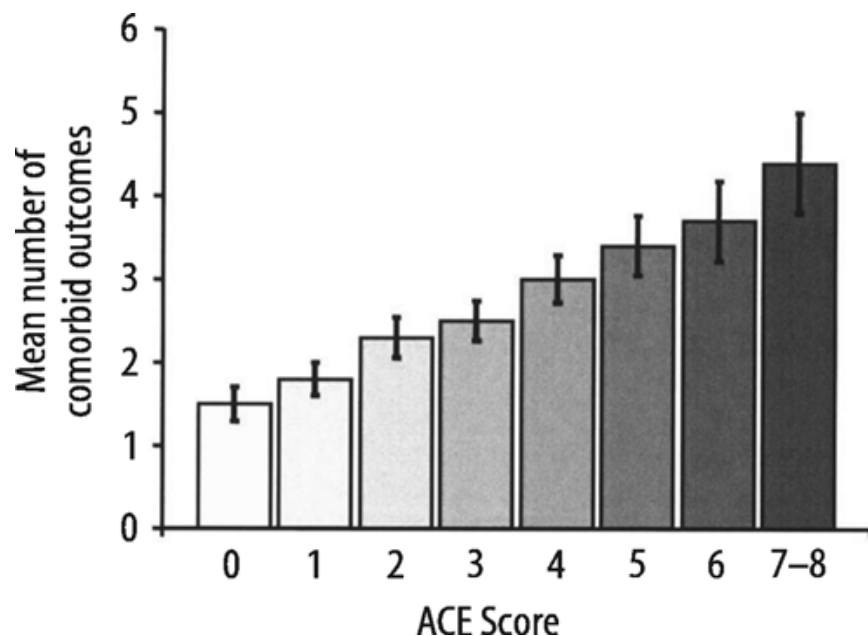
Students with history of trauma and adversity

- Are 2.5 times more likely to repeat a grade
- Score lower on standardized achievement tests
- Have more receptive or expressive language difficulties



- Are suspended or expelled more often
- Are designated to special education more frequently

ACEs and mental health



The mean number of comorbid outcomes in the study sample was 2.1 (range: 0–14); means are adjusted for age, sex, race, and educational attainment. The trend in the means is significant ($P < 0.0001$); vertical error bars represent 95% confidence intervals

