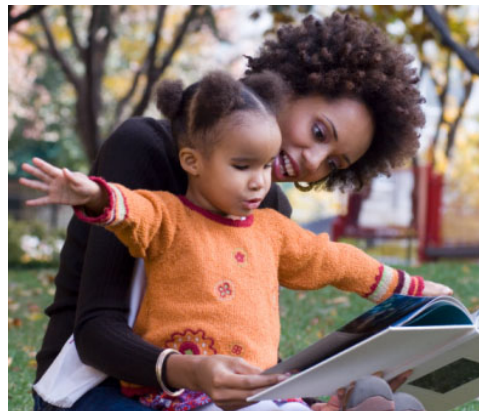


The Impact of Stress on Brain Development: How to Build Brain Resilience

Judy L. Cameron, PhD

Department of Psychiatry, University of Pittsburgh
The National Scientific Council on the Developing Child
Working For Kids: Building Skills™



The Foundations of Lifelong Health are Built in Early Childhood





WORKING FOR KIDS

building skills

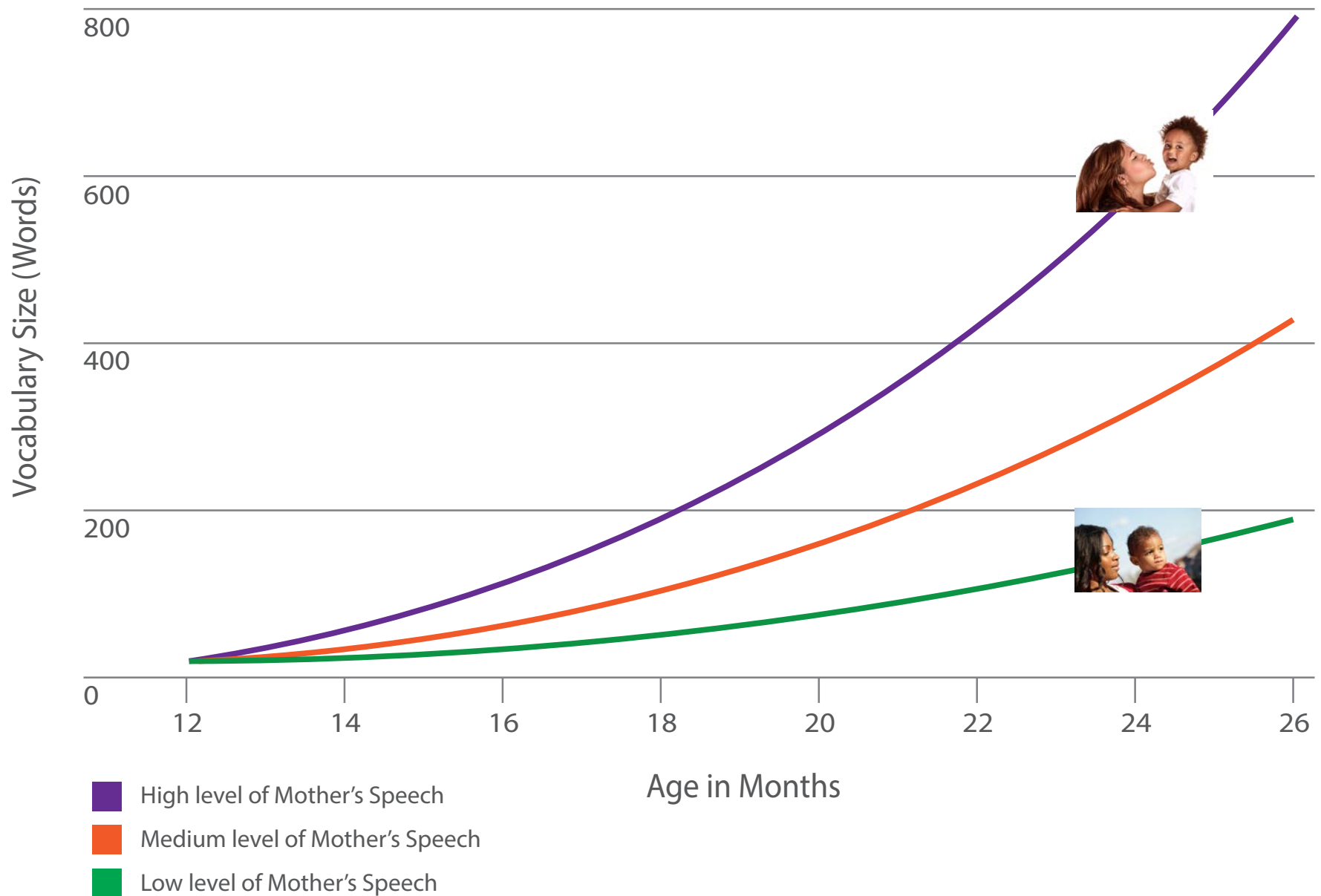
Working from within communities to teach adults how to help children build sturdy brain circuits for cognitive skills, social-emotional skills and stress management.



