

## The Power of Positive Childhood Experiences



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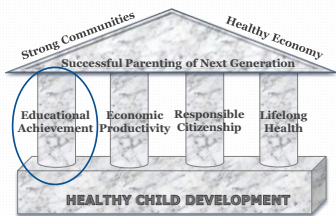
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## The Foundation of a Successful Society is Built in Early Childhood



Source: Center on the Developing Child at Harvard University (2010).

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**“It is easier to build strong children than to repair broken men.”**

Frederick Douglass (1817–1895)



Guiding Principle

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## How Do We Build Strong Children and Promote Lifelong Health?: It's All About Relationships

New science tells us what we always suspected:

- the environment in which children develop - family, extended family, neighborhood, school, community and culture – impacts health, **but also brain development and even genetics**



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## Brain Architecture Supports Lifelong Learning, Behavior, and Health

- Brains are built over time, starting in the earliest years of life. Simple skills come first, then more complex skills follow
- Cognitive, emotional, and physical capabilities are intertwined throughout the life course.
- A strong foundation in the early years improves the odds for positive outcomes and a weak foundation increases the odds of later difficulties.

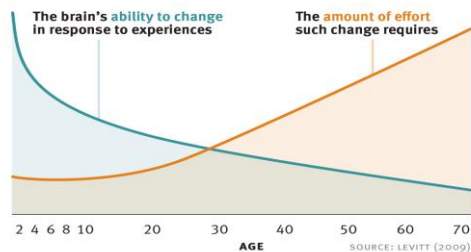


[http://developingchild.harvard.edu/resources/multimedia/videos/three\\_core\\_concepts](http://developingchild.harvard.edu/resources/multimedia/videos/three_core_concepts)

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## Brain Development Begins Early



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## Our Goal: Strong Executive Functioning

### Includes:

- Working Memory
- Mental Flexibility
- Self-control

Executive Function & Self-Regulation. Center on the Developing Child at Harvard University. Website: <http://developingchild.harvard.edu/resources/key-concepts/executive-function/>. Accessed on July 16, 2016.

### Impacts:

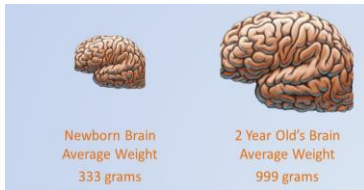
- School readiness
- Math and reading competence
- Physical and mental health
- Educational achievement
- Positive relationships
- Economic productivity
- Good Health related behaviors
- Overall quality of life

Diemand-Yauman, Executive Function. Book: See it, Think it, Say it, 199-208. doi: 10.1016/j.cdev.2016.03.001



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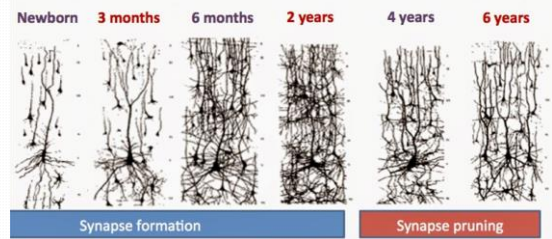
## Why Early Experiences Matter



IsaacMao. Brain. 2005. <https://www.flickr.com/photos/isaacmao/19245594/fn/album-7205759406652397/>. Accessed June 16, 2018.

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## One Million Neural Connections (Synapses) Each Second



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## The Biology of Health: Nature vs Nurture

The architecture of the brain depends on the mutual influences of the following:

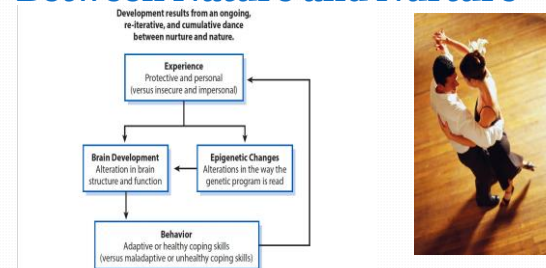
- Genetics
- Environment
- Experience



Source: National Scientific Council on the Developing Child. The Timing and Quality of Early Experiences Combine to Shape Brain Architecture: Working Paper #5. 2007. <http://www.developingchild.net>. Accessed June 16, 2018.

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## Health Trajectory: Dance Between Nature and Nurture



From Bright Futures Guidelines for Health Supervision of Infants, Children and Adolescents, 4th ed. Modified with permission from Garner A, Forkey H, Stirling J, Nahen L, Schilling S. American Academy of Pediatrics, Dave Thomas Foundation for Adoption. Helping Foster and Adoptive Families Cope With Trauma. Elk Grove Village, IL: American Academy of Pediatrics; 2015. <https://www.aap.org/traumaguide>. Accessed July 19, 2018.