64% of respondents had at least one ACE

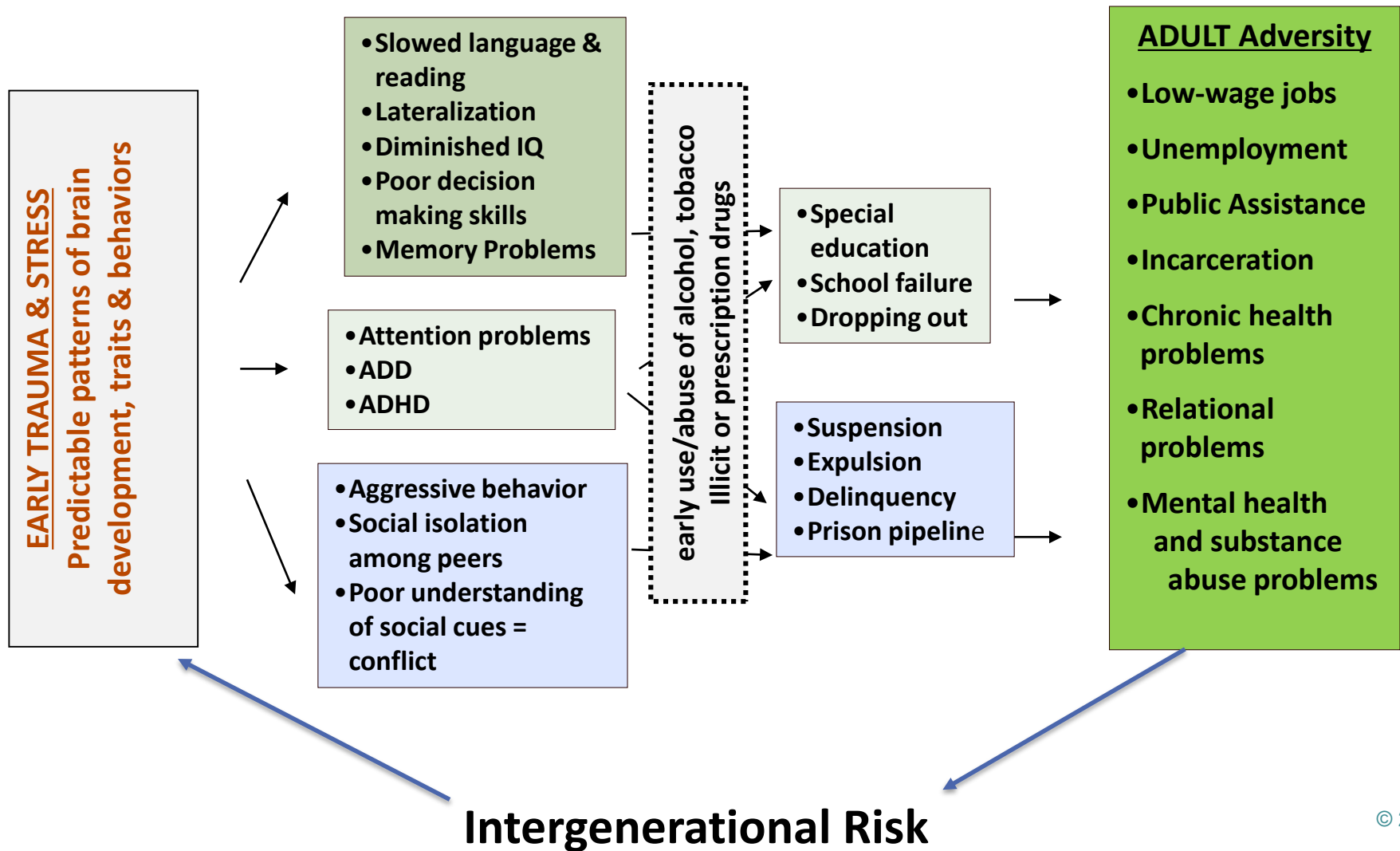
Having ≥ 4 ACEs increases risk of

panic reactions - 250%
depressed affect - 360%
anxiety - 240%
hallucinations - 270%

Dose effect significant – risk increases with each ACE

Anda et al Eur Arch Psychiatry Clin Neurosci (2006) 256: 174–186

The Progressive Nature of Adversity in the Life-Course



Jack Shonkoff - Toxic Stress

Three Levels of Stress Response

Positive

Brief increases in heart rate,
mild elevations in stress hormone levels.

Tolerable

Serious, temporary stress responses,
buffered by supportive relationships.

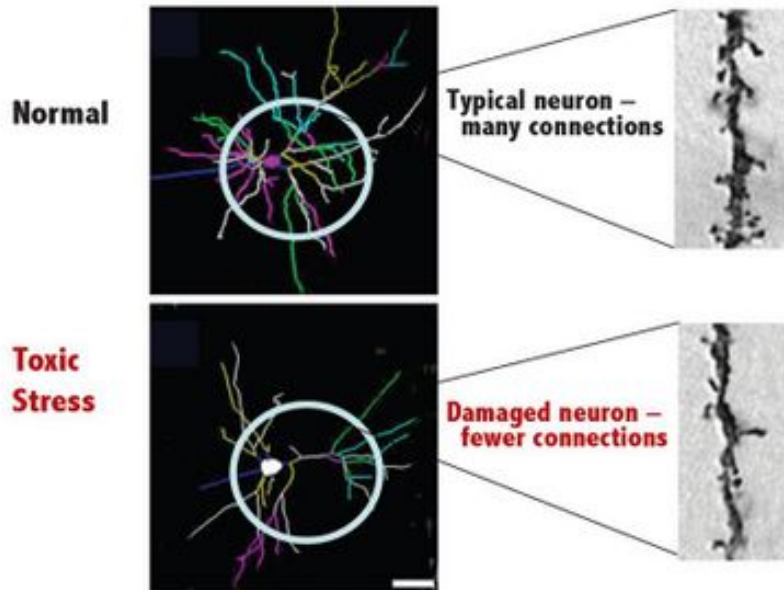
Toxic

Prolonged activation of stress response systems
in the absence of protective relationships.

Toxic Stress or Resilience



Persistent Stress Changes Brain Architecture



Calm center (mindful presence, emotion regulation, cognitive flexibility) = Resilience

