



Center on the Developing Child
HARVARD UNIVERSITY

The Science of Child Development and Resilience

Building the Foundation for Lifelong Learning, Health, and Behavior

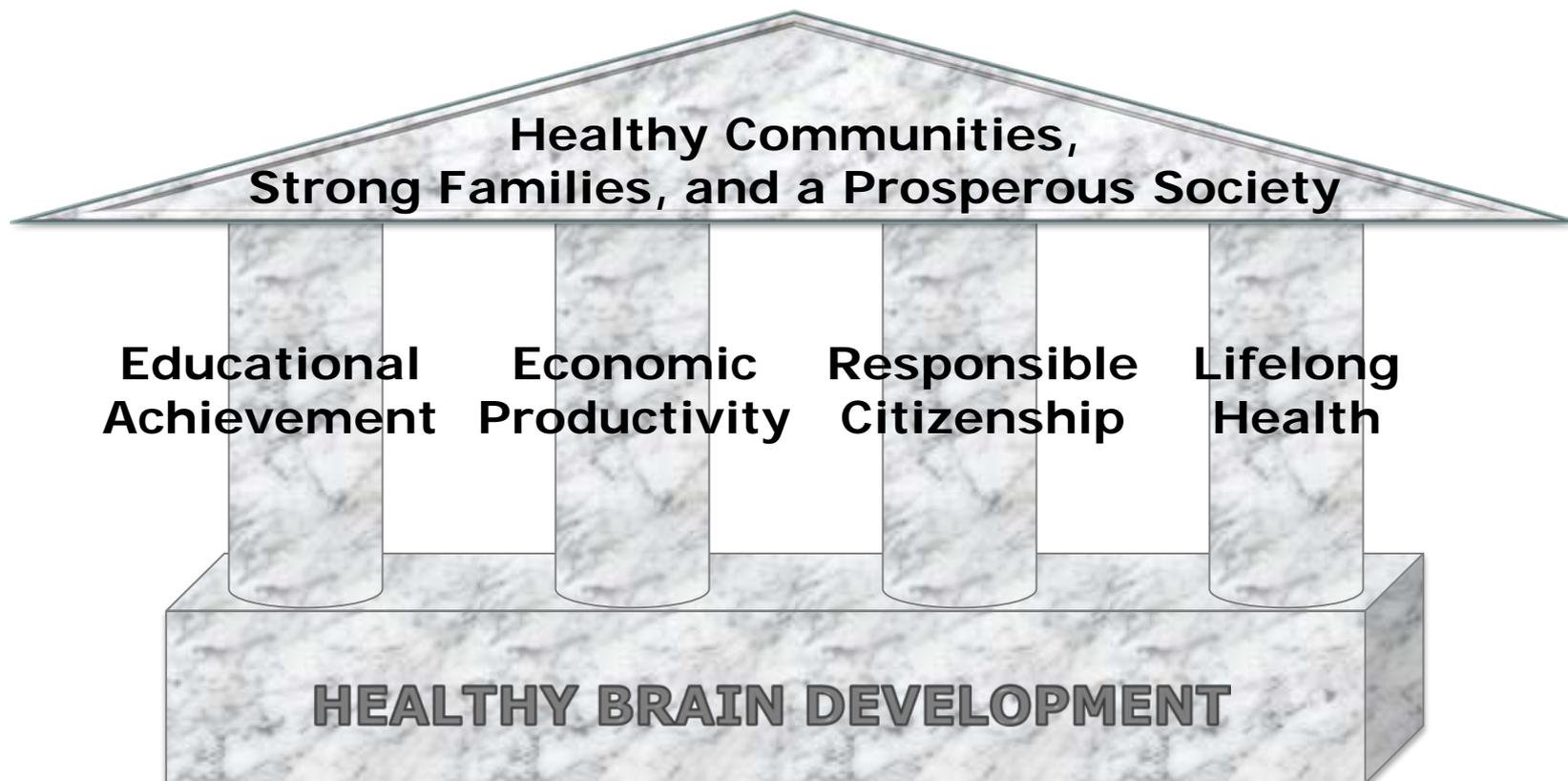
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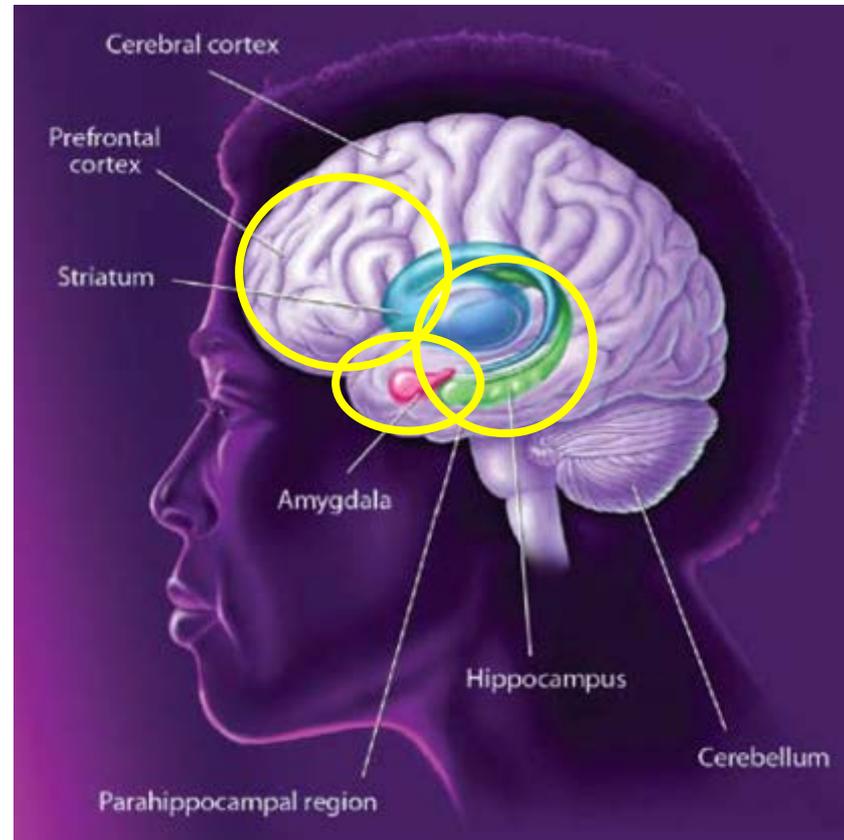
The Foundations of a Successful Society Are Built in Early Childhood



The Opportunity: Greater Understanding About the Impact of Early Experience on Brain Development



