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EARLY EXPERIENCES ELEVATE EVERYTHING

EARLY BRAIN & CHILD DEVELOPMENT
AND THE FUTURE OF SOCIETY

DIPESH NAVSARIA, MPH, MSLIS, MD



DEPARTMENT OF PEDIATRICS
UW SCHOOL OF MEDICINE & PUBLIC HEALTH

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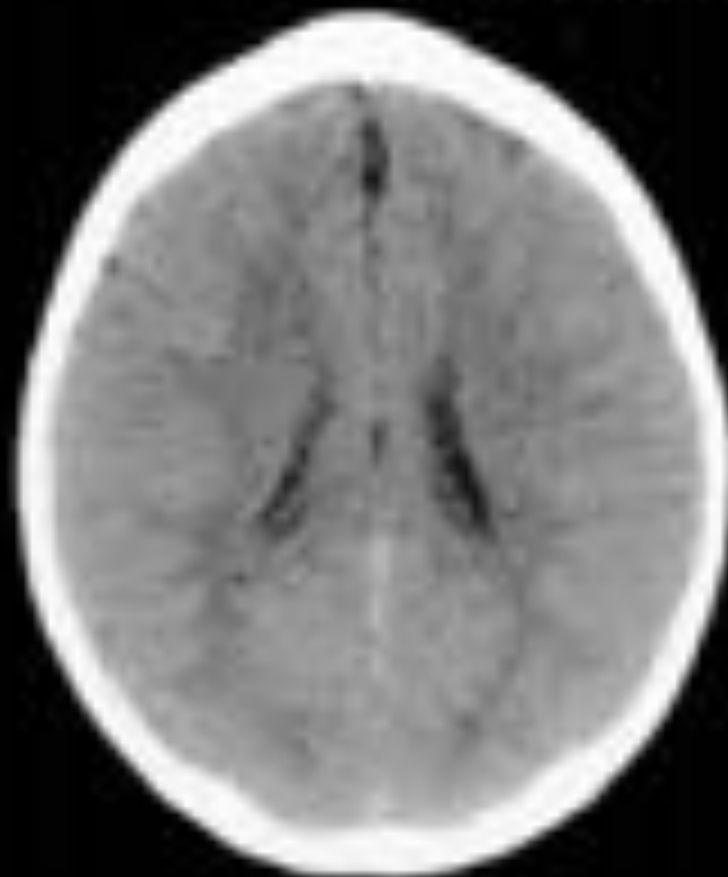
Live-tweeting encouraged!

A Story

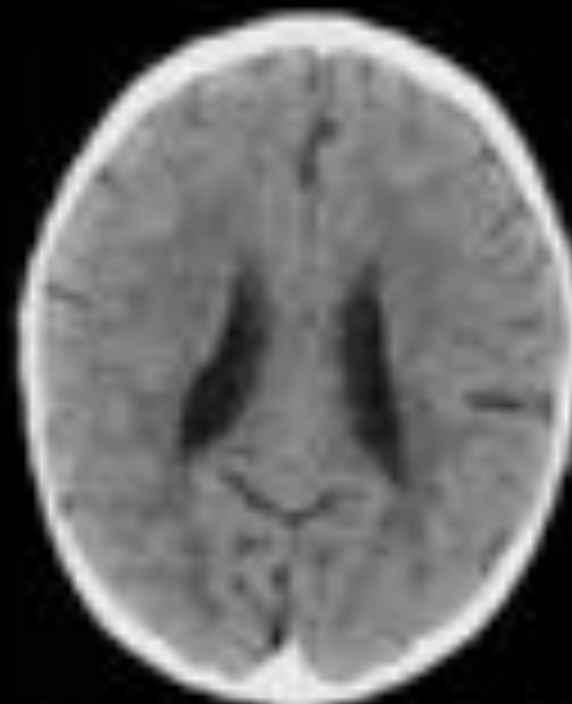
EARLY BRAIN AND CHILD DEVELOPMENT

Toxic stress in early childhood is associated with **persistent** effects on the nervous system and stress hormone systems that can **damage developing brain architecture** and lead to lifelong problems in learning, behavior and both physical and mental health.

3 Year Old Children



Normal



Extreme Neglect

Normal

Extreme Neglect

THE STRESS RESPONSE:

increases in cortisol and epinephrine

Three Levels of Stress Response

What if it's worse?
What if there's no supportive relationships?