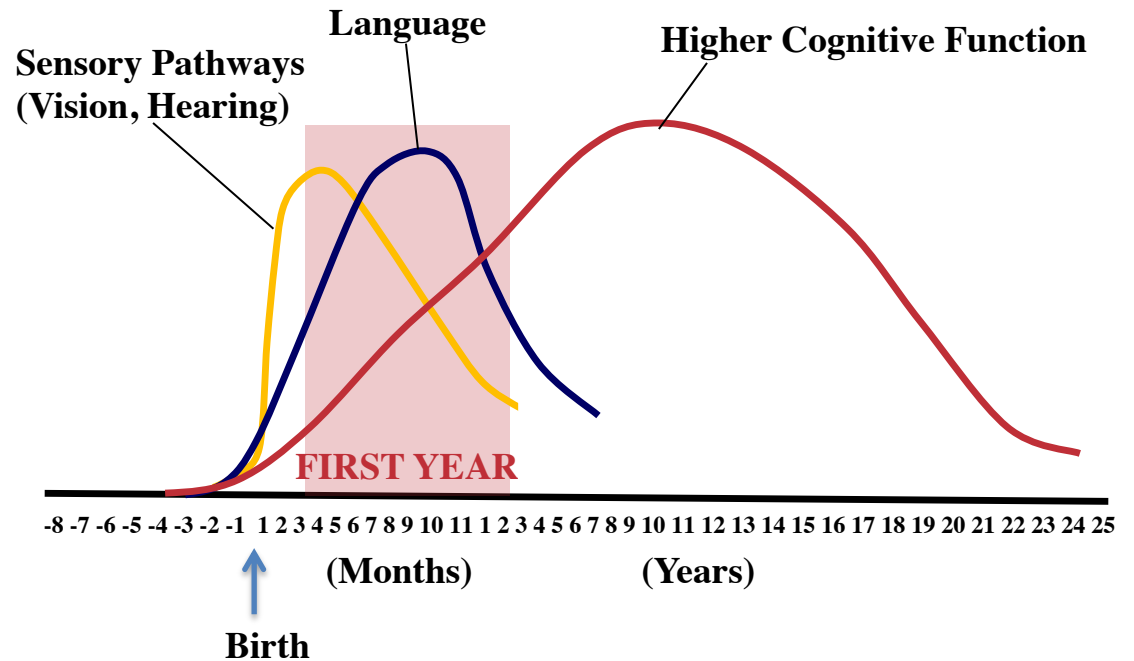
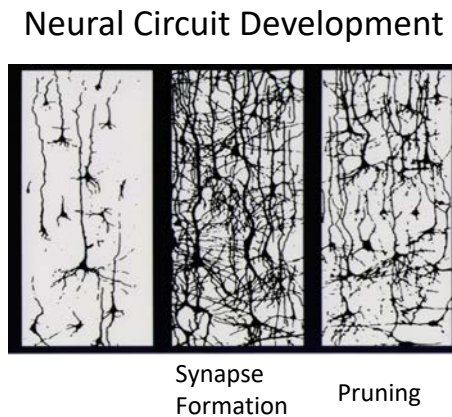
Experiences Build Brain Architecture

MOTHER'S SPEECH AND CHILD VOCABULARY

Source: Huttenlocher et al., Developmental Psychology 27: 236-248, 1991



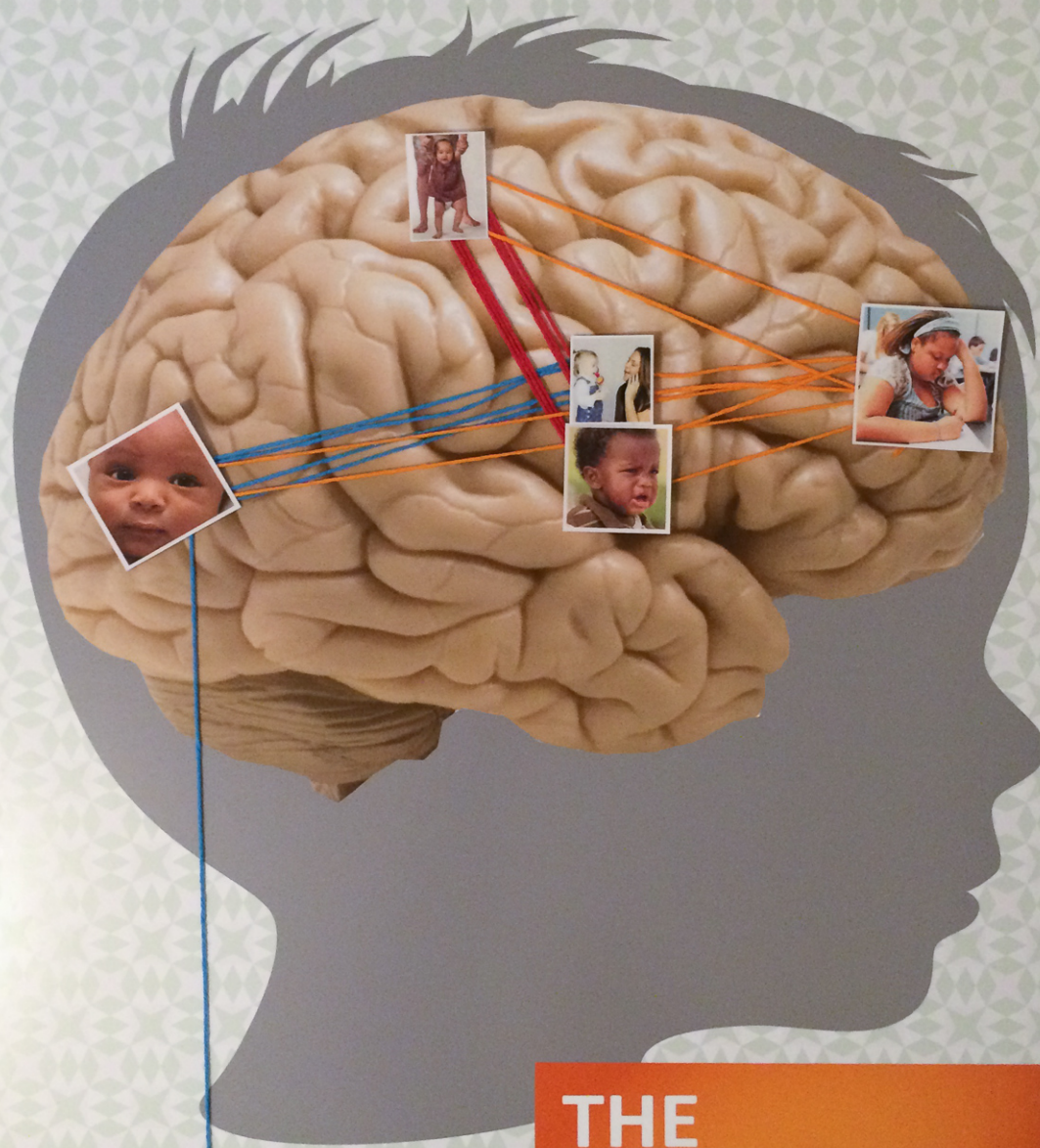
Neurodevelopmental Trajectories Differ Markedly in Different Neural Circuits