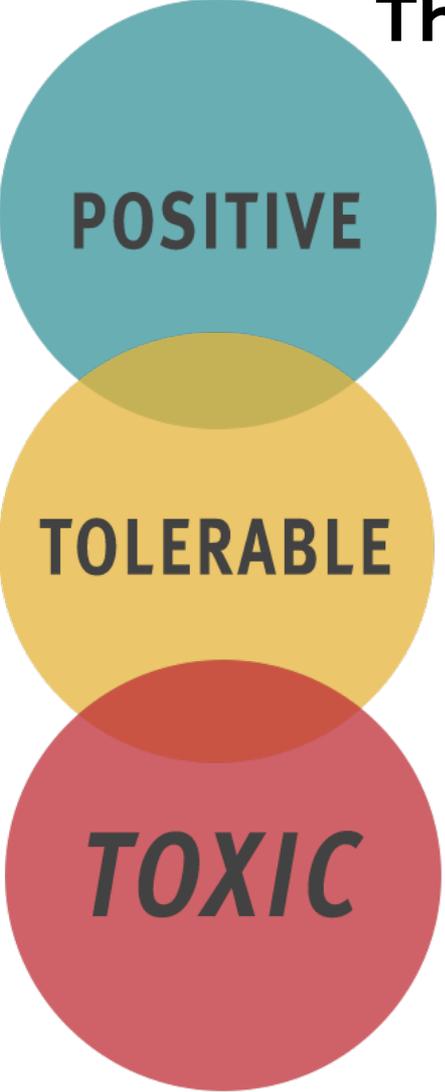
The Circuits for Cognitive, Emotional, and Social Capacities Are Highly Integrated Within the Architecture of the Developing Brain



The Threat: Toxic Stress Disrupts Brain Architecture and Other Biological Systems



The Need to Differentiate Three Types of Stress Response



POSITIVE

Brief increases in heart rate and mild elevations in stress hormone levels

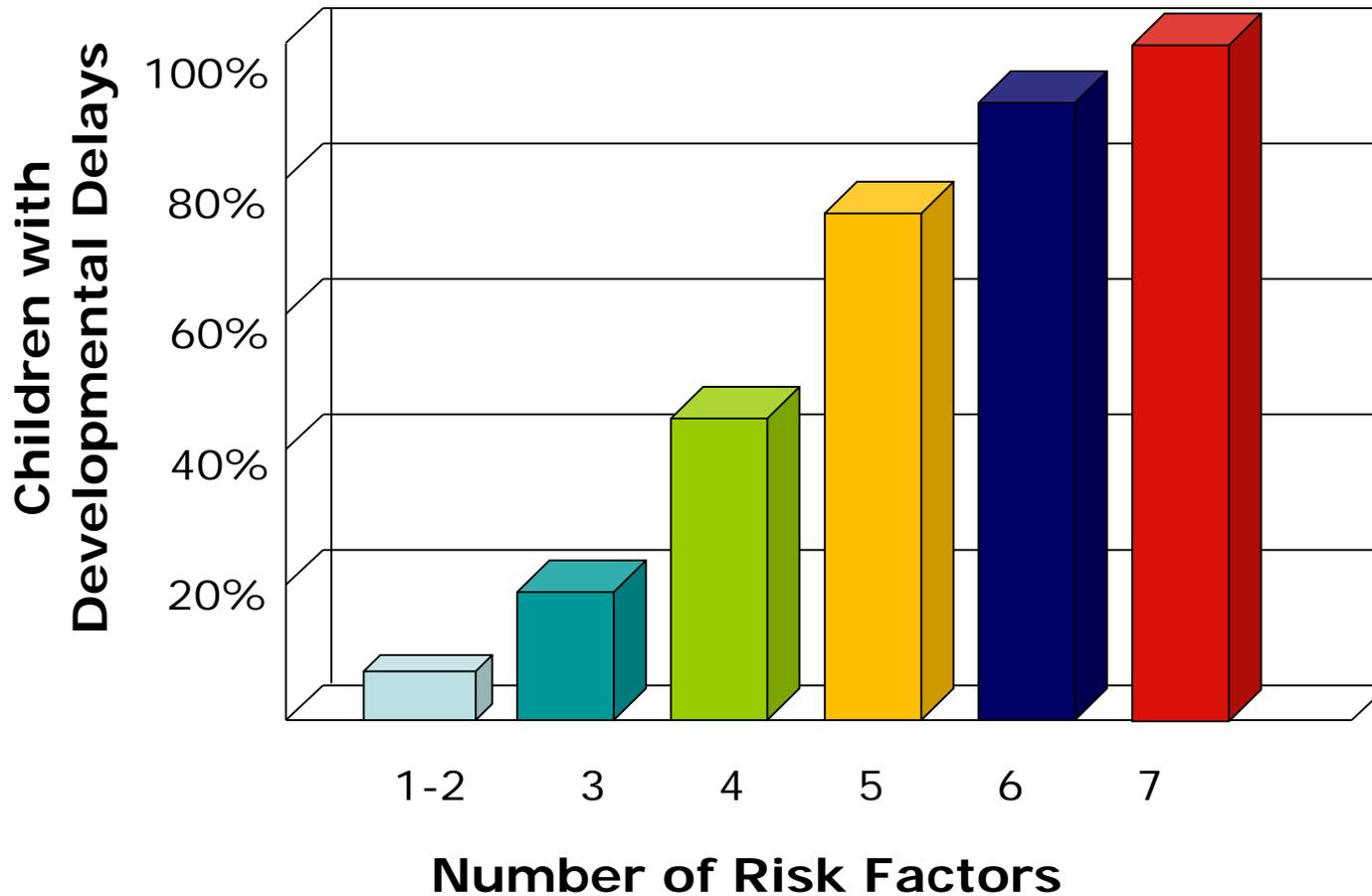
TOLERABLE

Serious but temporary stress responses buffered by supportive relationships

TOXIC

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

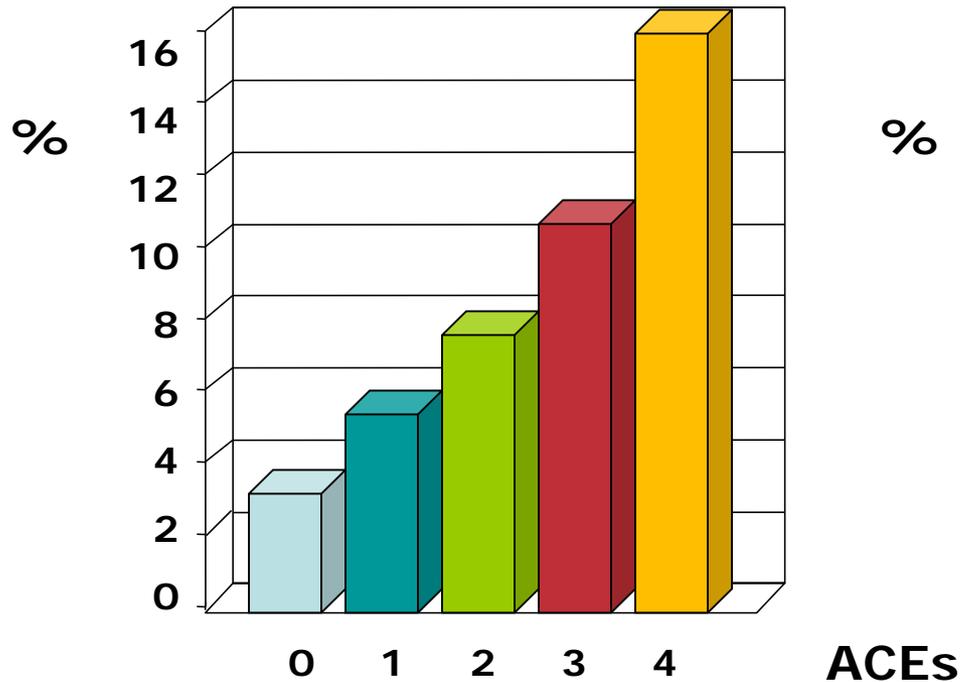
The Cumulative Pile Up of Adversity Impairs Development in the First Three Years