Child abuse
Parental substance abuse
Homelessness

TOXIC STRESS



CHILDHOOD STRESS

Hyper-responsive
stress response

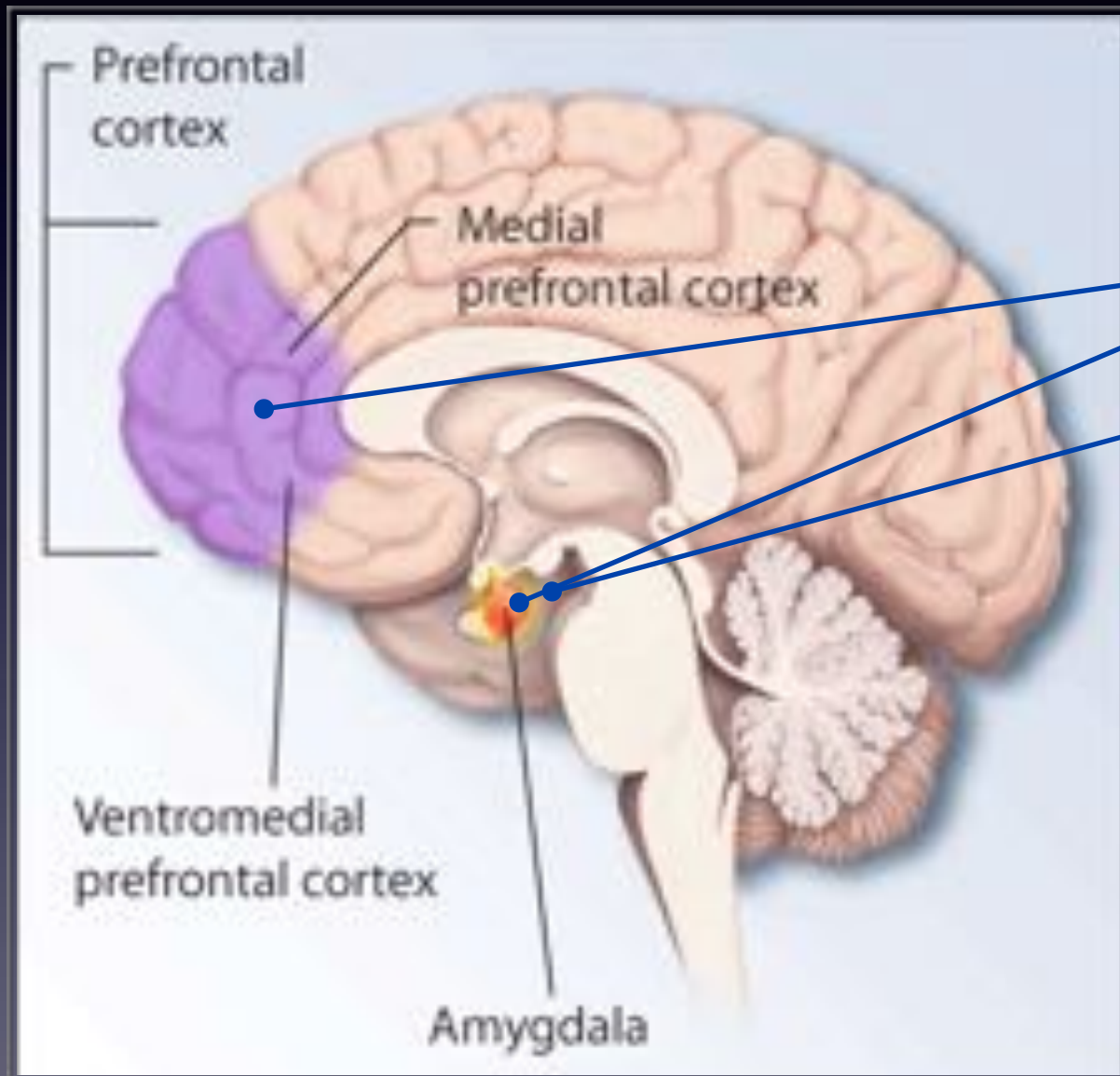
decreased
calm/coping

Chronic “fight or flight”

increased
cortisol / norepinephrine

Changes in Brain
Architecture

What happens?



Prefrontal cortex:
usually checks back to the amygdala
Executive function
Planning
major role in memory and mood

Hippocampus:
Toxic stress/early adversity:
Delayed cognitive maturation
smaller hippocampal volumes,
poor memory, labile moods.

Toxic stress, early adversity:
Lower neuronal density,
decreased function

ADHD **or** **Adversity?**



Impulsive

Can't plan ahead

Anxious

Can't delay gratification

Labile mood

Poor memory

EARLY BRAIN AND CHILD DEVELOPMENT

The Result

THE ADVERSE CHILDHOOD EXPERIENCES STUDY

**The Most Important Study
You've (Probably) Never Heard Of.**

In 1985, Dr Vincent Felitti noticed many patients in his obesity treatment programs had prior history of abuse or trauma

The CDC worked with Kaiser Permanente and looked retrospectively at over 17,000 patients.

This was the first study to simultaneously assess childhood exposure to multiple types of abuse, neglect, domestic violence and serious household dysfunction.

THE ADVERSE CHILDHOOD EXPERIENCES STUDY



Study participants were middle-class Americans from San Diego, 80% white, 74% attended college, average age of 57, split evenly between men and women.

**Not exactly an impoverished,
“at-risk” population.**

THE ADVERSE CHILDHOOD EXPERIENCES STUDY

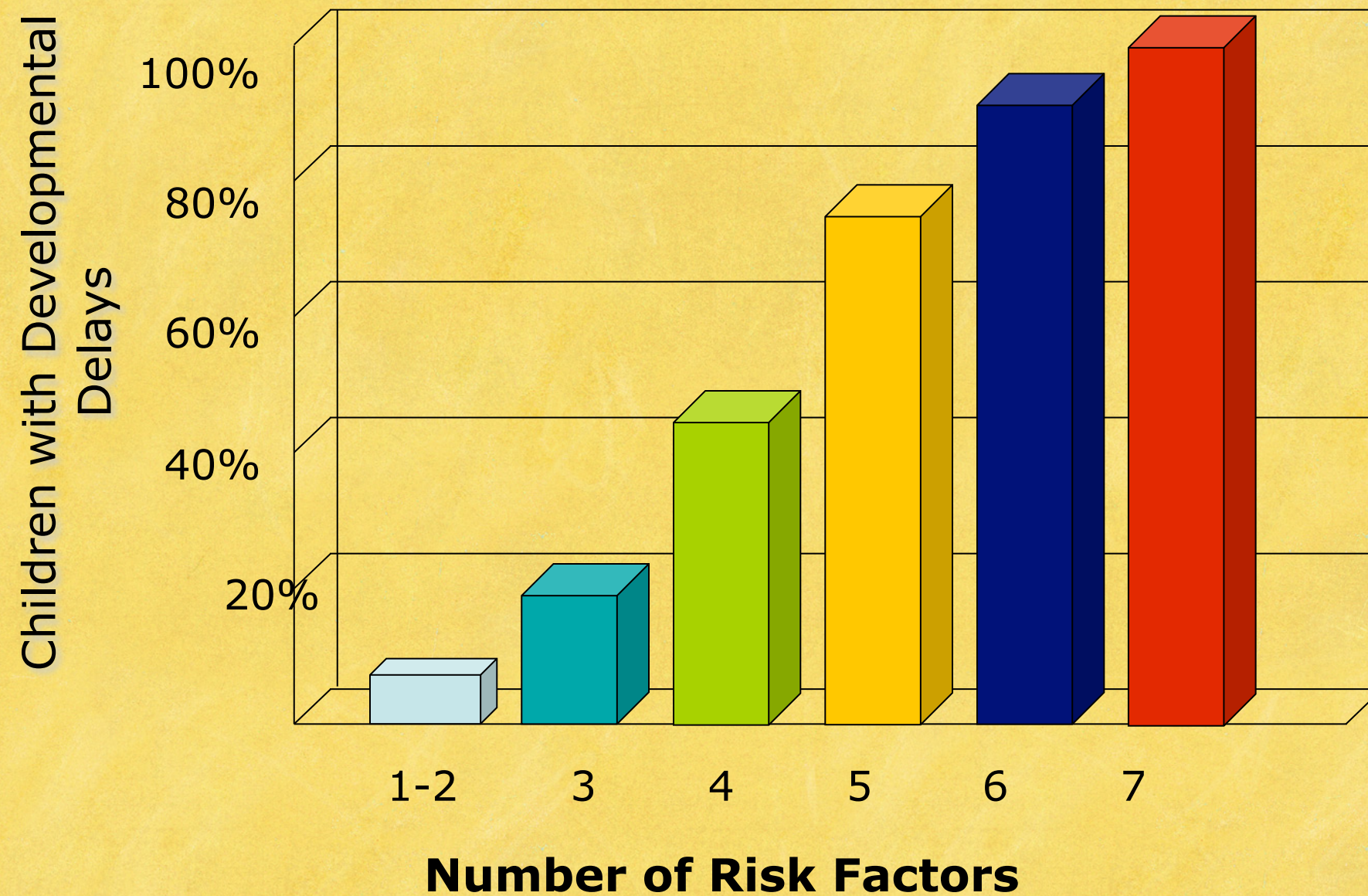
Emotional abuse	10%
Physical abuse	26%
Sexual abuse	21%
Emotional neglect	15%
Physical neglect	10%
Mother treated violently	13%
Household substance abuse	28%
Household mental illness	20%
Parental separation or divorce	24%
Incarcerated household member	6%