Life Stress + ACEs = Toxic Stress

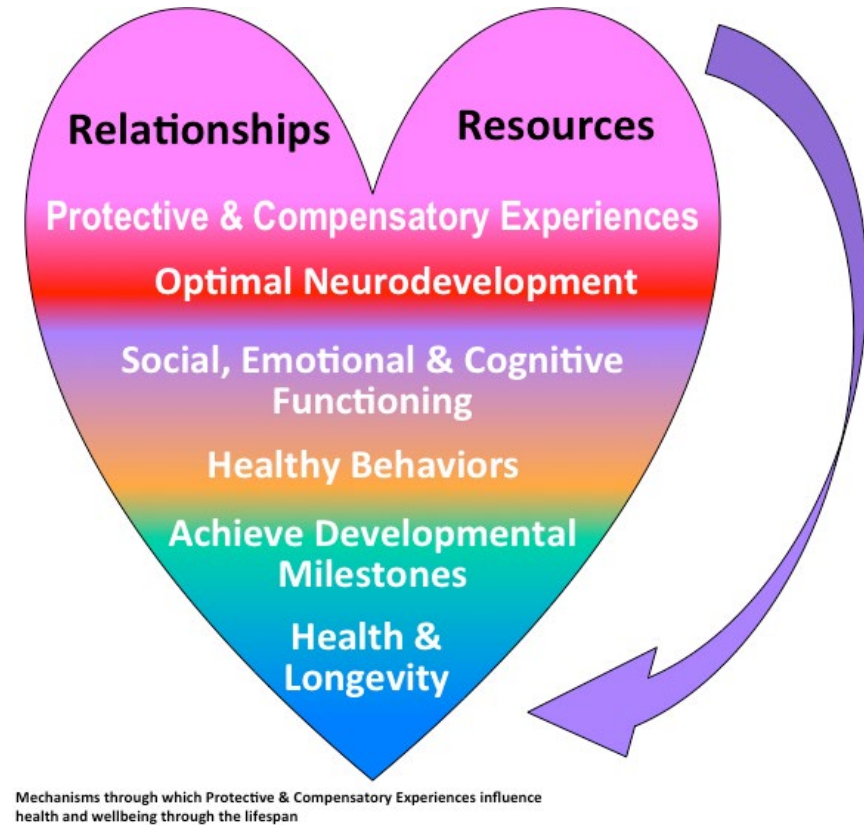
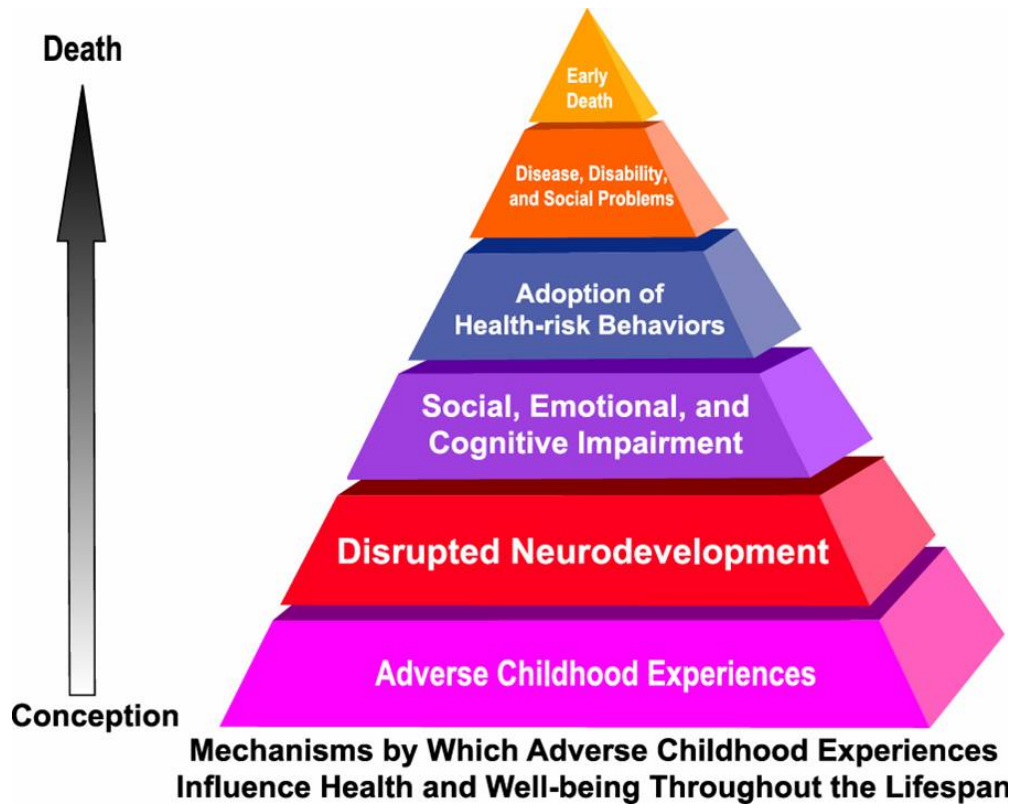
What enables children to be resilient?

- Individual qualities – intelligence, sense of humor, finding meaning, attractiveness, optimism, hope
- **Relationships** – nurturing, unconditional love, peer friendships, caring for others
- **Resources** - environments and experiences that promote the development of skills, talents, knowledge, and competencies

Protective and Compensatory Experiences (PACEs) – Morris, Hays-Grudo et al (2015)

Relationships and Connections	Resources and Contexts
Have someone who loved you unconditionally (you did not doubt that they cared about you)?	Have an engaging hobby -- an artistic or intellectual pastime either alone or in a group?
Have at least one best friend (someone you could trust, had fun with)?	Were you regularly involved in organized sports groups or other physical activity?
Do anything regularly to help others or do special projects in the community to help others?	Live in a home that was typically clean AND safe with enough food to eat?
Have an adult (not your parent) you trusted and could count on when you needed help or advice?	Have a school that provided the resources and experiences you needed to learn?
Were you an active member of at least one civic group or a non-sport social group?	Were there rules in your home that were clear and fairly administered?