Source: Barth, et al. (2008)

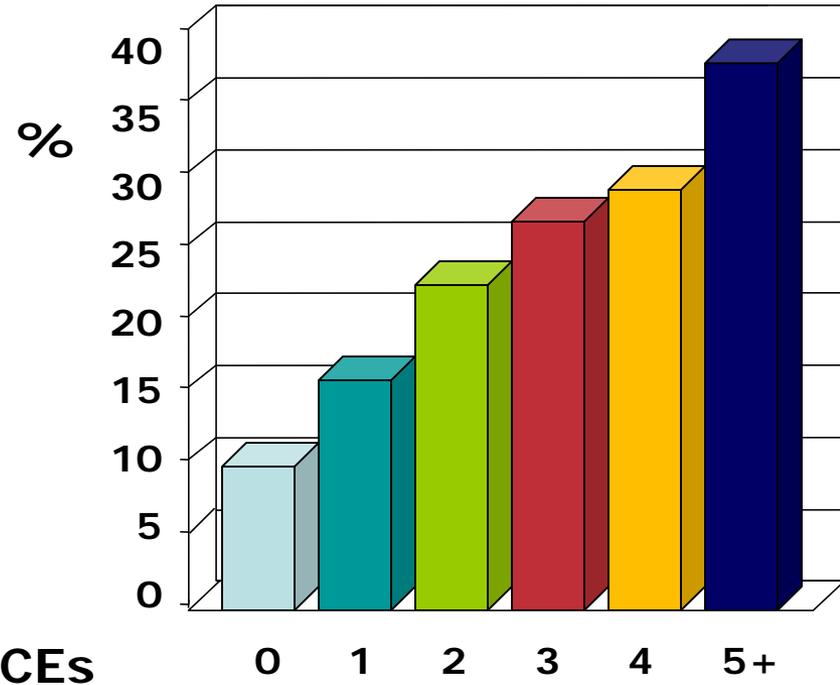
Risk Factors for Adult Substance Abuse Are Embedded in Adverse Childhood Experiences