ACE Score (one point for each category listed)	Prevalence in study
0	33%
1	26% 
2	16%
3	10%
4	6% 
5	5%
6	6%

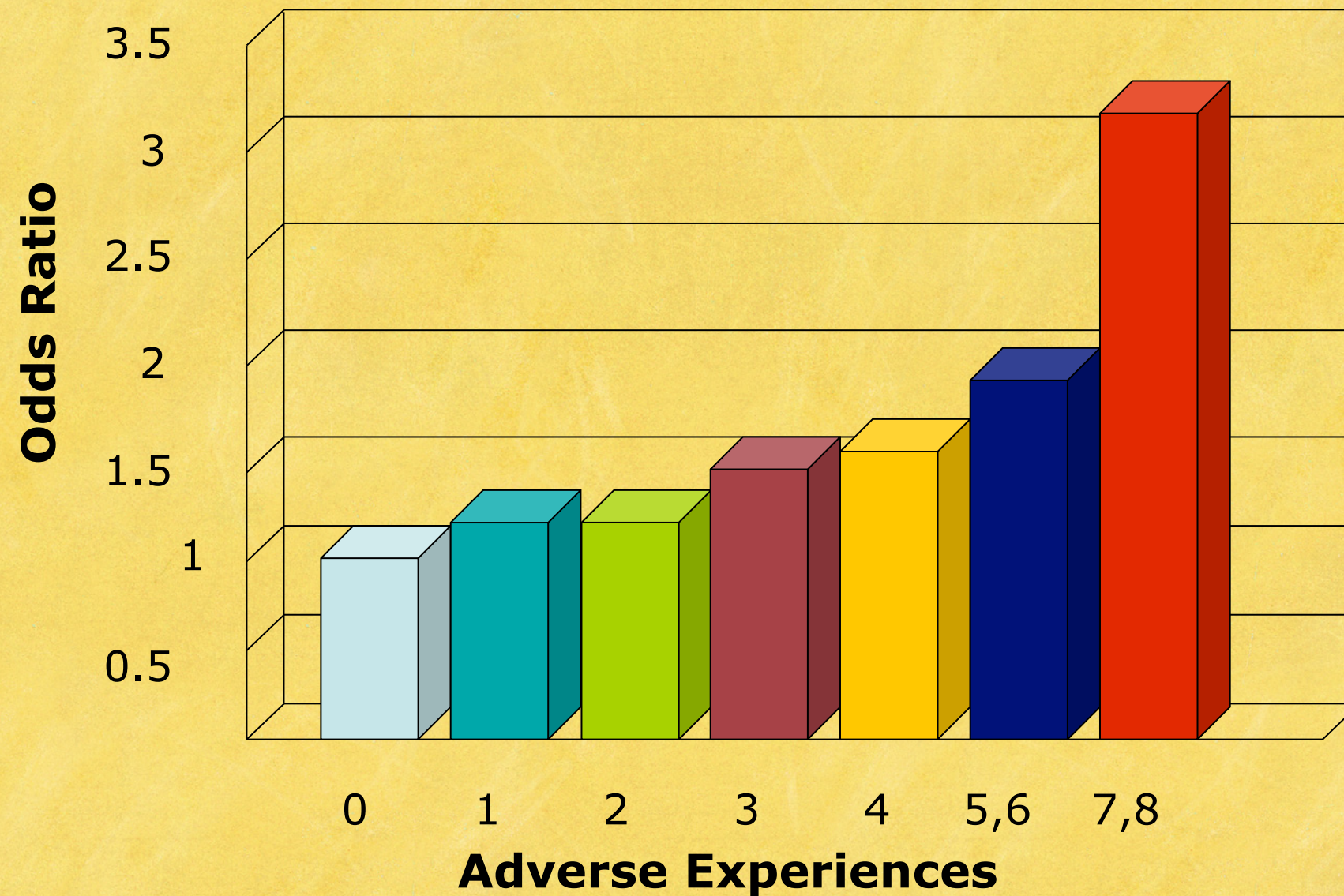
Not only are they unexpectedly common...
...their effects are **cumulative**.