Experiences Build Brain Architecture



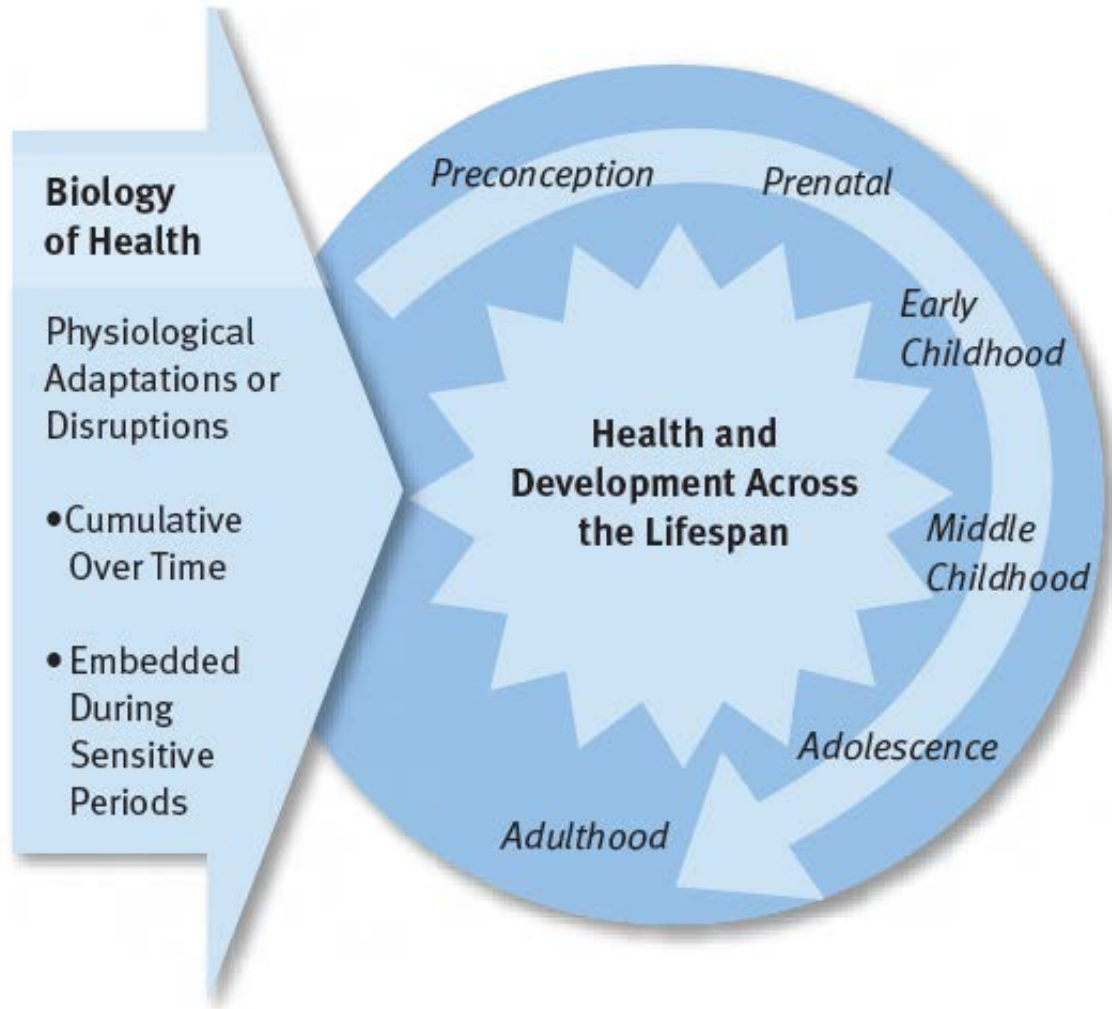
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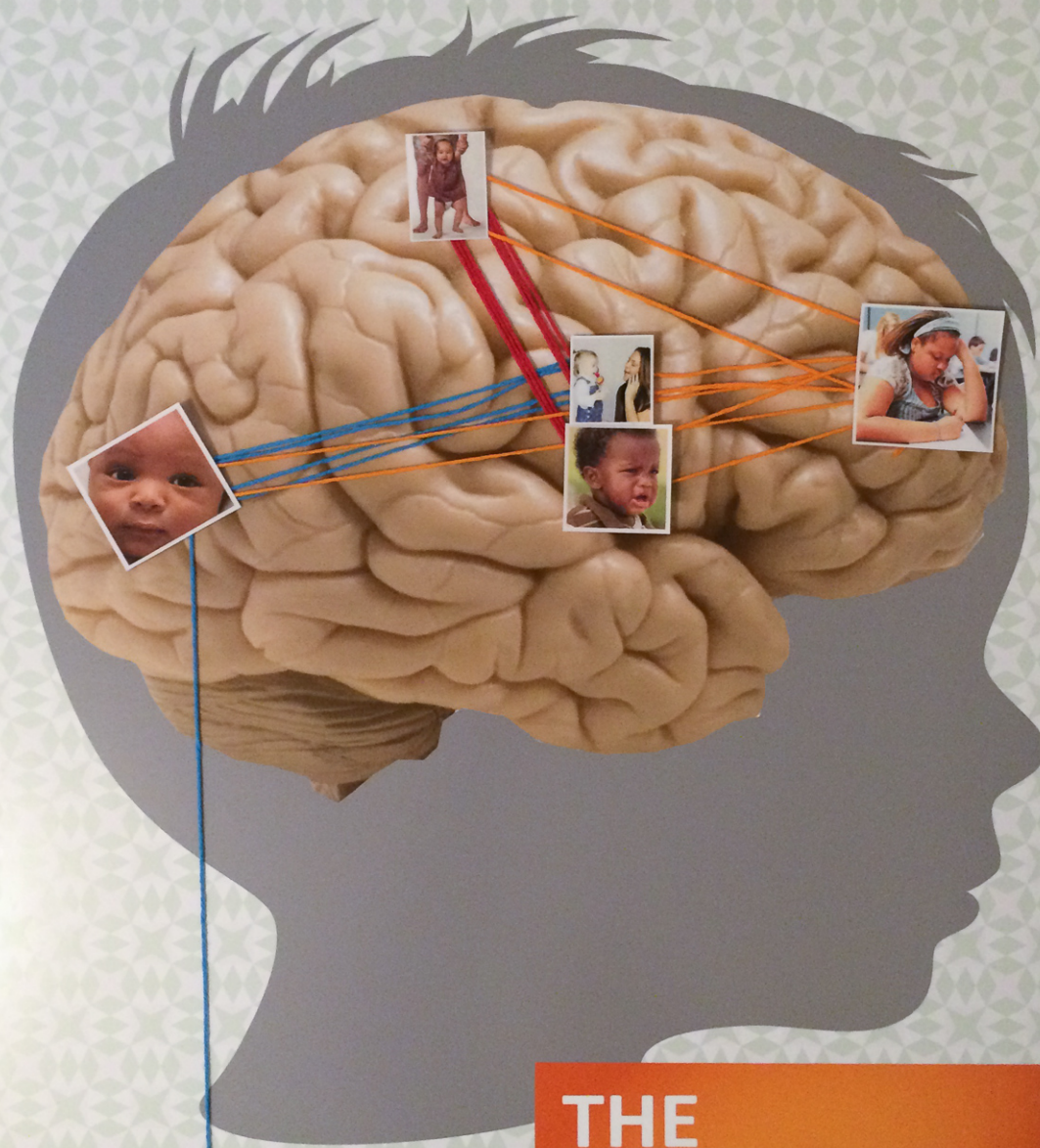
**THE
GROWING
BRAIN**