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## The Foundations of Health

- Stable and responsive environment and relationships
- Safe & supportive physical environments
- Appropriate nutrition

Source: Lifelong Health, Center on the Developing Child at Harvard University Website.  
<https://developingchild.harvard.edu/science/deep-dives/lifelong-health/>. Accessed on July 19, 2018.

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## Stable & Responsive Environments



- Provide consistent, nurturing and protective interactions with adults
- Positive relationships can serve as social emotional buffers

Source: Center on the Developing Child at Harvard University Website.  
<https://developingchild.harvard.edu/>. Accessed on July 19, 2018.

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## Safe & Supportive Physical Environments

- Safe places to learn
- Places free of toxins
- Places that nurture and support families



Source: Center on the Developing Child at Harvard University Website.  
<https://developingchild.harvard.edu/>. Accessed on July 19, 2018.

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## Disrupting Brain Development and Health

- Positive early influences = typically healthy and adaptive
- Adverse early influences = dysfunctional, maladaptive, poor health



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## How Do You Define Adversity or Stress?

- Stress is not necessarily a bad thing
- Based on the **perception** and **reaction** (objective physiologic responses):
  - Positive stress response
  - Tolerable stress response
  - Toxic stress response



Source: Toxic Stress. Center on the Developing Child at Harvard University Website.  
<https://developingchild.harvard.edu/science/key-concepts/toxic-stress/>. Accessed on July 16, 2018.

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## Positive Stress Response

- Brief, infrequent, mild to moderate intensity
- Most normative childhood stress
  - 2 year-old stumbles while running
  - Beginning school or child care
- Social emotional buffers allow a return to **baseline**
- Builds motivation and resiliency
- Positive Stress is **not** the absence of stress



Source: Toxic Stress. Center on the Developing Child at Harvard University Website.  
<https://developingchild.harvard.edu/science/key-concepts/toxic-stress/>. Accessed on July 16, 2018.

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## Tolerable Stress Response

- Exposure to non-normative experiences
  - Death in family
  - Natural disaster
- Social emotional buffers can provide protection and promote a return to **baseline**
- A single major negative event does not necessarily mean long-lasting problems



Source: Toxic Stress. Center on the Developing Child at Harvard University Website.  
<https://developingchild.harvard.edu/science/key-concepts/toxic-stress/>. Accessed on July 16, 2018.

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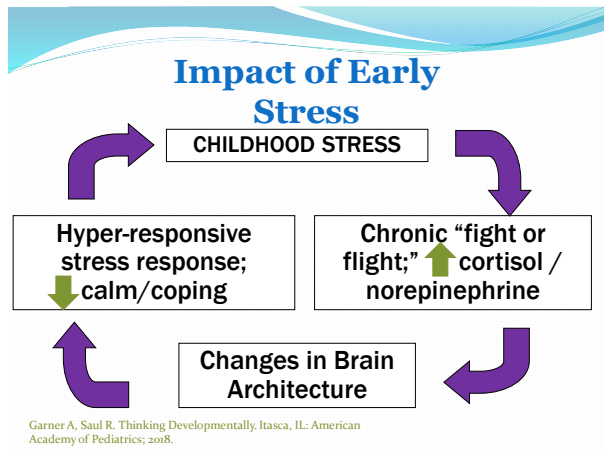
## Toxic Stress Response

- Long lasting, unremitting stress, not a "single bad stressor"
- Adverse child experiences
  - Abuse
  - Household dysfunction
- Insufficient social-emotional buffering
- Potentially permanent changes and long-term effects
- Multiple organ systems including brain
- Epigenetics



Source: Toxic Stress. Center on the Developing Child at Harvard University Website.  
<https://developingchild.harvard.edu/science/key-concepts/toxic-stress/>. Accessed on July 16, 2018.

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### Effects of Toxic Stress

- Persistent elevation of cortisol
  - Disrupts the developing brain's architecture in the
    - Amygdala
    - Hippocampus
    - Prefrontal cortex (PFC)
  - Impacts learning, memory, and behavioral and emotional adaptation
  - Suppresses immune response
  - Affects many organ systems
- Potential genetic impact
  - How a gene is expressed (epigenetics)
  - How a pathway develops

Source: Perry BD. Childhood experience and the expression of genetic potential: What childhood neglect tells us about nature and nurture. Brain and Mind 2002; 3(1):79-90. doi: 10.1023/A:1016557824657

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### What is the Adverse Childhood Experiences (ACE) Study?

The largest study of its kind that looks at the health and social effects of adverse childhood experiences over a lifespan

About the CDC-Kaiser ACE Study. Centers for Disease Control and Prevention Website. <https://www.cdc.gov/violenceprevention/acesstudy/about.html>. Updated June 14, 2016. Accessed July 17, 2018.