Significant Adversity Impairs Development in the First Three Years



Source: Barth, et al. (2008) *via* Center on the Developing Child at Harvard University

Risk Factors for Adult Heart Disease are Embedded in Adverse Childhood Experiences



Source: Dong, et al. (2004) *via* Center on the Developing Child at Harvard University

NON TRAUMA INFORMED

POWER OVER
YOU CAN'T CHANGE
JUDGING
PEOPLE NEED FIXING FIRST
OPERATE FROM THE DOMINANT CULTURE
PEOPLE ARE OUT TO GET YOU
RIGHT/WRONG
HELPING
"YOU'RE CRAZY!"
COMPLIANCE/OBEDIENCE
NEED-TO-KNOW BASIS FOR INFO
PRESENTING ISSUE
"US AND THEM"
LABELS, PATHOLOGY
FEAR-BASED
I'M HERE TO FIX YOU
DIDACTIC
PEOPLE MAKE BAD CHOICES
BEHAVIOR VIEWED AS PROBLEM
WHAT'S WRONG WITH YOU?
BLAME/SHAME
GOAL IS TO DO THINGS THE 'RIGHT' WAY
PRESCRIPTIVE
PEOPLE ARE BAD
CONSIDER ONLY RESEARCH AND EVIDENCE

POWER WITH
YOUR BRAIN IS 'PLASTIC'
OBSERVING
PEOPLE NEED SAFETY FIRST
CULTURAL HUMILITY
PEOPLE CAN LIVE UP TO THE TRUST YOU GIVE THEM
MULTIPLE VIEWPOINTS
LEARNING
"IT MAKES SENSE"
EMPOWERMENT/COLLABORATION
TRANSPARENCY AND PREDICTABILITY
WHOLE PERSON AND HISTORY
WE'RE ALL IN THIS TOGETHER
BEHAVIOR AS COMMUNICATION
EMPATHY-BASED
SUPPORT HEALING
PARTICIPATORY
PEOPLE WHO FEEL UNSAFE DO UNSAFE THINGS
BEHAVIOR VIEWED AS SOLUTION
WHAT HAPPENED TO YOU?
RESPECT
GOAL IS TO CONNECT
CHOICE
PEOPLE ARE DOING THE BEST THEY CAN
CONSIDER ALSO LIVED EXPERIENCE

TRAUMA INFORMED CARE



What lies
beneath
behavior?

Underlying
basic human
need?

Developmental
stage?

Current state
of the *nervous*
system?

Survival
response:
fight? flight?
freeze?

Coping strategy
that no longer
works?

Structural
changes
in the *brain?*

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How is this
"problem"
the child's
solution?

Trauma-induced
thinking & conditioning?

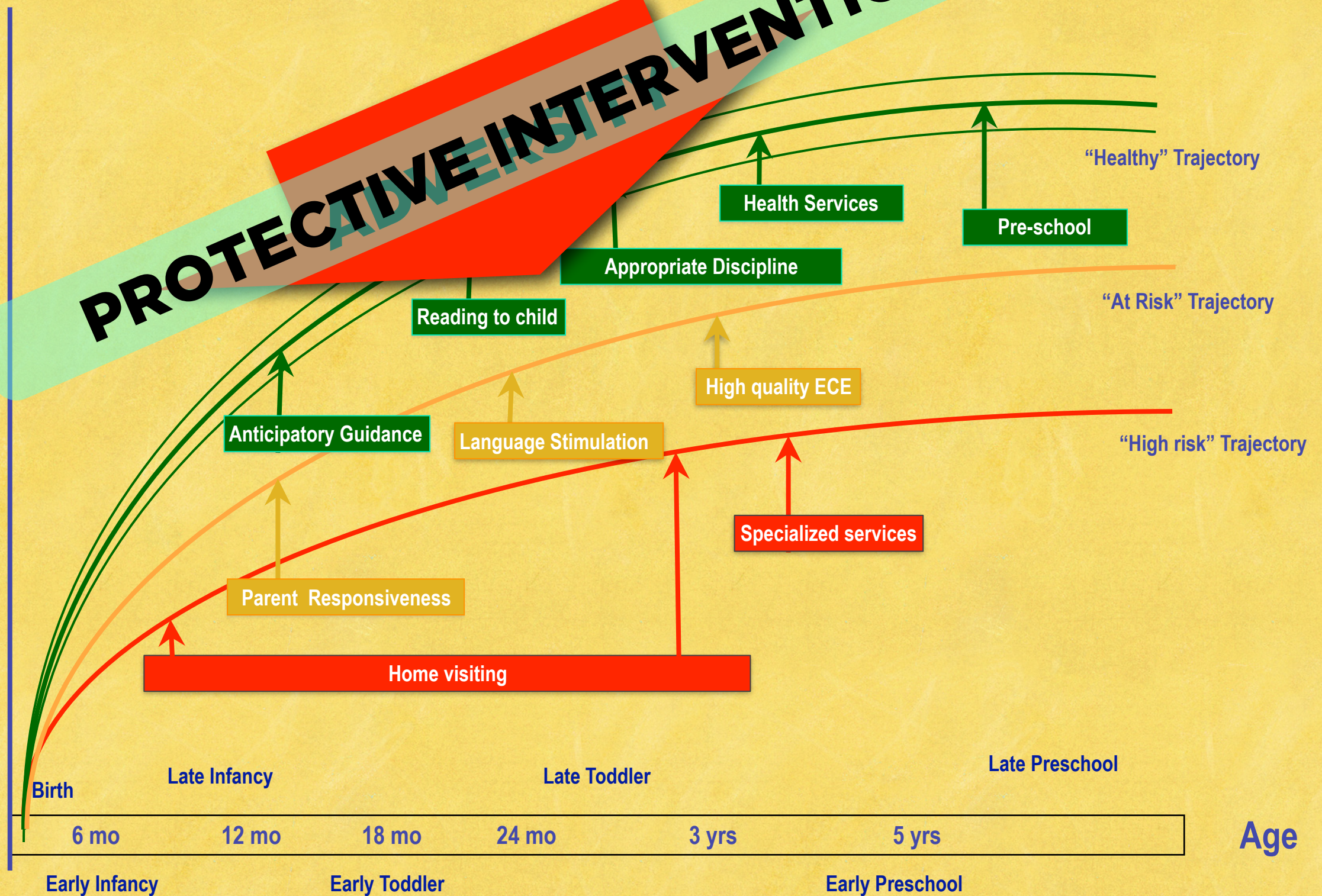
**(Back to the)
Story**

EARLY BRAIN AND CHILD DEVELOPMENT

Creating the right conditions for early childhood development is likely to be **more effective and less costly** than addressing problems at a later age.