ACEs and PACEs

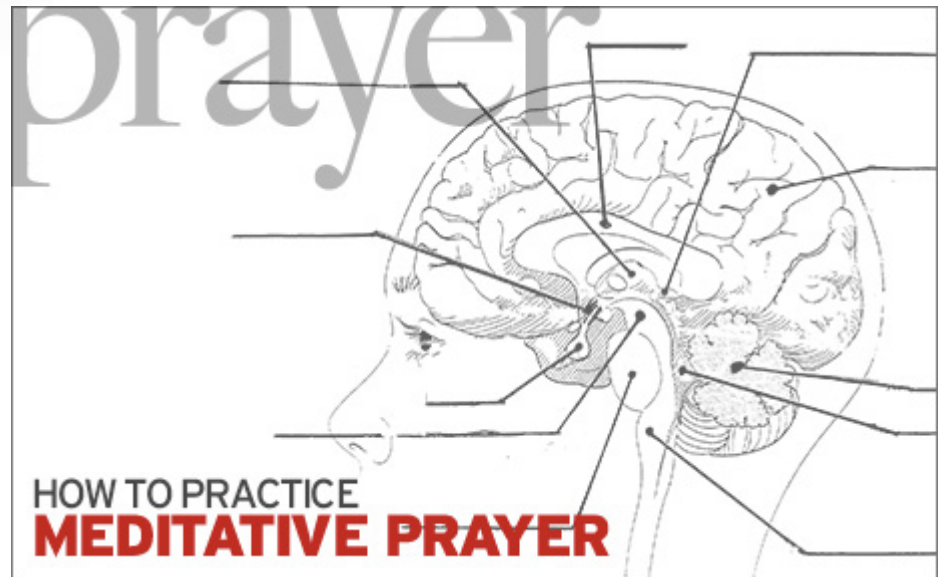
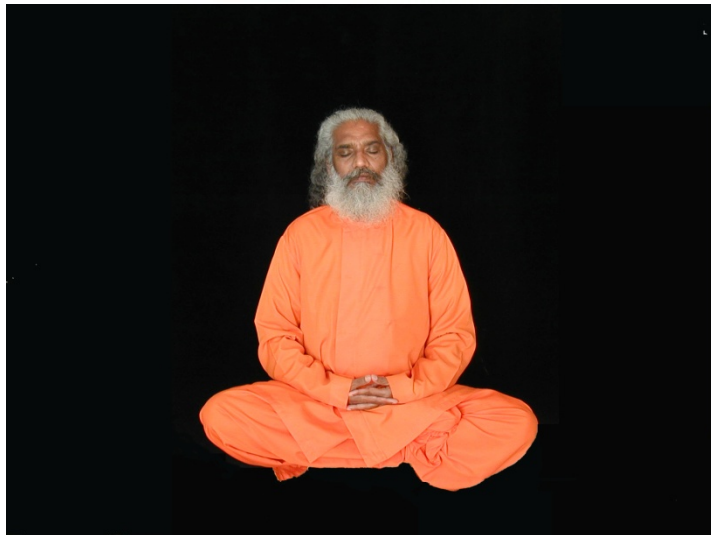


PACEs to help adults recover from ACEs

Relationships and connections	Resources and contexts
Have someone who loves you unconditionally (you did not doubt that they care about you)?	Have an engaging hobby -- an artistic or intellectual pastime either alone or that you share with others?
Have at least one best friend (someone you can trust, relax and have fun with)?	Get regular exercise, especially something you really enjoy doing or do with others?
Do something regularly to help others or do special projects in the community to help others?	Live in a physically safe home (clean, uncluttered, healthy meals) and neighborhood?
Have a mentor – access to someone whose advice about work or relationships is reliable and helpful?	Have paid or unpaid work that provides opportunities for growth and meaning?
Are you an active member of at least one civic, social, or faith-based group?	Have regular routines and habits that promote well-being (sleep, time for self)?

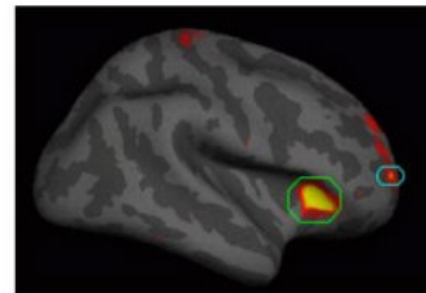
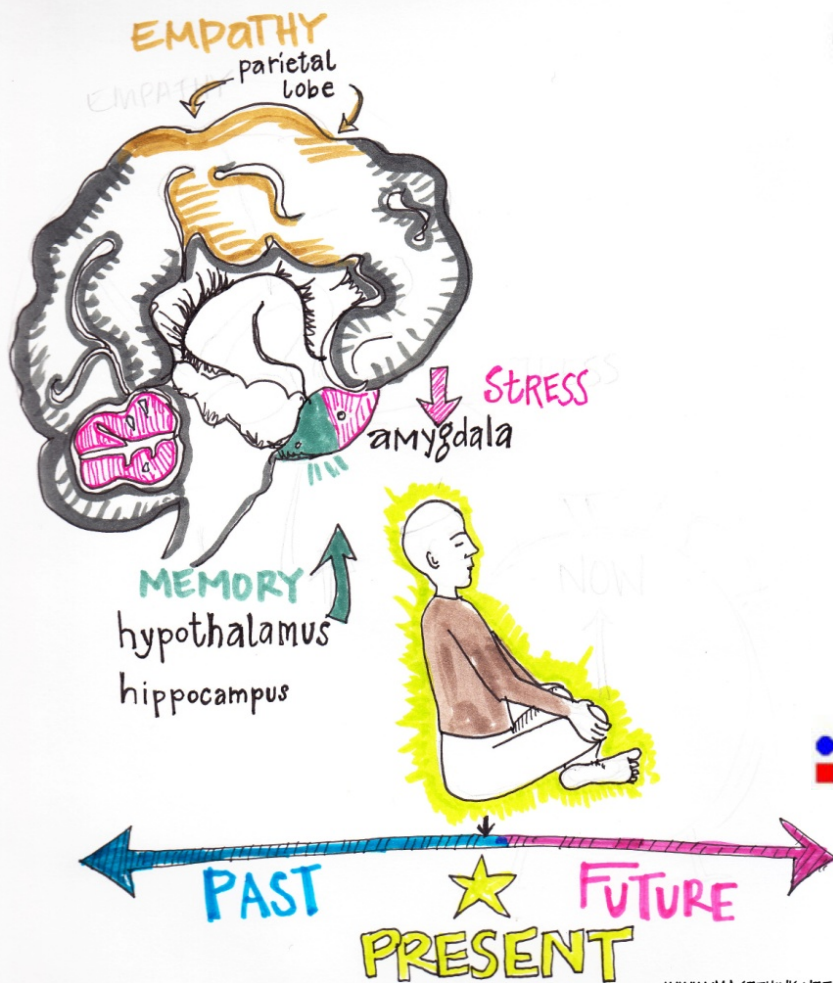
PACEs Plan