Stress Exposure Changes What
Children are Doing, so Stress Impacts
Neural Circuits that are Plastic When
the Stress is Experienced

Stress Impacts Circuits that are Developing when the Stress is Experienced



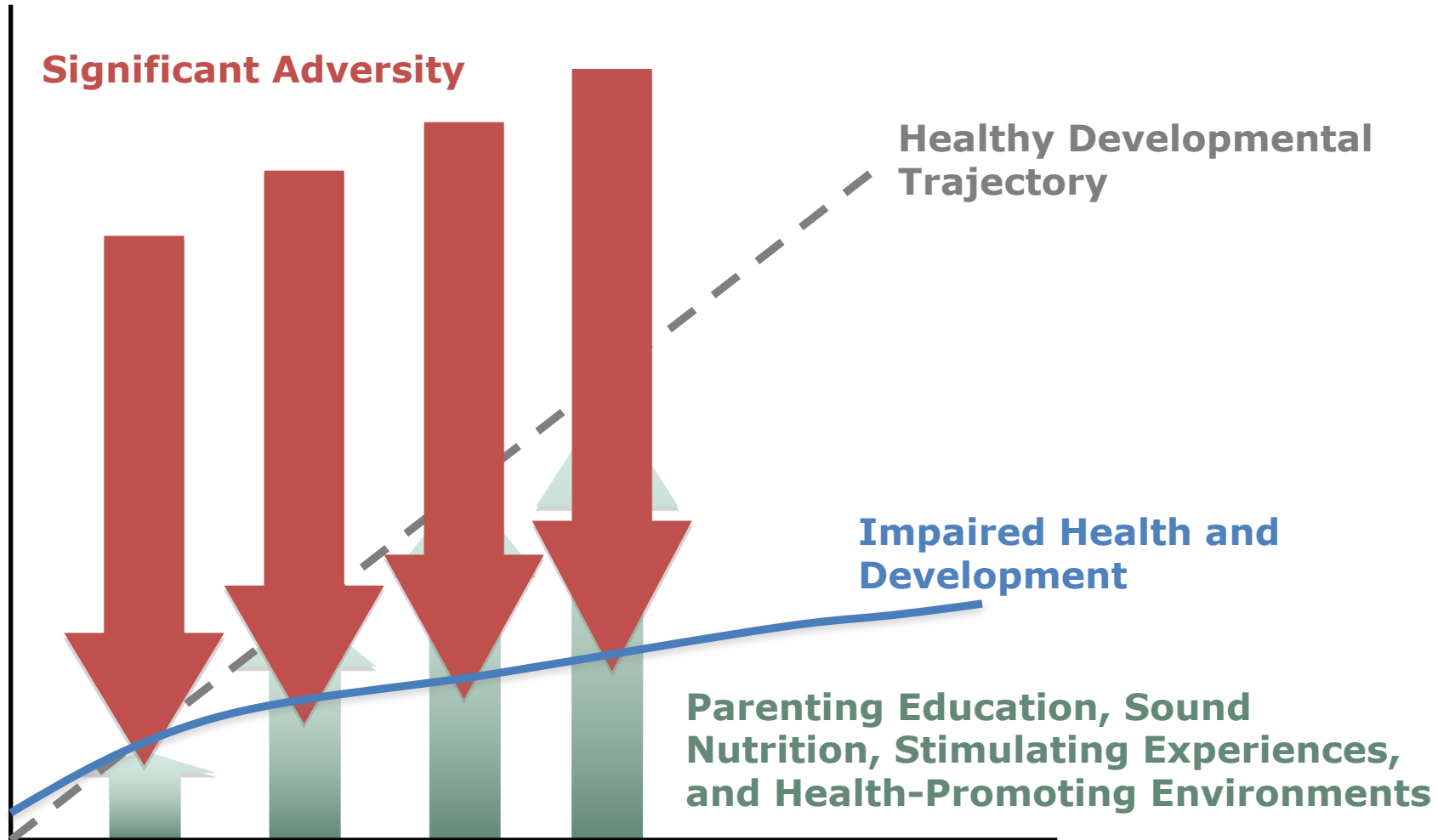
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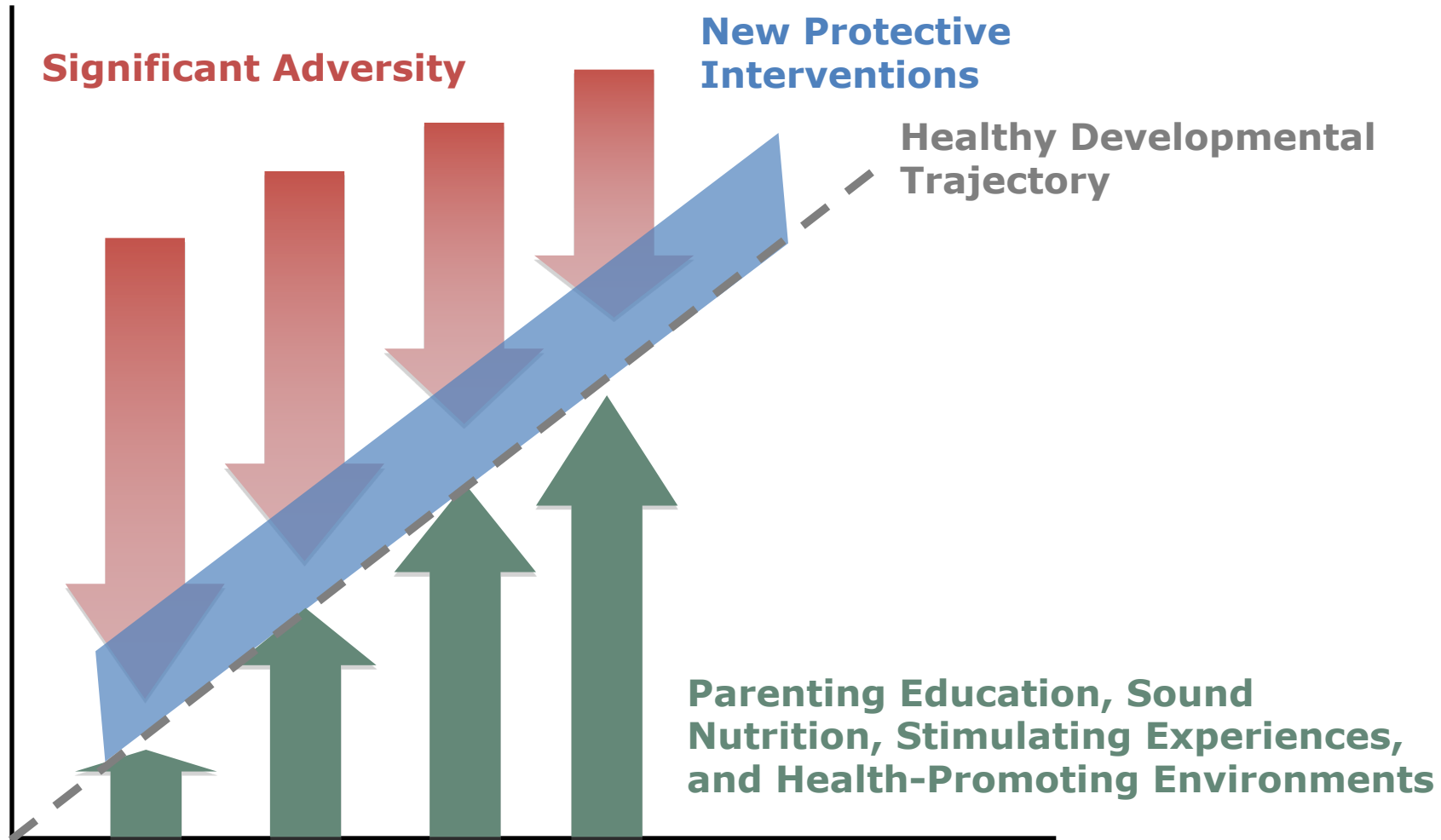
**THE
GROWING
BRAIN**