Self-Report: Alcoholism



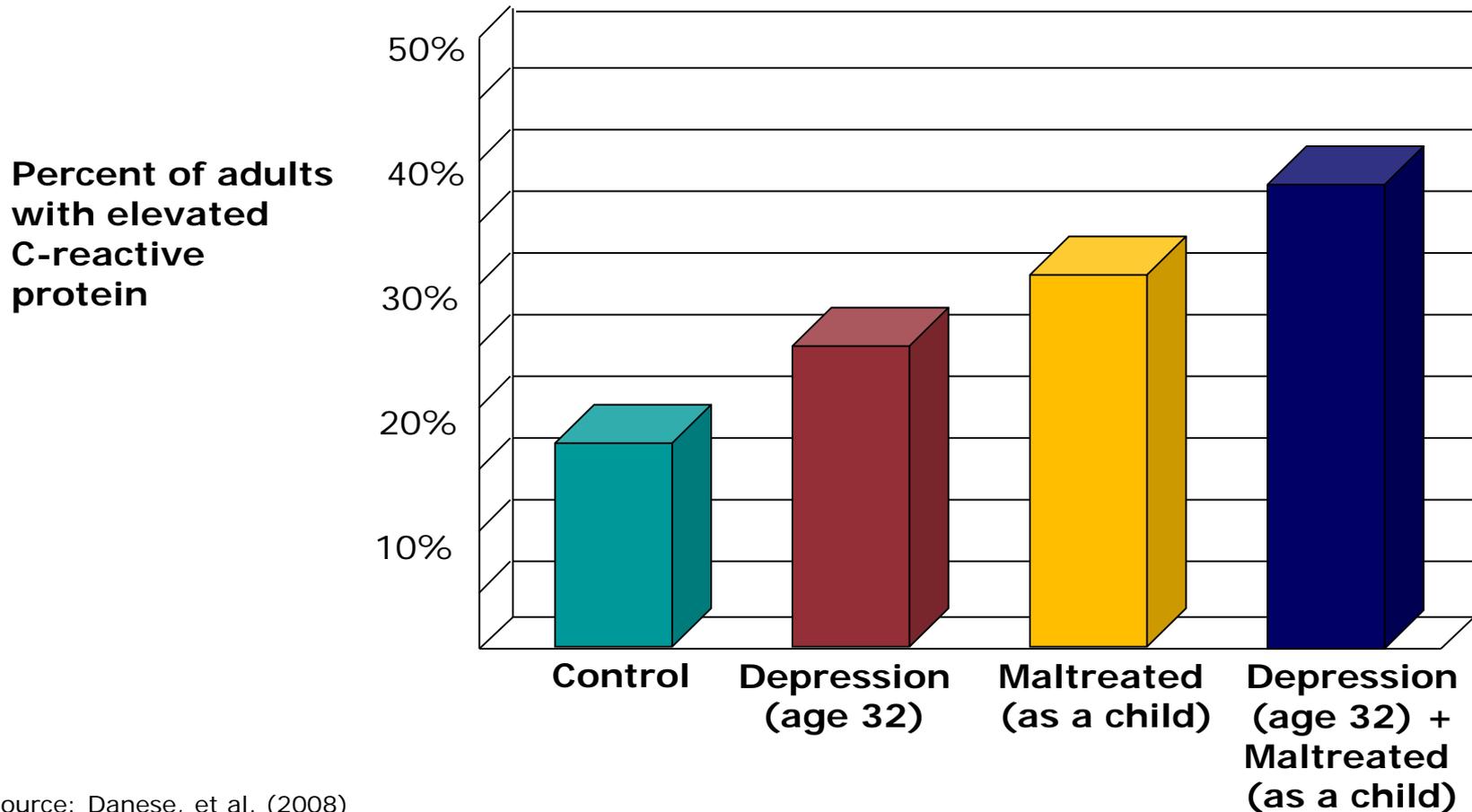
Source: Dube et al, 2002

Self-Report: Illicit Drugs



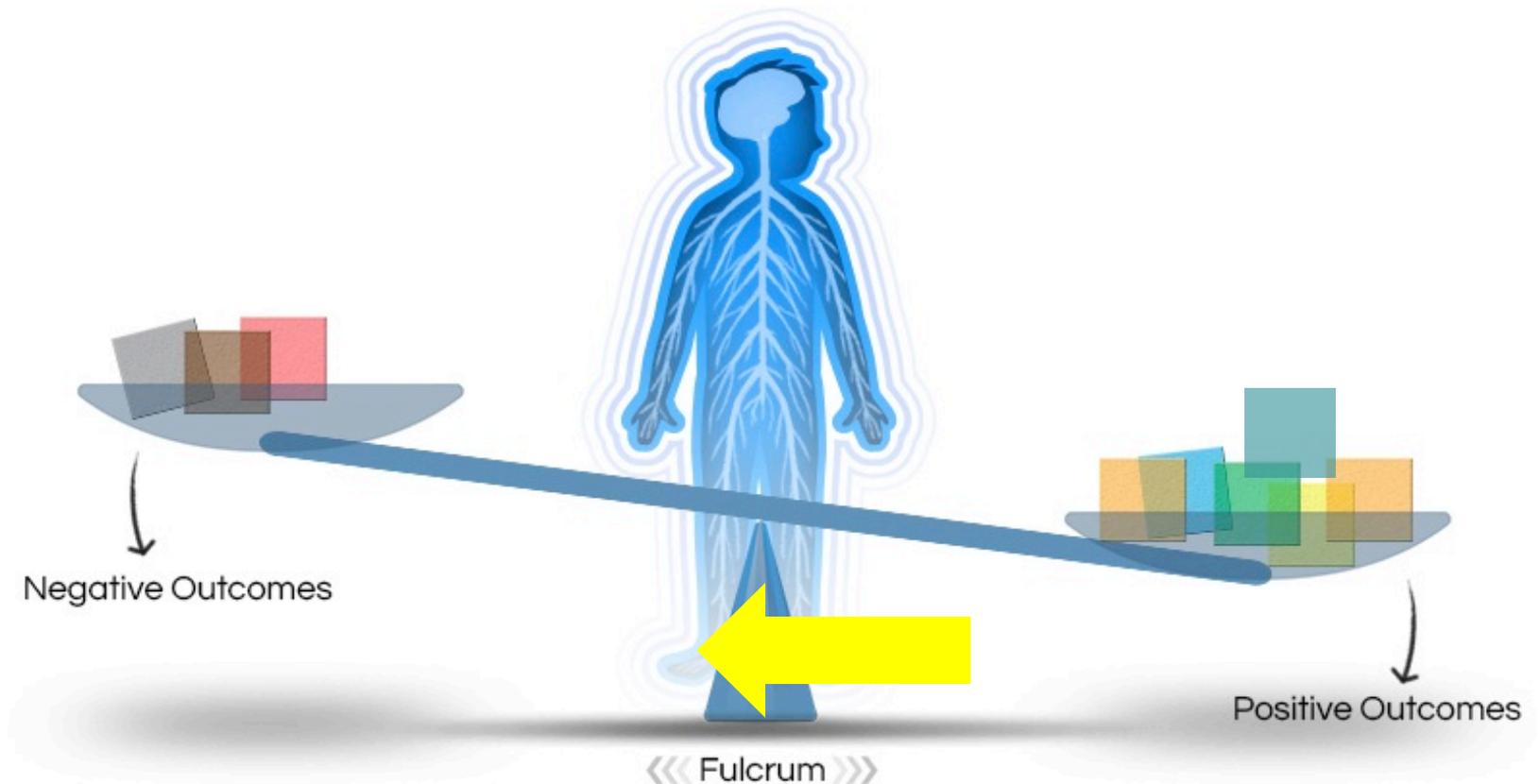
Source: Dube et al, 2005

Biological “Memories” Link Maltreatment in Childhood to Greater Risk of Adult Heart Disease

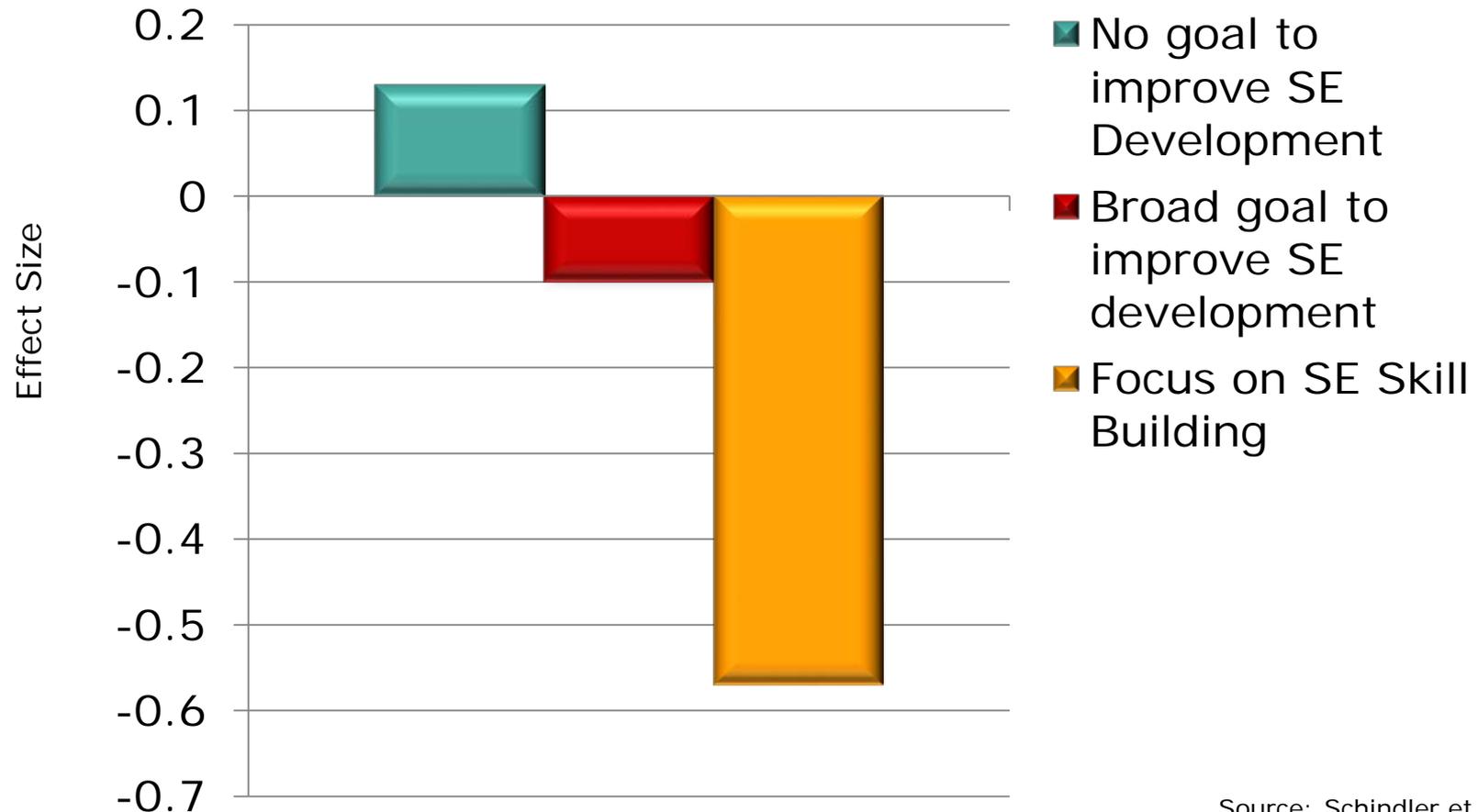


Source: Danese, et al. (2008)