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### ACES Survey

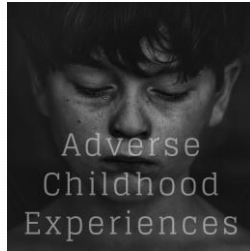
- Standard survey consists of questions regarding:
  - Physical abuse
  - Sexual abuse
  - Emotional abuse
  - Physical neglect
  - Emotional neglect
  - Exposure to domestic violence
  - Household substance abuse
  - Household mental illness
  - Parental separation or divorce
  - Incarceration household member

Since your child was born:	
1.	Have your child's parents separated or divorced?
2.	Has your child lived with anyone who was depressed or mentally ill, or who attempted suicide?
3.	Has your child lived with anyone who was a problem drinker, alcoholic or used street drugs?
4.	Has your child lived with anyone who ever went to prison?
5.	Has your child ever witnessed anyone in the home (parents or adults) push, grab, slap, or throw things at each other and/or witnessed anyone kick, bite, hit with a fist, or hit each other with something hard, or ever witness persons threatening each other with a weapon such as a knife or gun?
6.	Which of the following were sometimes, often or very often true: My child did not have enough to eat. My child's parents were too drunk or high to take care of him/her. My child wore dirty clothes. My child had no one to take him/her to the doctor....
7.	Did a parent or adult in your home often or very often swear at, insult, or put your child down or scold him or her in a way that made your child afraid that he/she might be physically hurt?
8.	Did a parent or other adult in your home sometimes, often or very often push, grab, slap, or throw something at your child, or ever hit him/her so hard that the child might be physically hurt?
9.	Did a parent, adult, or someone at least 5 years older than your child ever touch your child sexually or try to make your child touch them sexually?
10.	Which of the following are sometimes, often or very often true: There is someone in my family who makes my child feel special or loved....

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## ACES...

- **ACE Study Findings**
  - Adverse childhood experiences are common
    - 2/3 of participants had at least 1 ACE; 1/5 scored 3 or more
    - Some populations more vulnerable
  - Most often unrecognized and concealed
  - Transforms psychosocial experience into organic disease, social malfunction, and mental illness
  - Linked to heart disease, obesity, COPD, diabetes, depression, anxiety, substance addiction



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## Dose-Response

- **Children with 3 or more ACEs**
  - 3X academic failure
  - 6X behavior problems
  - 5X attendance problems
- **Adults with 4 or more ACEs**
  - 7X alcoholism
  - 2X cancer
  - 4X emphysema
- **6 or more ACEs**
  - 30X suicide



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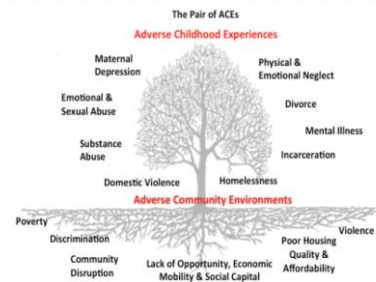
## Adverse Childhood Experiences (ACE) Study



Mechanism by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan  
The Ace Pyramid. Centers for Disease Control and Prevention Website.  
<https://www.cdc.gov/violenceprevention/acestudy/about.html>. Updated June 14, 2016. Accessed July 13, 2018.

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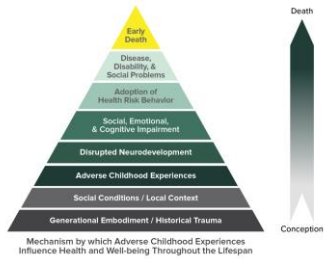
## ACES complete picture...



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## Updated ACE Pyramid



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## Poverty and the Brain

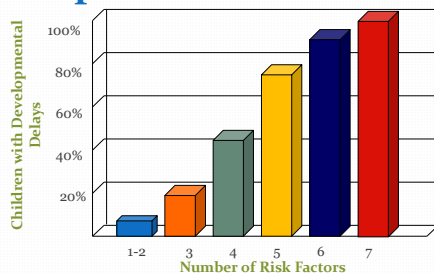
- Children in poverty have reduced gray matter volumes
  - 150% of poverty with reductions of 3-4% below developmental norms
  - 100% of poverty 8-9% below norms
- Chronic stressors related to poverty impacts brain development
  - Raised levels of cortisol and other stress markers
- MRI-frontal, parietal, left superior gyrus, right anterior cingulate gyrus-executive function



Source: Blair C. Raver C. Poverty, Stress, and Brain Development: New Directions for Prevention and Intervention. Academic Pediatrics. 2016;16(3):539-556. <https://doi.org/10.1016/j.acap.2016.01.010>.