Protective Interventions
to Strengthen Brain Development
& Enhance Resilience

Current Conceptual Framework



Protective Interventions Can Improve Life-long Health



Capabilities that help with stress management

Focusing Attention

Problem Solving

Planning Ahead

Behavior Regulation

Controlling Impulses

Adjusting to New Circumstances

Executive Function and Self Regulation

Stable, caring relationships play a key role in building brains

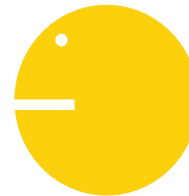
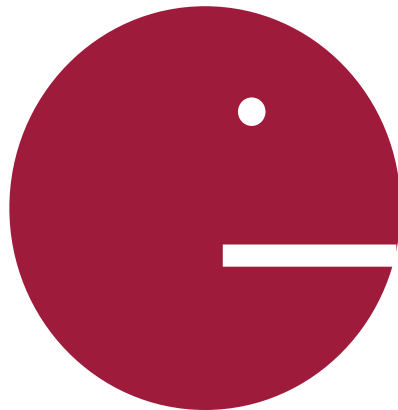




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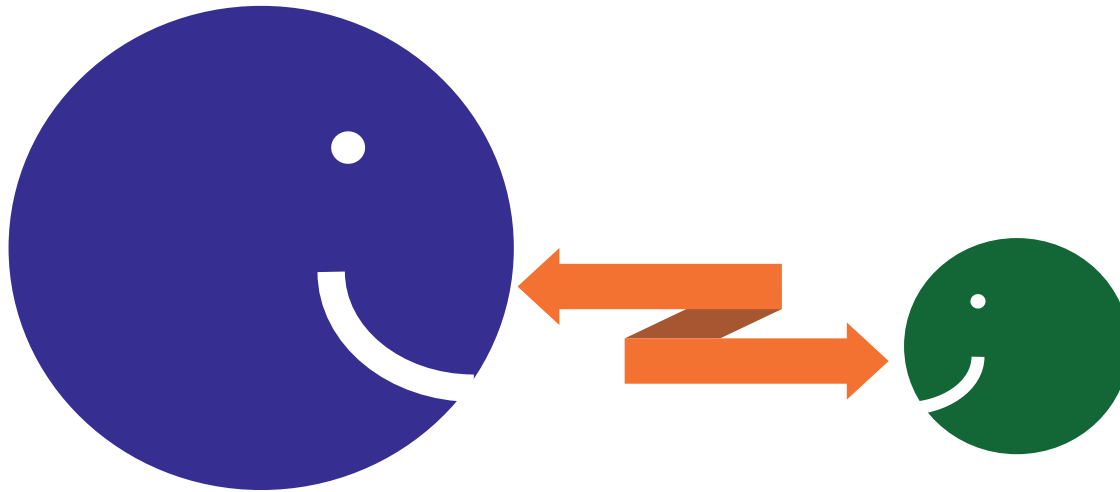


CONNECTION



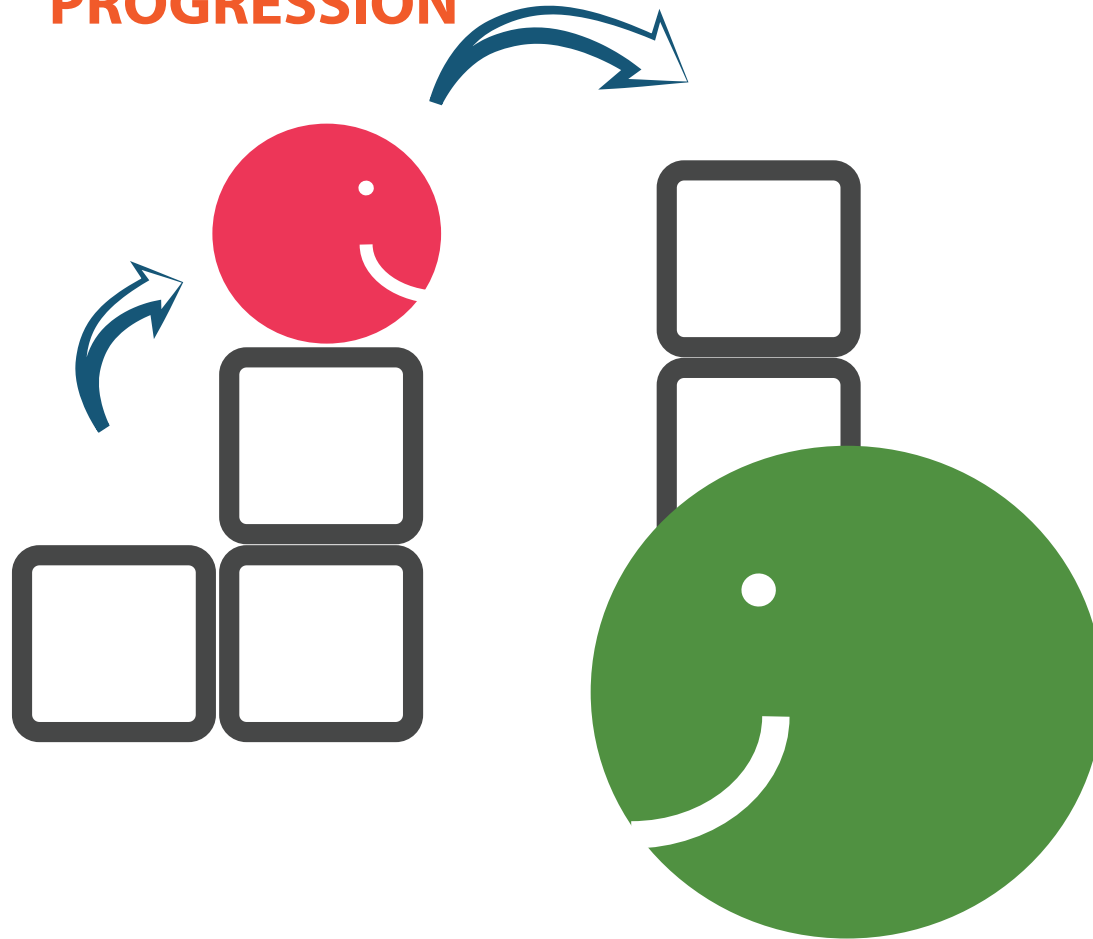
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SERVE & RETURN