Developmental Progress

PROTECTIVE INTERVENTIONS



Three Promising Domains for EB CD Innovation

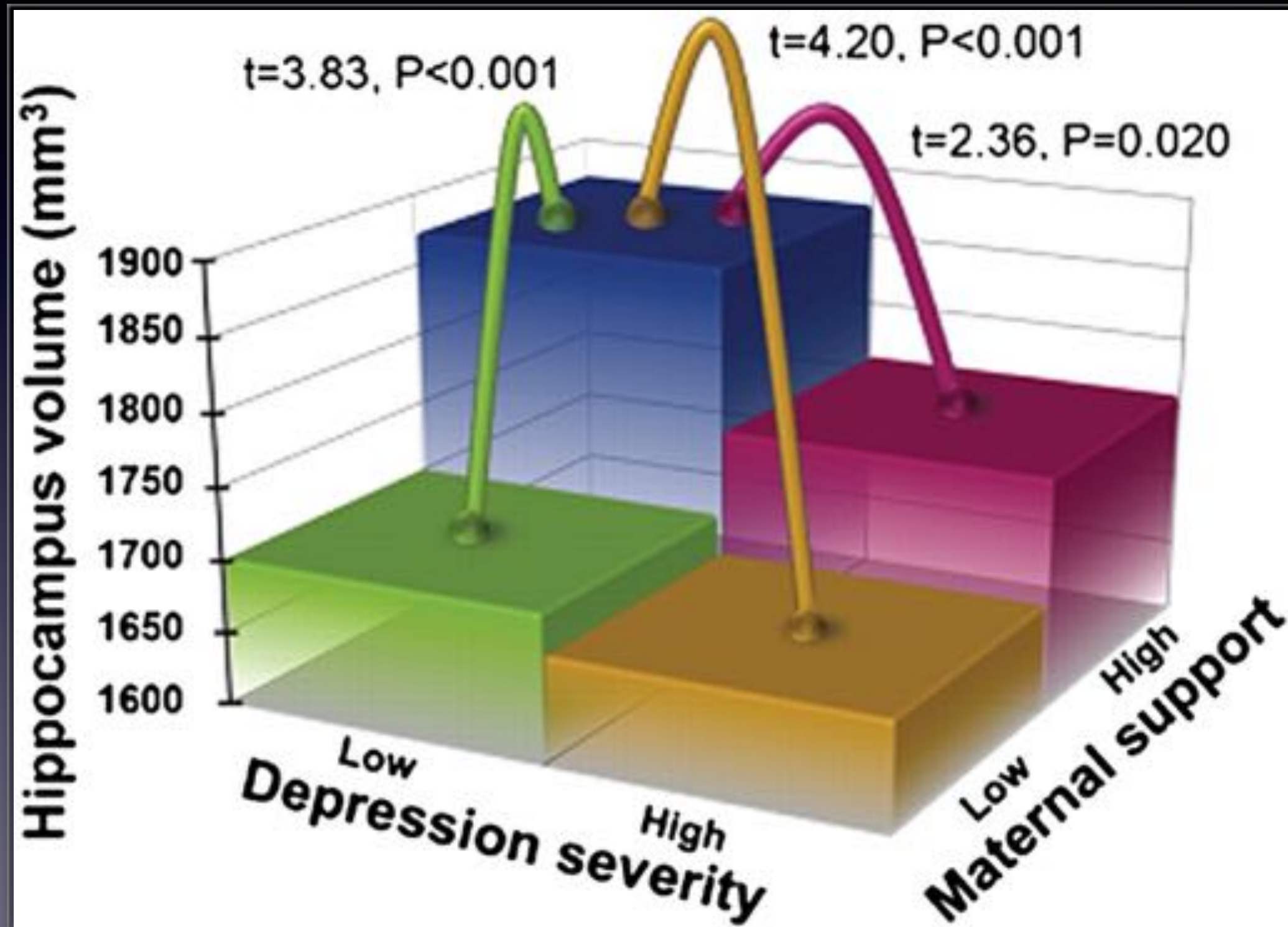
Jack Shonkoff, MD

Reduce emotional and behavioral barriers to learning.

Enhance the healthy development of children by transforming the lives of their parents.

Reconceptualize the health dimension of early childhood policy and practice.