Relationships and connections	Resources and contexts
Unconditional love	Hobby
Best friend	Exercise
Volunteer	Physical (uncluttered, clean, safe) space
Mentor	Work
Social group	Routines (sleep, meals, meditation)

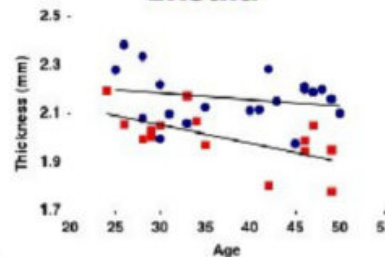


Mindfulness Based Stress Reduction (MBSR) changes the brain – reverses effects of ACEs

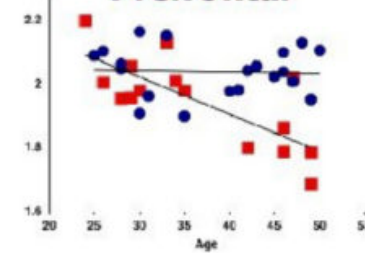
Cortical areas thicker in meditators



Insula



Prefrontal



● Meditators
■ Controls

WWW.IMAGETHINK.NET

<http://www.nmr.mgh.harvard.edu/~lazar/>

Mindfulness and Parenting

- Significant relationship between mindfulness and mindful parenting in non-meditating mothers of preschoolers
- Significant negative correlation of mindfulness and parenting stress, depression and general stress
- Mindful parenting related to parent-child interactions and perceptions about child

Corthorn & Milicic (2016)

Parenting with ACEs – Active Parenting + MBSR

Super Parents

Pre- to post-test results

- **Significant increases** in
 - Positive parenting attitudes
 - Parenting efficacy
 - Parent executive function
- **Significant decreases** in
 - child emotional problems and hyperactivity

Three-month Follow-up

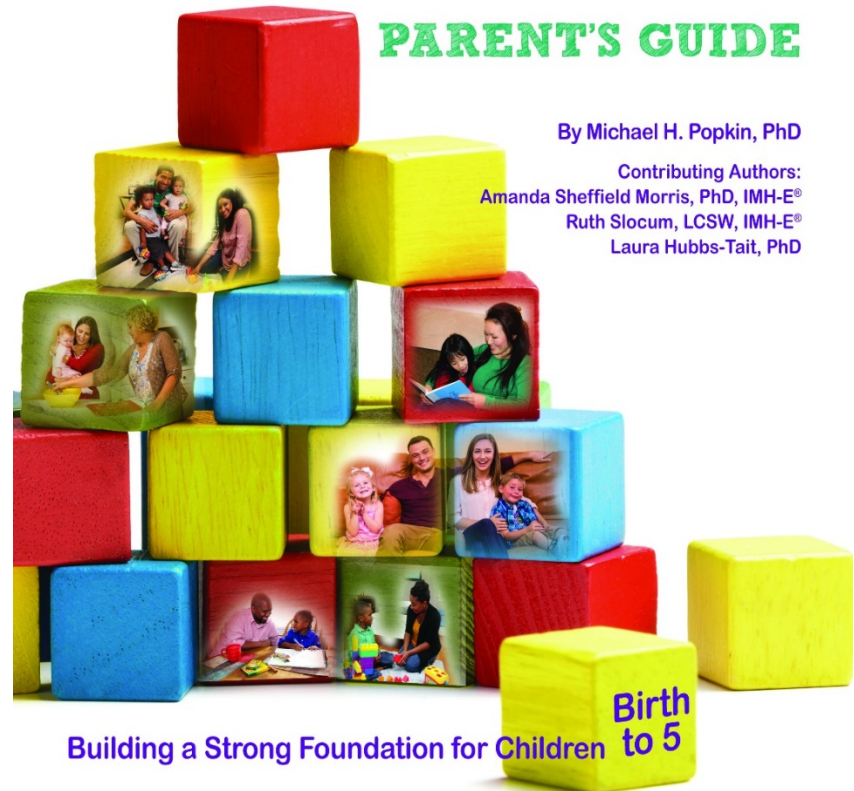
- **Significant increases** in
 - parenting efficacy
 - parent self-compassion
 - parent mindfulness
- **Significant decreases** in
 - parent perceived stress
 - child emotional problems