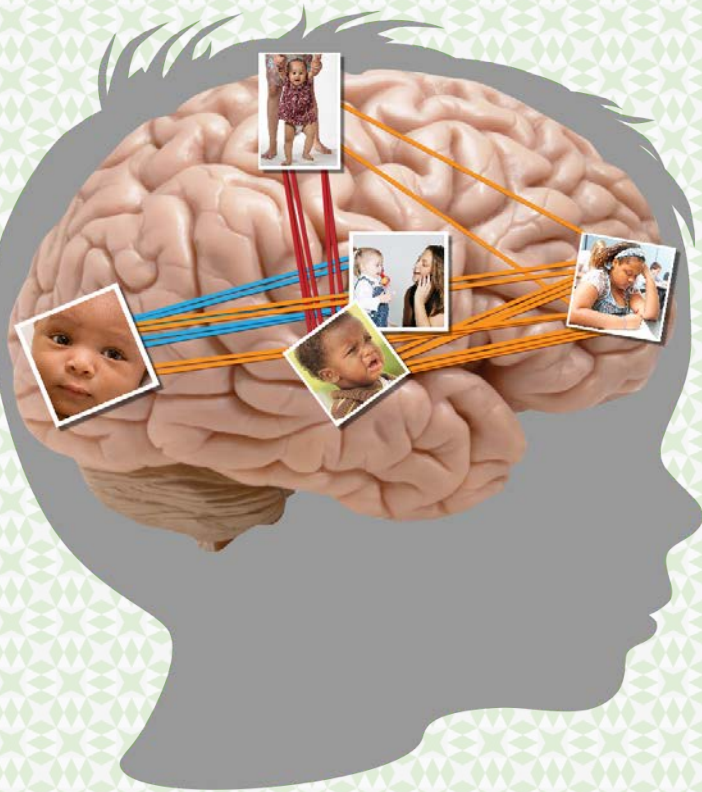
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PROGRESSION



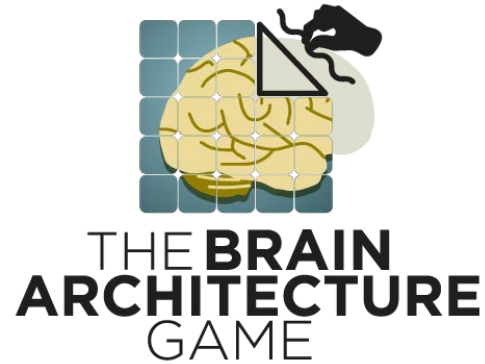
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The Growing Brain



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Posters



Games

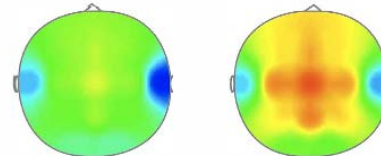
Activity What are the long-term effects of early life adversity? **2b**

Activity How do you provide children with better experiences? **1a**

Activity What environment shaped these brains? **1b**

Pass out pictures of EEG images. One brain looks very active as shown by the red and yellow colors (brighter). The other image seems less active as shown by the blue and green colors (dimmer).

What you have in front of you are pictures of the brain called EEGs. They show the amount of activity in each area of the brain! Areas in red and yellow that look brighter have more activity. Dimmer areas represented by blue and green have less activity. There is obviously a difference between the activity of these two brains. Can you think of an environment that shaped each brain?



Vanderwert et al., PLoS ONE 7:e11415:1-5, 2010

Activities

Working For Kids: Building Skills™

The First Pathways Game

www.firstpathwaysgame.com

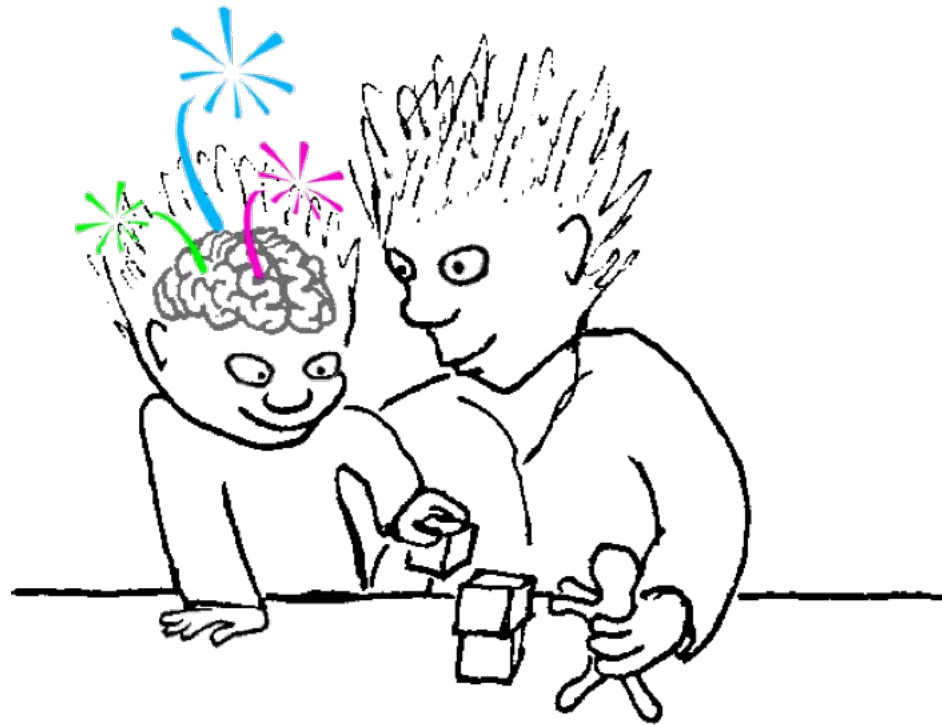


- App-style set of games
- Four domains:
 - Social/Emotional Skills
 - Problem-Solving Skills
 - Motor Skills
 - Communication Skills
- Eight age brackets:
 - 0-6 months
 - 6-12 months
 - 12-18 months
 - 18-24 months
 - 2-3 years
 - 3-4 years
 - 4-5 years
 - 5-6 years