Hippocampus Volume by Preschool Depression Severity and Maternal Support

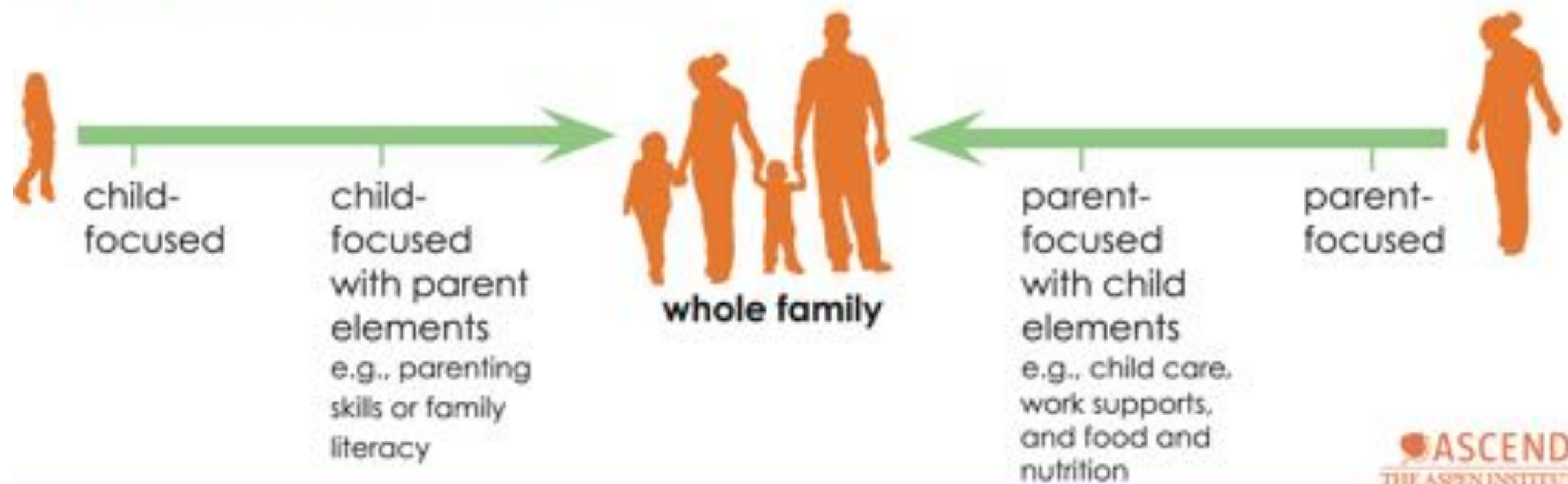




TWO OPEN WINDOWS

INFANT AND PARENT NEUROBIOLOGIC CHANGE

The Two-Generation Continuum



Two-generation approaches put the **WHOLE FAMILY** on a path to economic security.



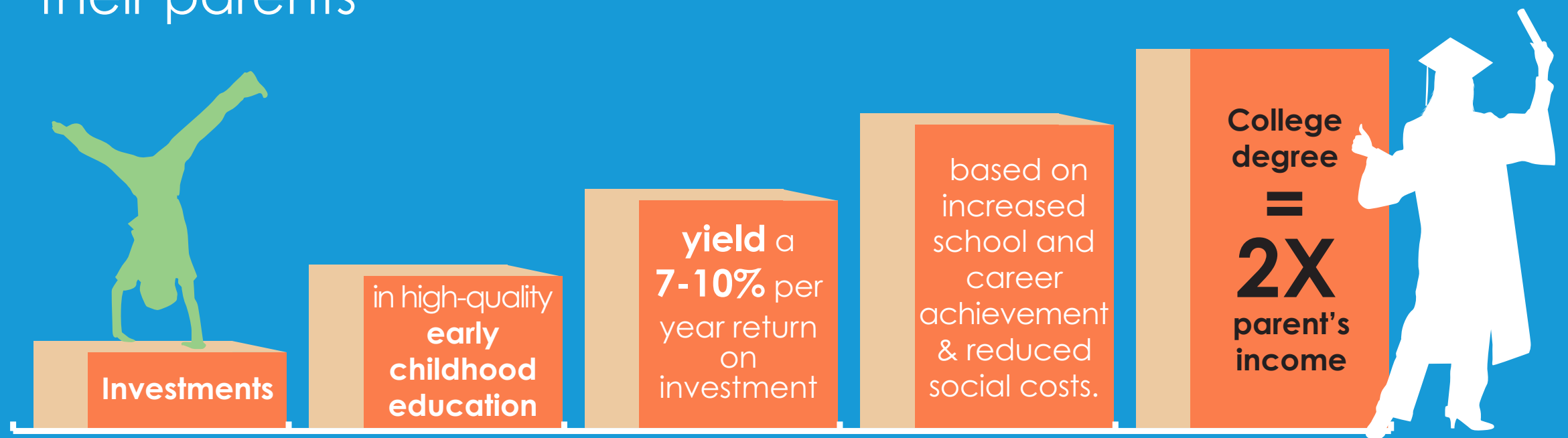
web: ascend.aspeninstitute.org

 @aspenscend

 /aspenscend

Education

Return on investment in education for children AND their parents



Economic Supports

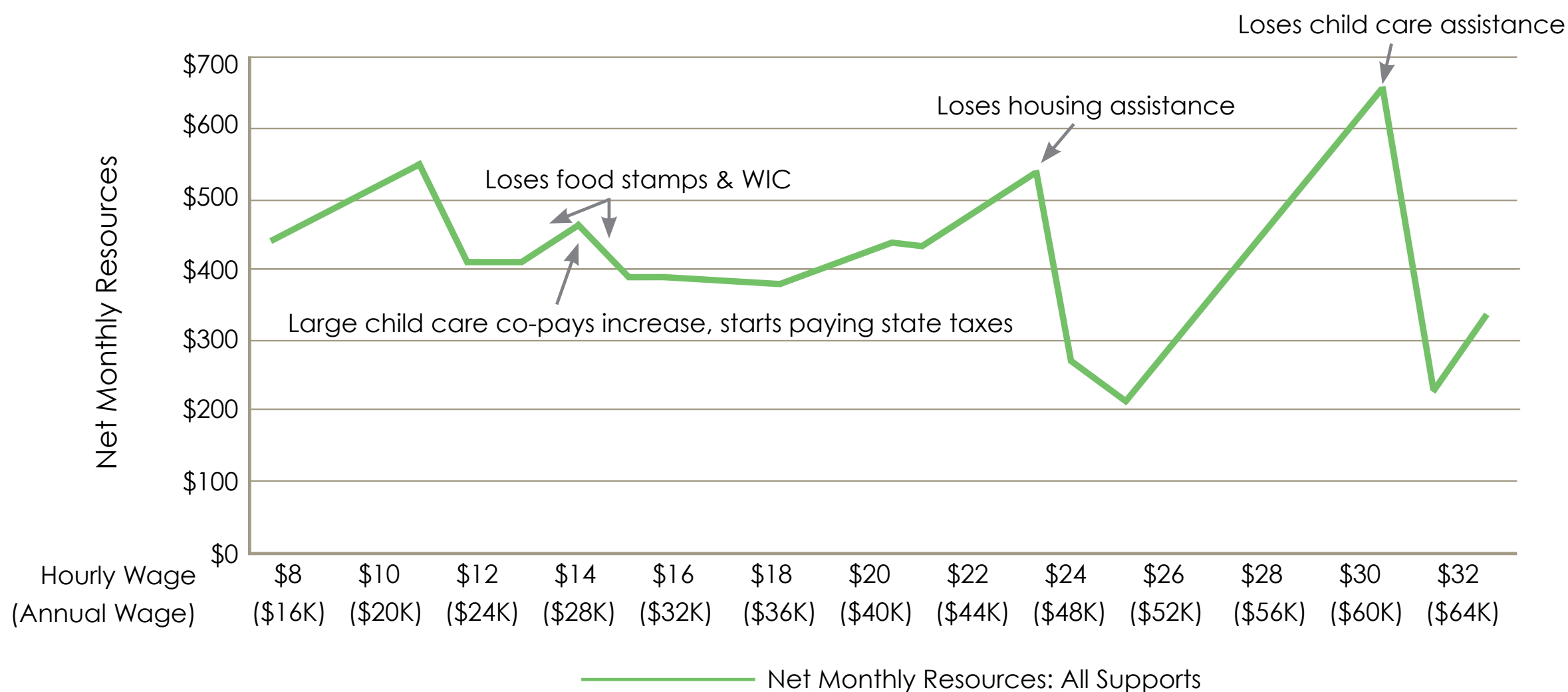
Supports allow parents to pursue skill-building and education...leading to better jobs and long-term financial stability.