Resilience Can Be Strengthened by Supportive Relationships and Skill-Building

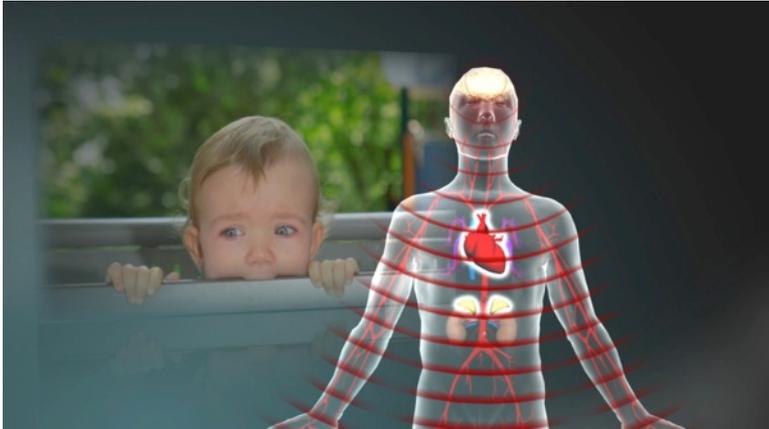


Social-Emotional Skill Building Keys Fewer Behavior Problems



Source: Schindler et al. (2015)

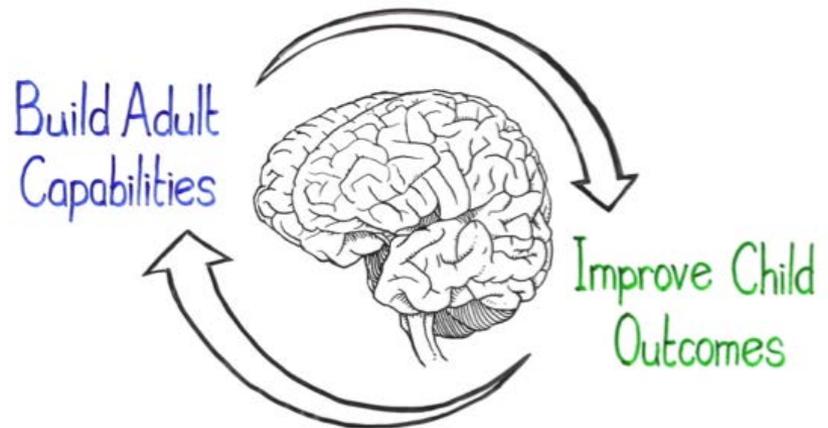
21st Century Science Suggests New Ways of Thinking About Intervention in the Early Years



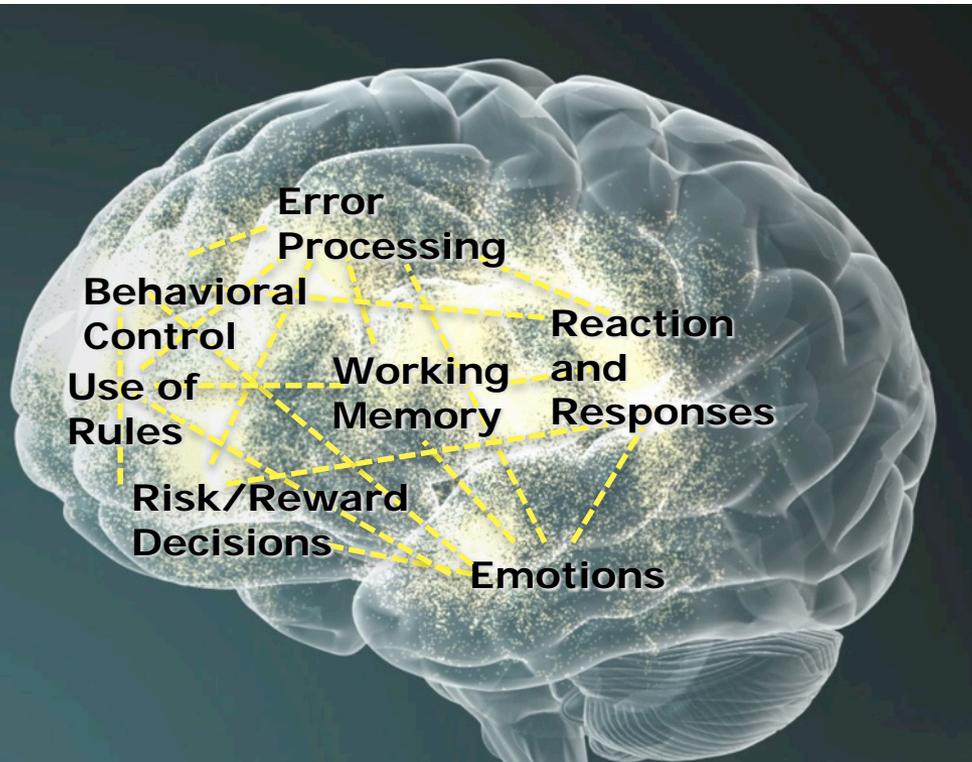
Early experiences affect lifelong health, not just learning.

Healthy development requires protection, not just enrichment.

Achieving much better outcomes for children experiencing significant adversity requires that we support the adults who care for them to transform their own lives.