GAME EXAMPLE:

- | | |
|--------------------|--|
| Title: | "Building a Home" |
| Age: | 3-4 years |
| Short description: | Give your child some pipe cleaners and straws and ask them to make an animal out of them. Then, have them build a home for the animal. |
| Domains: | Fine Motor Skills, Problem-Solving skills, Communication skills, Bonus: Early Science Learning |

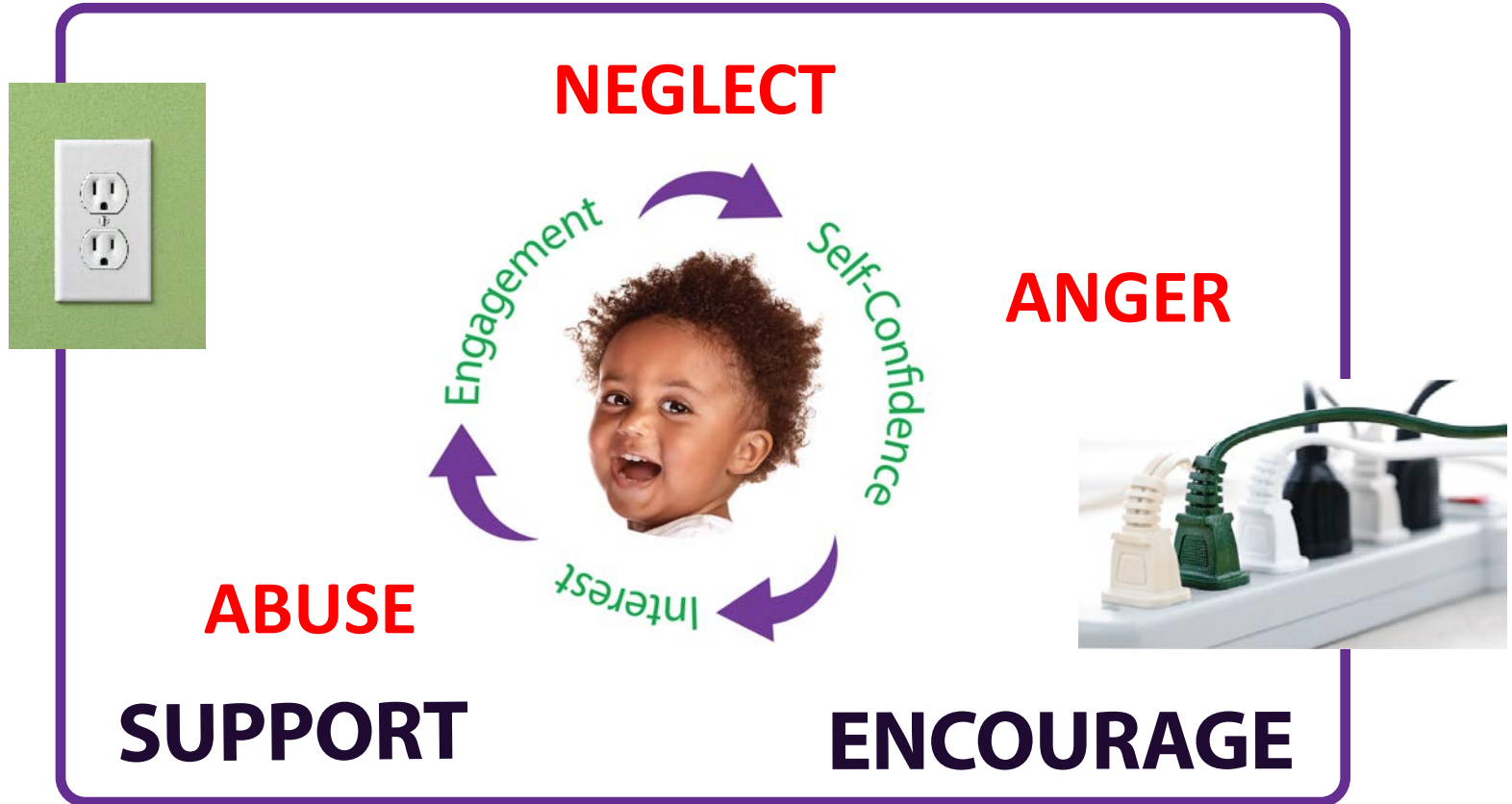
The First Pathways Game focuses on improving brain development directly through use of specific brain circuits and by improving adult-child interactions



Helping Communities Develop
“Charging Stations” to Support
Families in Strengthening
Children’s Brain Development

Working for Kids: Building Skills™

SUPPORTIVE ENVIRONMENTS FOR BRAIN DEVELOPMENT





WORKING FOR KIDS

building skills

Working from within communities to teach adults how to help children build sturdy brain circuits for cognitive skills, social-emotional skills and stress management.



www.workingforkids.com

<http://wfk.teachable.com>