Housing
Transportation
Financial Education and Asset-building
Tax Credits
Child Care Subsidies
Student Financial Aid
Health Insurance
Food Assistance

The United Kingdom's War on Child Poverty

Economic Supports

Income Growth and Impact on Available Economic Supports



Crittenton Women's Union. (2009). "Combined Monthly Resources (earnings plus government work supports) [chart]." Retrieved from: http://www.liveworkthrive.org/research_and_tools/reports_and_publications/The_Cliff_Effect_Experience_Voices_of_Women_on_the_Path_to_Economic_Independence.

Economic Supports

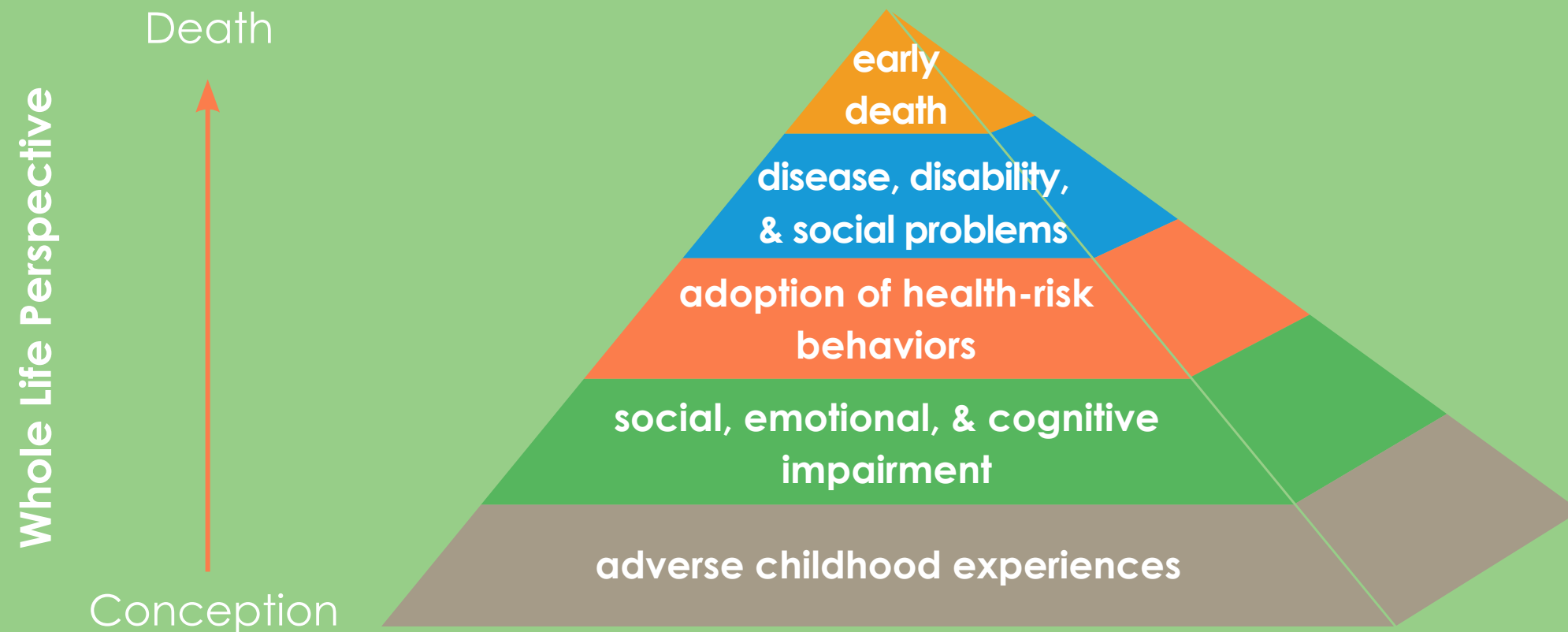
Children with Savings Accounts More Likely to Attend College



CFED. (2013). *Investing in Hope: A two-generation approach to asset building*. Washington, DC.

Health & Well-Being

Childhood Trauma has Long-Term Effects



Randa, R. F. & Felitti, V. J. *The Adverse Child Experiences Study*. Retrieved from <http://acestudy.org>