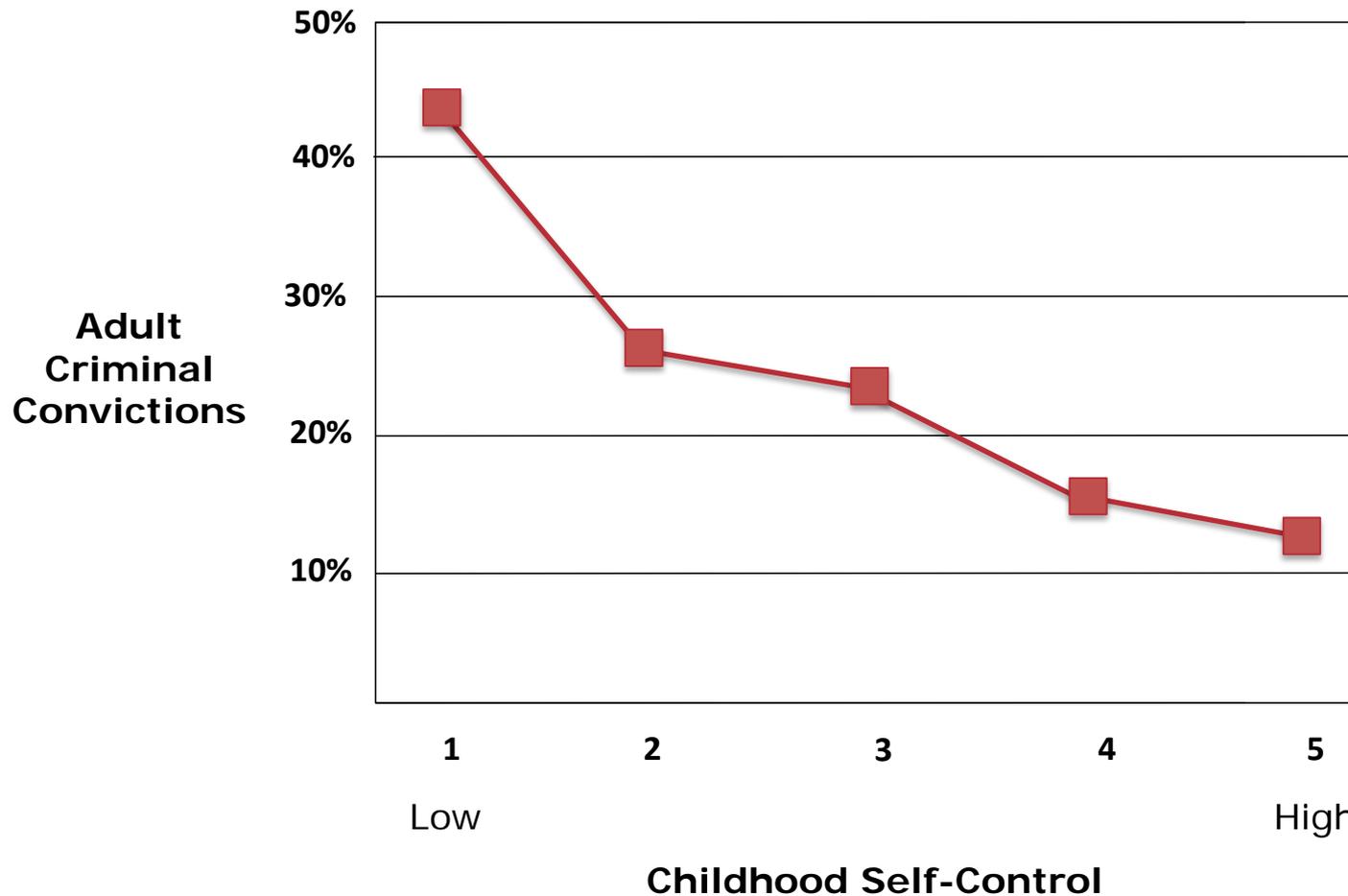
Skill Building for Educators and Parents Points to the Foundational Role of Executive Function and Self-Regulation Skills



These core dimensions of adult competence include the ability to:

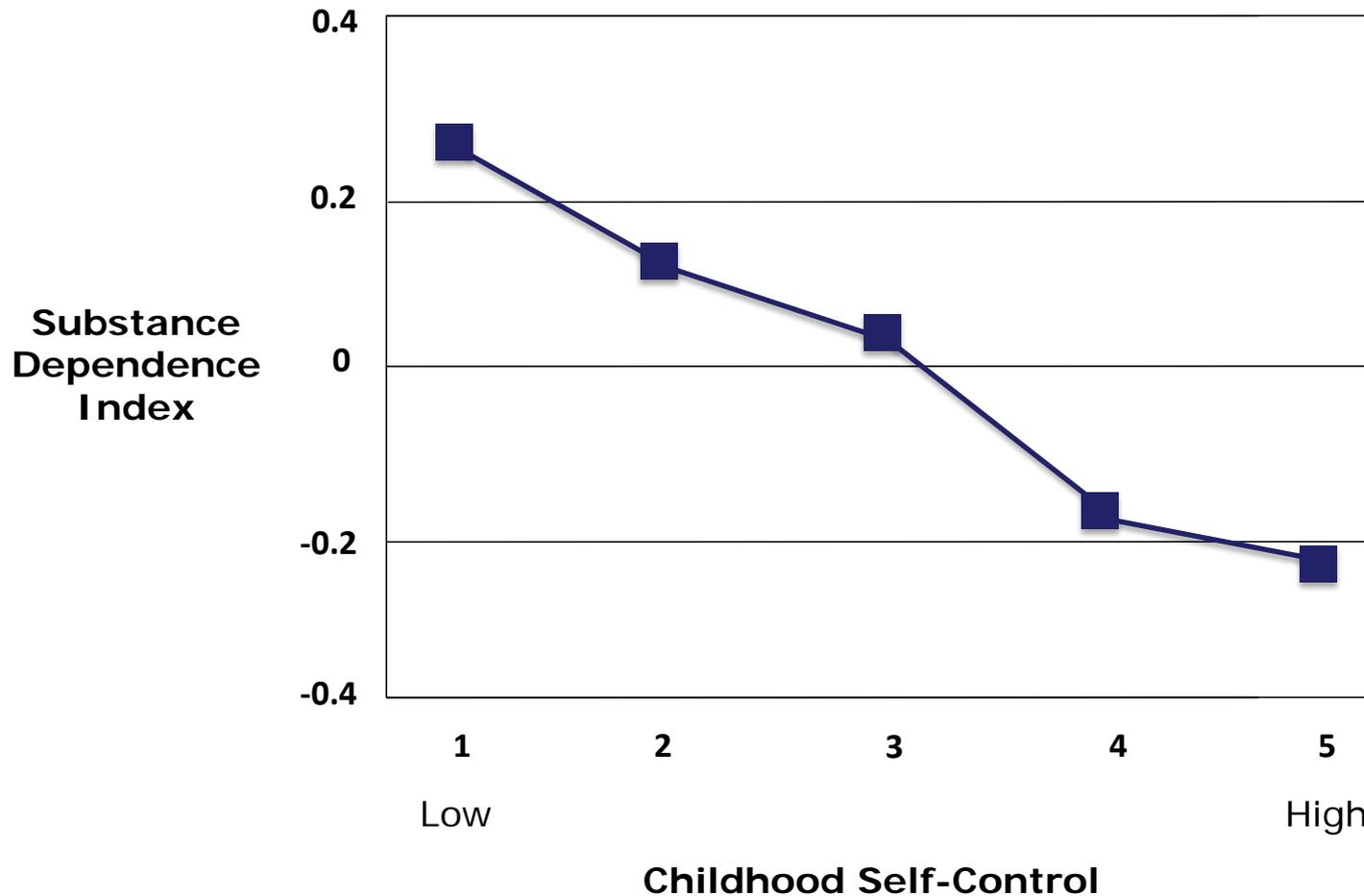
- focus and sustain attention
- set goals, make plans, and monitor actions
- make decisions and solve problems
- follow rules, control impulses, and delay gratification