ACTIVE PARENTING First Five Years™

PARENT'S GUIDE

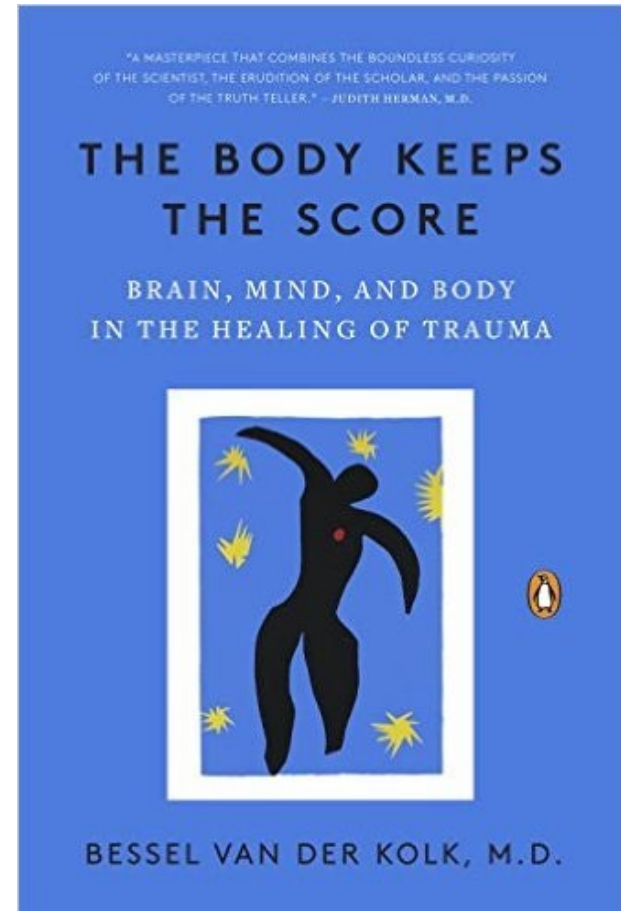
By Michael H. Popkin, PhD

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Laura Hubbs-Tait, PhD



How developmental trauma changes the brain

- Decreases ability to ***filter*** relevant from irrelevant information
- ***Hypervigilance***: alters brain's alarm system
- Increases ***stress hormone*** activity
- Prevents ***learning***



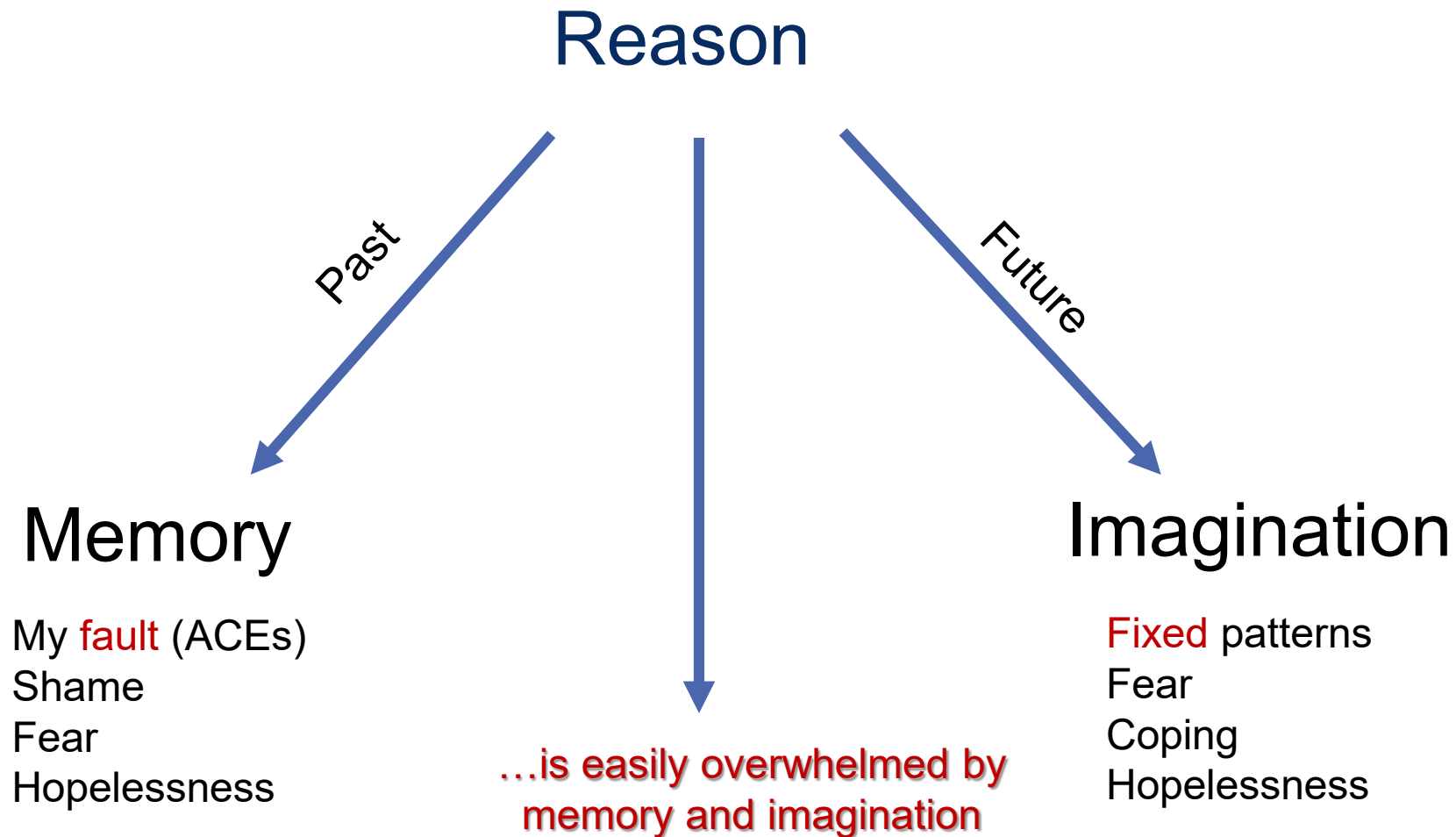
Three avenues to treat trauma

- **Top down** – by talking, (re-connecting with others, allowing past and current experiences to be acknowledged and processed)
- **Medications** that shut down inappropriate alarm reactions, or other technologies that change the way the brain organizes information
- **Bottom up** – by allowing the body to have experiences that viscerally contradict the helplessness, rage, or collapse that result from trauma.