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## Significant Adversity Impairs Development in First Three Years



Data Source: Barth, et al. (2008)  
Graphic adapted from 2011, Center on the Developing Child at Harvard University

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## Long Term Effects of Toxic Stress

- **Health**
- **Health Risk Behaviors**
  - Coping mechanisms to help eliminate pain
  - Maladaptive behaviors
- **Relationships-feels unsafe, betrayed, and have difficulty trusting others**
  - People
  - Communities
  - Delivery systems
- **Functioning**
  - Long term difficulties
    - School
    - Work
- **Healthcare**
  - Heightened emotions such as anger, aggression, numbness and isolation
  - Negative impact on trust between patients and physicians



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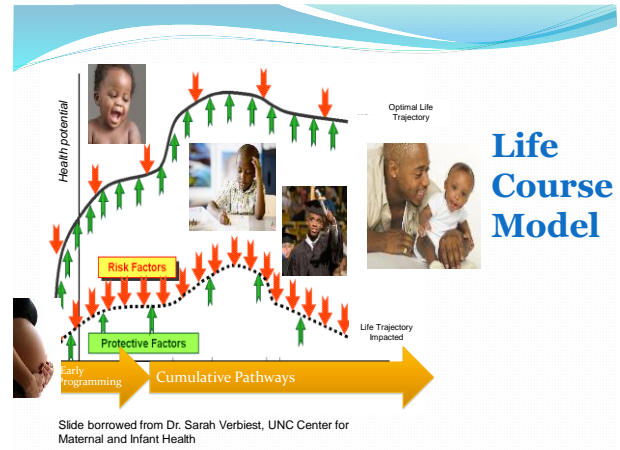


## Good News: Life Trajectories are NOT Set in Stone

- Interactive processes
  - The development of health over a lifetime is an interactive process combining
    - Genes
    - Environment
    - Behaviors
- Children/families have varying abilities and strengths that can be developed to increase their protective factors
- Lifelong development/lifelong intervention
  - At all stages of life, even for those whose trajectories seem limited
    - Risk factors can be reduced
    - Protective factors enhanced to improve current and subsequent health and well-being



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## Building Resilience

- Resilience -- the process by which a person moves through a traumatic event, utilizing various protective factors and supports to return to baseline



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## Desired Protective Factors

### For Families

- Concrete support in times of need
- Social connections
- Knowledge of parenting and child development
- Personal resilience
- The ability to enhance social and emotional competence in children
- The ability to foster nurturing and attachment



Strengthening Families: A Protective Factors Framework. Center for the Study of Social Policy.  
<https://www.cssp.org/young-children-their-families/strengtheningfamilies/about#protective-factors-framework>. Accessed July 26, 2018.

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## Desired Protective Factors

### For Communities

- Safe neighborhoods
- Safe, high quality schools
- Stable and safe housing
- Access to nutritious food
- Access to job opportunities
- Access to medical care (including behavioral health and wellness care)
- Access to transportation
- Access to safe, high quality, affordable child care
- Inclusion and equity related to race, ethnicity, and disability



Strengthening Families: A Protective Factors Framework. Center for the Study of Social Policy. <https://www.cssp.org/young-children-their-families/strengtheningfamilies/about#protective-factors-framework>. Accessed July 26, 2018.

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## The Role of Caregiving

- Toxic stress and adverse experiences impact families and caregiving practices
- Two generation intervention approaches can mediate negative experiences



Source: Blair C, Raver C. Poverty, Stress, and Brain Development: New Directions for Prevention and Intervention. *Acad Pediatr*. 2016; 16(3): S30-S36. doi: 10.1016/j.acap.2016.01.010.

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## Two Generational Approach in Building Health and Resilience

### The Biology of Adversity Suggests a New Model for Intergenerational Investment



If we really want to achieve breakthrough outcomes for children experiencing toxic stress, then we have to transform the lives of the adults who care for them.

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## Removing the Stigma of Mental Health

- Normalize mental health conversations and supports
- Find ways to make families feel comfortable talking about mental health
- Assess a family's readiness to share and address mental health needs
- Follow a family's lead in making recommendations about mental health



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## CME and CE Information

In support of improving patient care, this activity has been planned and implemented by the School-Based Health Alliance and Moses/Weitzman Health System, Inc. and its Weitzman Institute and is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.



Through Joint Accreditation, credits are also available under the following bodies:

- American Academy of PAs (AAPA)
- American Dental Association's Continuing Education Recognition Program (ADA CERP)
- American Psychological Association (APA)
- Association of Social Work Boards (ASWB)
- Commission on Dietetic Registration (CDR)

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# Thank You!



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