Social Capital

Peer Support

Contact with Family, Friends & Neighbours

Participation in Community Organizations

School and Workplace Contacts

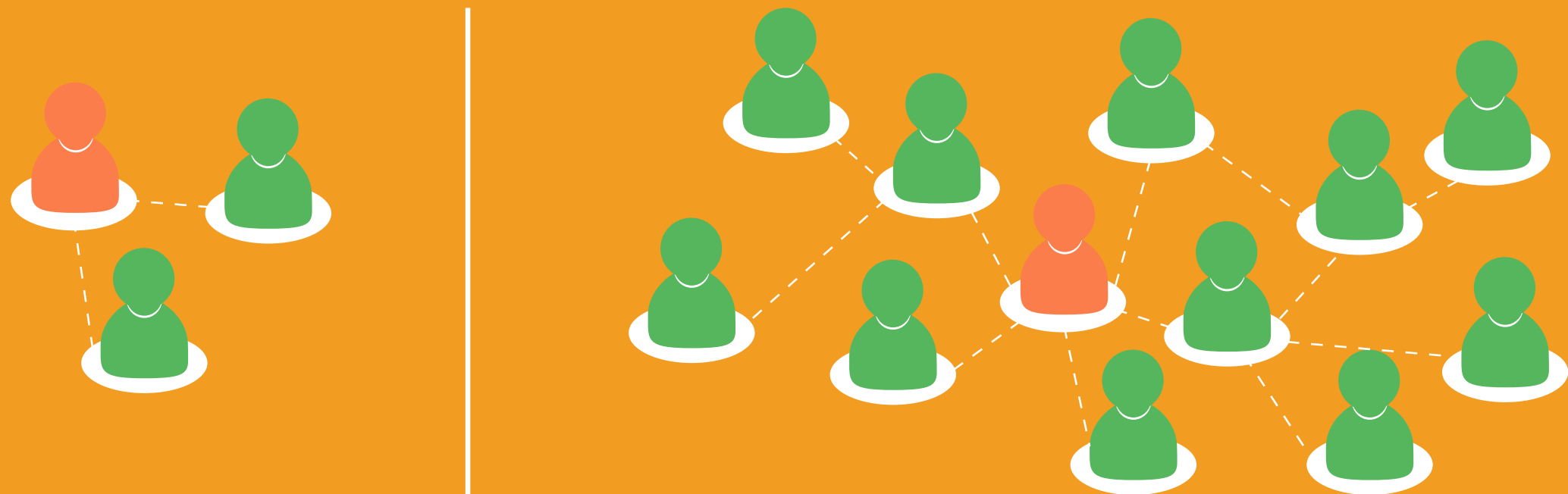
Use of Case Managers & Coaches

Social Networks

Mental Health Services

Social Capital

As Networks Expand, So Do Resources and Support



Applications

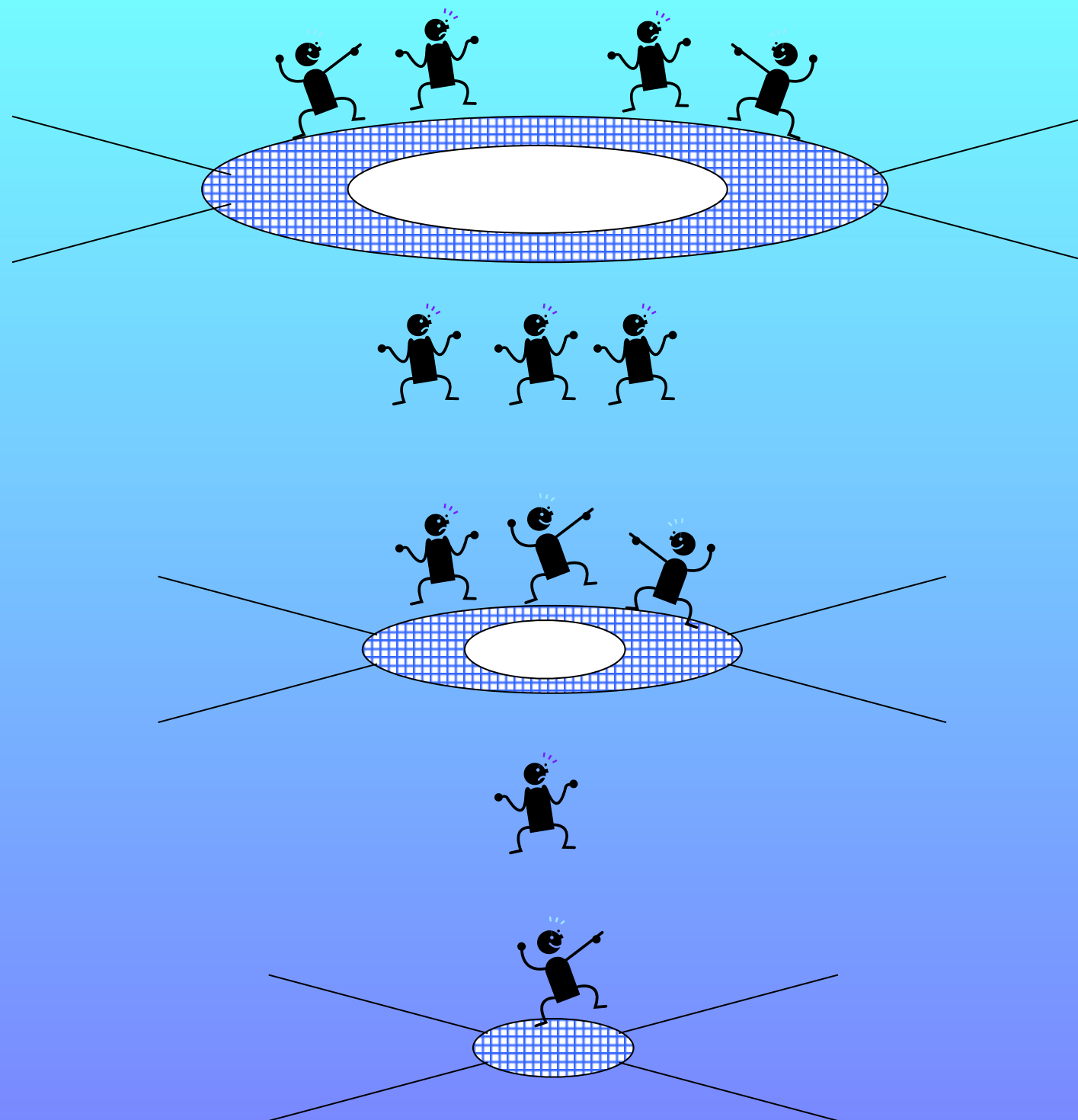
**Build
Buy
Broker**



(Finishing the) Story

2017

Using A Public Health Approach to Building Healthy Brains



Universal Primary Preventions

Anticipatory Guidance
Bright Futures
Reach Out and Read
Social Supports
Relational Health
High Quality Child Care

Everyone

Screening/Targeted Interventions

Developmental/Risk Screening
Home Visiting
Head Start
Parenting Education/Support
Early Intervention

At-risk

Evidence-Based Treatments

CPP, COS, PCIT, TB-CBT
Intensive Home Visiting
Intensive Parenting Education
Care Coordination

Symptomatic

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THE
END

Public-facing Social Media
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