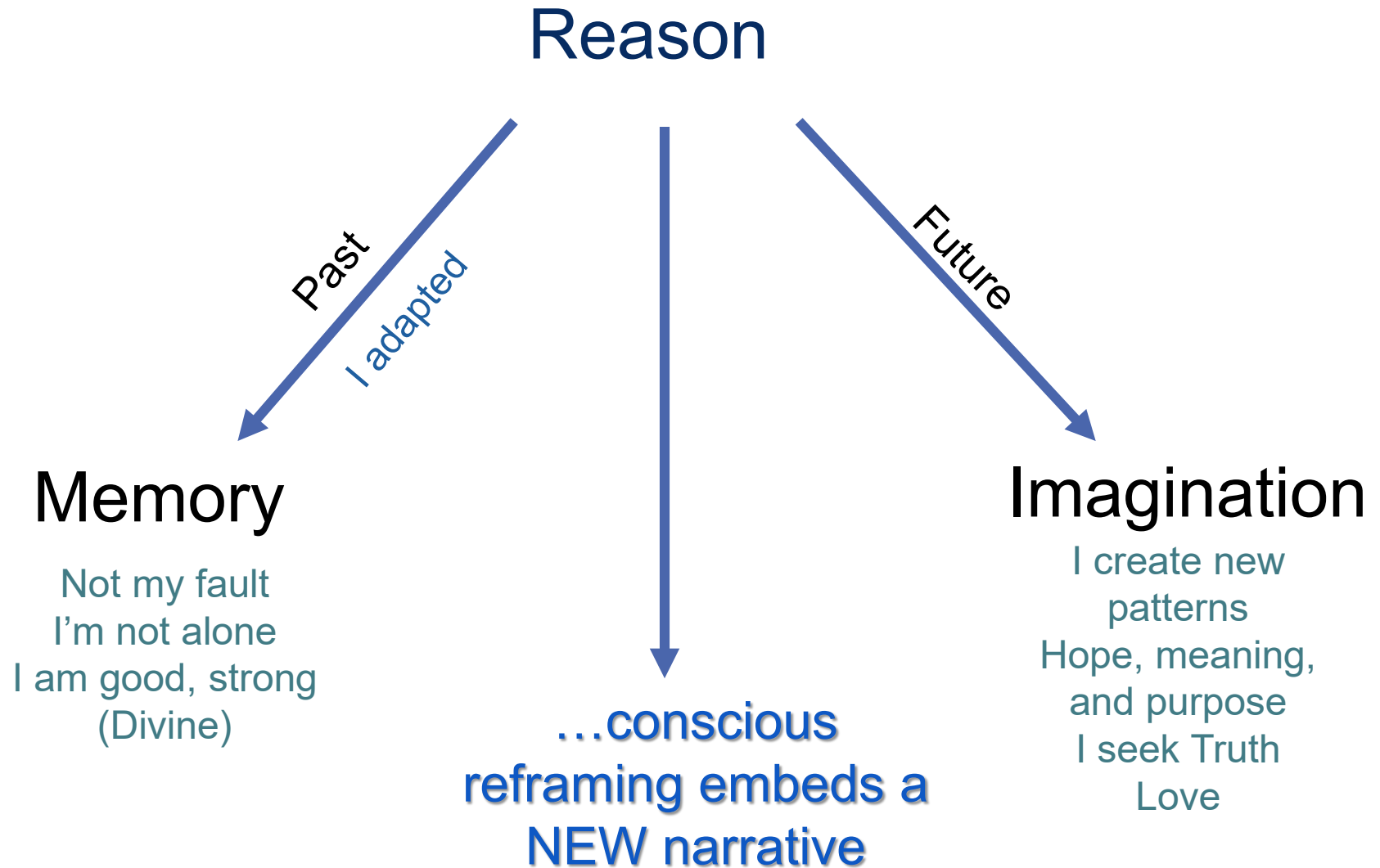
Trauma-Informed Practices: Being trauma informed starts with me



Using ACEs to Reframe our Consciousness – Effects of Trauma/ACEs on Thought



Using ACEs to Reframe our Consciousness – Changing the Narrative



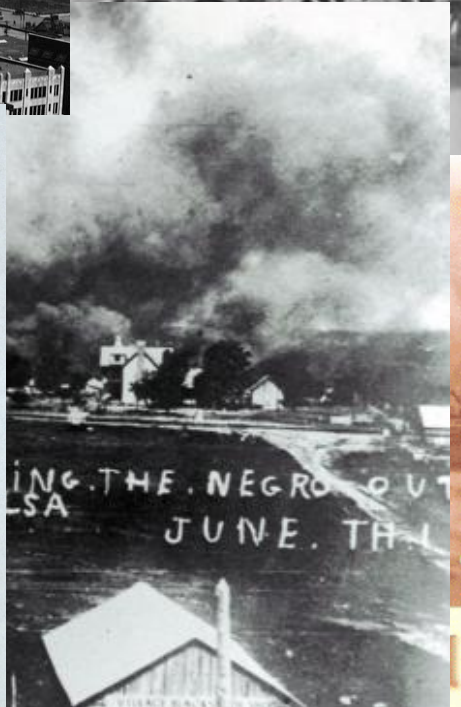
ACE conversations help break the cycle of adversity and trauma by