Higher Childhood Self-Control Predicts Less Adult Crime



Source: Moffitt, et al. (2011)

Higher Childhood Self-Control Predicts Less Adult Substance Abuse



Source: Moffitt, et al. (2011)

Three Types of Executive Function Skills

Inhibitory Control — filter thoughts and impulses to resist temptations and distractions

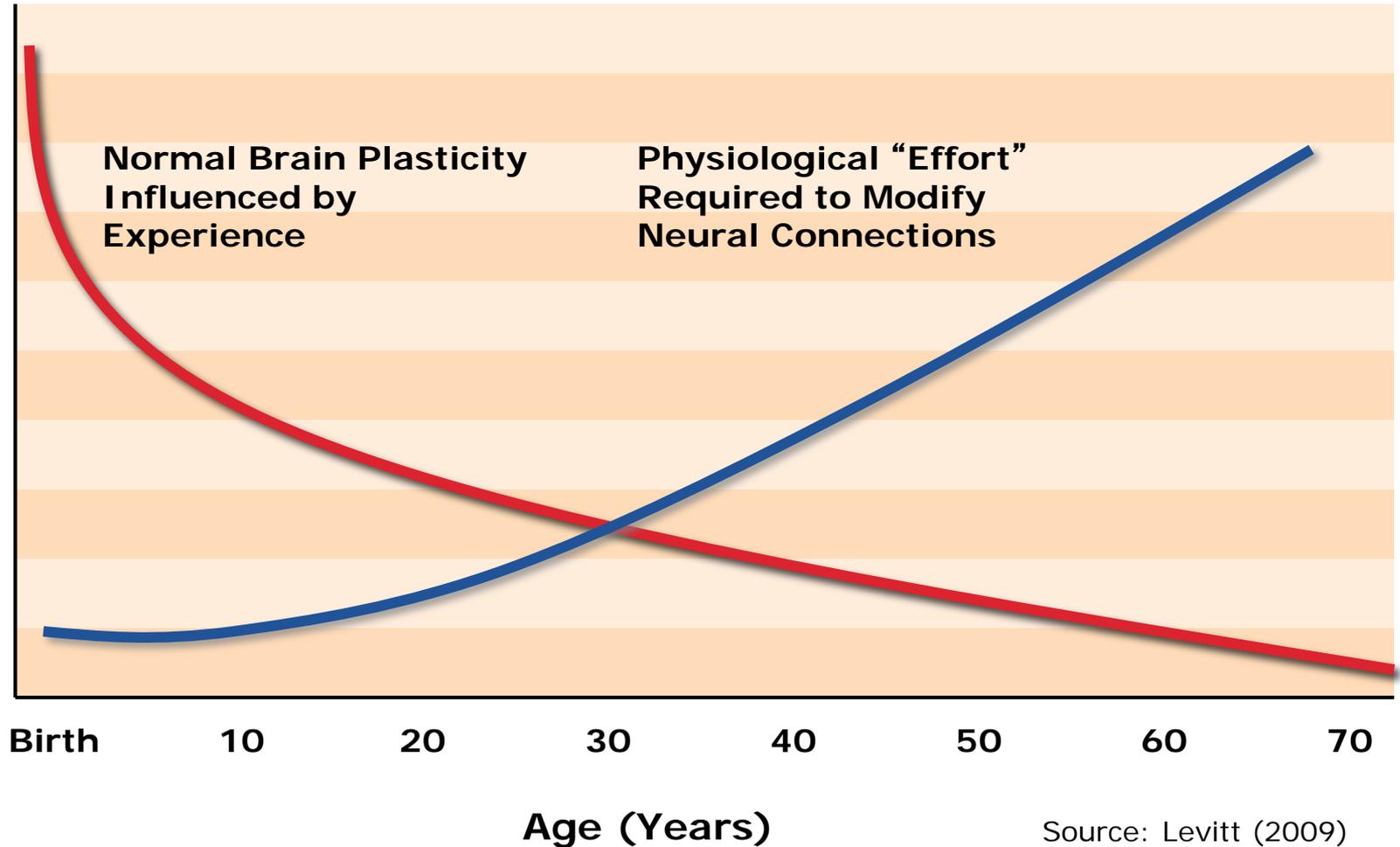


Working Memory — hold and manipulate information in our heads over short periods of time

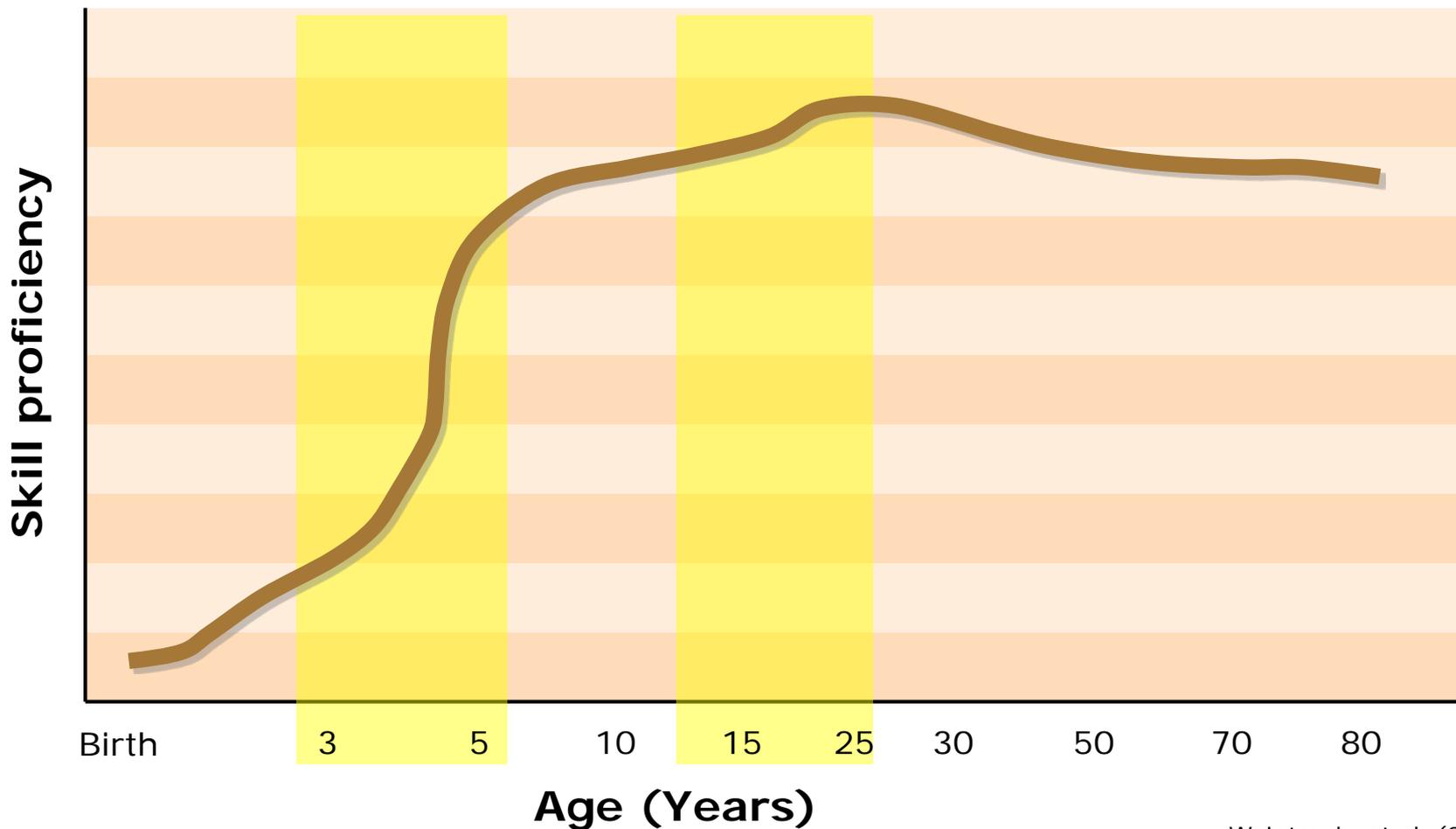
Mental flexibility — adjust to changed demands, priorities, or perspectives