- Rewriting life narratives
 - Provides adults with a chance to see the story of their lives and create a different path for the future
 - move from shame about adaptations (coping) with a downside
 - create alternative coping and living strategies with hope, meaning, and purpose.
 - Helps children rewrite their stories
 - It's not your fault
 - You're not alone
 - You're good, you're strong, you're worthwhile
 - You seek goodness, strength, and purpose

Parallels with IMH Principles

- **Relationship-based framework** – strengthen infant/child and caregiver relationship through genuine relationship and connection with caregiver
- **Multigenerational perspective** – involve parents, others who can provide nurturing and responsive relationships
- **Developmental orientation** – recognize importance of sensitive and critical periods for both prevention and intervention
- **Multidisciplinary approach** – create working alliance with multiple providers from different systems in the environment
- **Reflection and self-care** – security and acceptance, It starts with me: model self-regulation, being fully present, supportive

Oklahoma history of trauma & stress



ACEs are common in Oklahoma

ADVERSE CHILDHOOD EXPERIENCES: NATIONAL AND STATE-LEVEL PREVALENCE. Vanessa Sacks, M.P.P., David Murphey, Ph.D., and Kristin Moore, Ph.D., **Child Trends**

Key Finding:

“States vary in the pattern of specific ACEs. Connecticut and New Jersey have some of the lowest prevalence rates nationally for all ACEs, while **Oklahoma has consistently high prevalence.**”

http://www.childtrends.org/wp-content/uploads/2014/07/Brief-adverse-childhood-experiences_FINAL.pdf

Extended ACEs Pyramid



Summary

- ACEs have serious negative effects on development and health
 - brain impairments, resulting in deficits in emotion regulation, executive function skills (memory, focused attention), increased vigilance and difficulty connecting with others
 - risky health habits (attempts at coping)
 - altered metabolic and immune functioning and subsequent chronic diseases and premature death
 - ACEs are common in OK due to historical trauma and intergenerational transmission of trauma
- Protective and compensatory experiences (PACES) buffer the negative effects of ACEs, especially nurturing and supportive caregiving
- The ACEs/PACES model is a research-based framework consistent with infant-mental health work; IMH and trauma-informed programs share common principles and would benefit from collaboration.

The Hole in the Bridge





**CENTER FOR INTEGRATIVE RESEARCH
ON CHILDHOOD ADVERSITY**

Grant from NIH for \$11.3M, 2016-2021

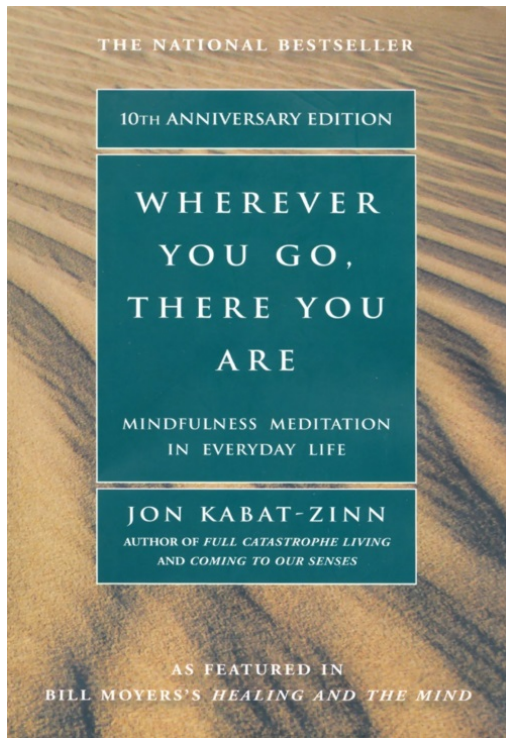
Partners: OSU Center for Health Sciences, OSU-Tulsa,
OSU-Stillwater, OU-Tulsa, LIBR

Purpose:

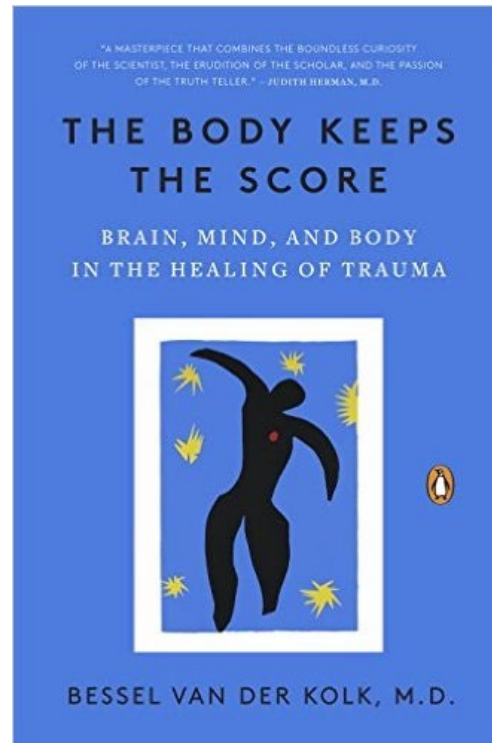
- 1) More complete understanding of the effects of ACEs and PACEs
- 3) Increase research in Tulsa and northeast Oklahoma

Resources

Kabat-Zinn



Van Der Kolk



Burke Harris