The Challenge: The Ability to Change Brains and Behavior Decreases Over Time



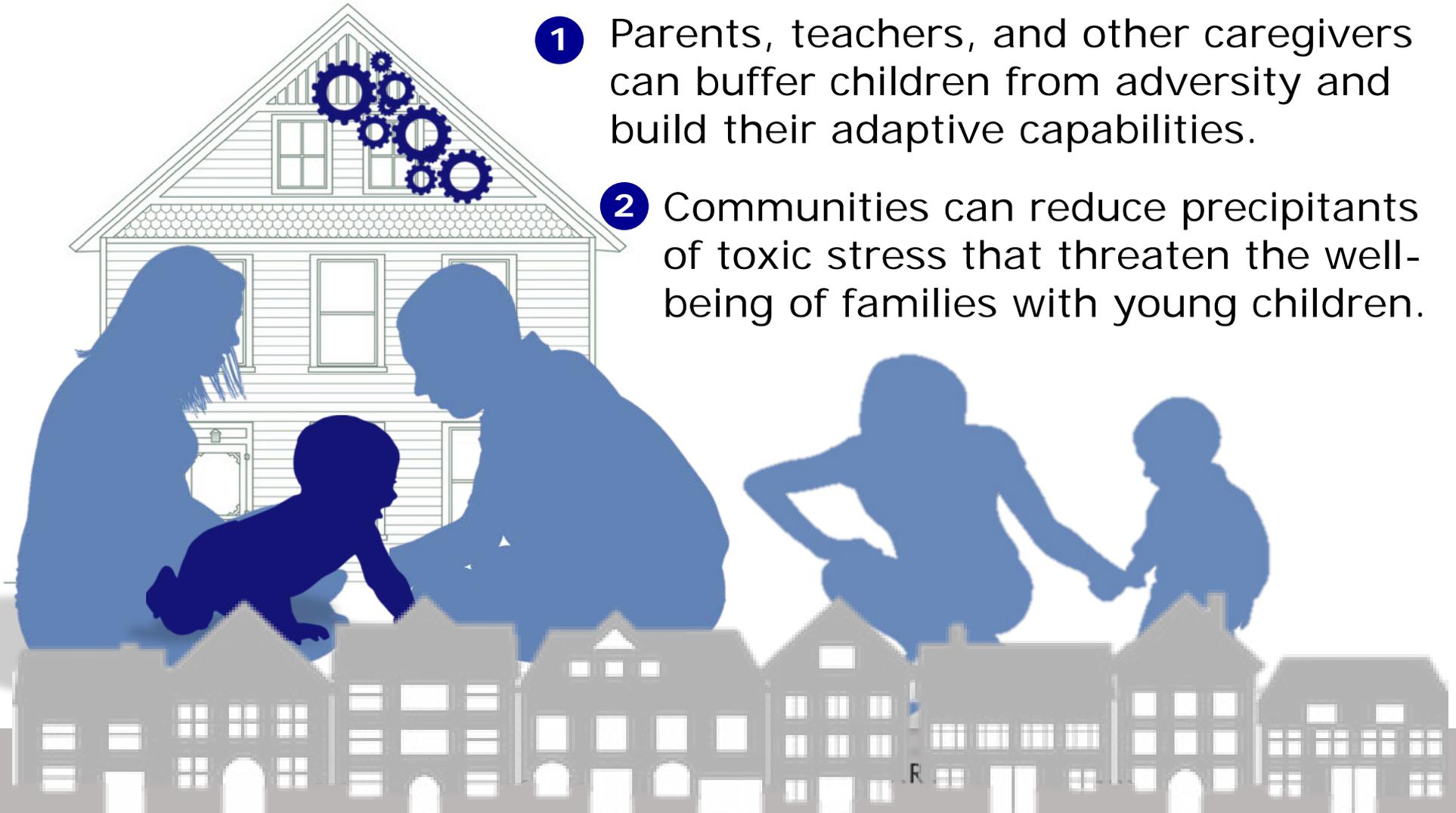
The Opportunity: The Development of Executive Function Skills Begins in Early Childhood and Extends into the Early Adult Years



Weintraub, et al. (2011)

The Strategy: Strengthening Caregiver and Community Capacities

- 1 Parents, teachers, and other caregivers can buffer children from adversity and build their adaptive capabilities.
- 2 Communities can reduce precipitants of toxic stress that threaten the well-being of families with young children.





Center on the Developing Child HARVARD UNIVERSITY

The science of development is a powerful source of fresh thinking about how to increase opportunities early in life for all children. Using current best practices as a starting point, the Center is working with a network of researchers, practitioners, and community members to design, implement, and evaluate innovative, science-based practice models that achieve transformational change for vulnerable children and families.

Reaching for Breakthroughs with Science

Science Innovation & Application

Science tells us that early childhood is a time of both great promise and considerable risk. Assuring the availability of responsive relationships, growth-promoting experiences, and healthy environments for all young children helps build sturdy brain architecture and the foundations of resilience.

Key Concepts

Deep Dives

Key Concepts

Innovation in Action

www.developingchild.harvard.edu





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