2020 Texas Focus: Self-Determination
Saturday, February 29th, 2020
1:00 PM – 2:15 PM
Building a Healthy Brain! The Foundation of Lifetime Health & Well-Being

Presented by
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Developed for
Texas School for the Blind & Visually Impaired Outreach Programs
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PowerPoint Content

Slide 1:

Building A Healthy Brain!
The Foundation of Lifetime Health & Well-Being
Judy L. Cameron, Ph.D.
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The National Scientific Council on the Developing Child
Working For Kids: Building Skills™

Figure 1 A mother holds her baby as they gaze at each other.

Figure 2 A mother shares a book with her little girl.

Figure 3 Two young children read a book together.
Slide 2:
The Foundations of Lifelong Health Are Built in Early Childhood

Figure 4 A series of 4 pictures from left to right: a woman holding a child and showing her bell peppers in the grocery, a child in class raising her hand, a baby grasping the thumb of an adult, and a child running across a field.

Slide 3:
Four Core Concepts of Development

Brain Architecture Is Established Early in Life and Supports Lifelong Learning, Behavior, and Health

Early Life Adversity Leads to Long-term Changes in the Brain, Behavior Regulation, Mental Health

Neural Circuits Can Be Strengthened to Improve Reasoning Skills, Planning, Problem-Solving & Inhibitory Control

Social Support Systems Play an Important Role in Building Resilience to the Adverse Consequences of Early Life Stresses

Figure 5 The Four Core Concepts of Development set on top of an image of a stone foundation with the words "Healthy Child Development" carved on it.
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Slide 4:
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.

Figure 6 A collage of children interacting in various settings with adults.

Slide 5:
Working for Kids: Building Skills
MOTHER’S SPEECH AND CHILD VOCABULARY
Source: Huttenbacher et al., Developmental Psychology 27, 236-248, 1991

Figure 7 A graph showing the correlation between mother’s speech and child vocabulary from Huttenbacher et al., Developmental Psychology 27, 236-248, 1991. Three graph lines show that the higher the mother’s level of speech the greater the growth in the child’s development of vocabulary.
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Slide 6:

Experience Shapes Brain Architecture by Over-Production Followed by Pruning

![Figure 8](image.png)

*Figure 8* Three images of neural pathways in a child from left to right: at birth, 3 years and 14 years. In the first three years, there is a dramatic growth in neural pathways and after three years, many of the pathways are pruned away.

Slide 7:

Neural Circuits Are Wired in a Bottom-Up Sequence (700 synapses formed per second in the early years) Source: C. Nelson (2000)

![Figure 9](image.png)

*Figure 9* A graph showing the development of neural circuits related to sensory pathways (vision, hearing), language, and higher cognitive functions.
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**Slide 8:**

Experiences Build Brain Architecture

![Image of child with her ear to her mother's pregnant belly from the video, Experiences Build Brain Architecture, from the Center on the Developing Child at Harvard University. Video can be found at https://youtu.be/VNNsN9IJkws](image)

**Slide 9:**

![Image of the training materials from Working for Kids: Building Skills™ includes the poster, The Growing Brain, which shows a baby's silhouette and the brain inside. Various images such show experiences the child has and different expressions of emotions attached to neural networks.](image)
Slide 10:

Stable, caring relationships play a key role in building brains

Figure 12 A mother holds her child as they gaze at each other.

Figure 13 A mom shows her baby who is in a stroller a red bell pepper while they are shopping.

Figure 14 A mother reads a book to her daughter; the child spreads her arms wide like wings.

Figure 15 A little girl and boy read a book together.

Figure 16 An adult sits beside a young boy who is writing.
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**Slide 11:**

![Image](https://developingchild.harvard.edu/resources/serve-return-interaction-shapes-brain-circuitry/)

*Figure 17 Image from the video Serve & Return Interaction Shapes Brain Circuitry showing a mom playing with a baby and on the right of the screen a brain that lights up in various places. Video can be found at [https://developingchild.harvard.edu/resources/serve-return-interaction-shapes-brain-circuitry/](https://developingchild.harvard.edu/resources/serve-return-interaction-shapes-brain-circuitry/)*

Serve & Return Interaction Shapes Brain Circuitry

**Slide 12:**

Early Life Stress Impacts Life-long Health

![Diagram](https://www.jcasey.com/)

*Figure 18 A chart containing a large arrow labeled Biology of Health pointing to a large circle labeled Health and Development Across the Lifespan. Inside the Biology of Health are the following: Physiological Adaptations or Disruptions: Cumulative Over Time and Embedded During Sensitive Periods. Within the Health and Development Across the Lifespan the following words appear over and arrow moving clockwise: Preconception, Prenatal, Early Childhood, Middle Childhood, Adolescence, Adulthood.*
Slide 13:

Adverse Early Life Experiences Change How You See the World

Figure 19 Chart from Pollak and Kistler, PNAS, June 25, 2002 showing how children who were abused overidentified faces as “angry”.

Slide 14:

Current Conceptual Framework

Figure 20 Chart showing that significant adversity negatively impairs health and development.
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Slide 15:
Protective Interventions Can Improve Life-long Health

![Figure 21 Chart showing that significant adversity can be offset by new protective interventions to improve the healthy developmental trajectory. Parenting education, sound nutrition, stimulating experiences, and health-promoting environments are interventions that have positive impact.]

Slide 16:

![Figure 22 a variety of images from Working For Kids: Building Skills™ materials including a poster, the Brain Architecture Game, Stories and charts.]

Slide 17:

![Figure 23 Images and examples from The First Pathways Game which can be found at www.firstpathwaysgame.com.]
Slide 18:

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

Figure 24 Cartoon drawing of a child and an adult playing with toys; the child's brain (which is visible) lights up with fireworks.

Slide 19:

Figure 25 A poster of a child circled by the words, "engagement, self-confidence, and interest" and "care, support, encourage". Images of an electrical outlet and surge protector appear over the poster. The poster reads Working for Kids: Building Skills™ Support Environments for Brain Development.

Slide 20:

Figure 26 A person stand at the fulcrum in the exact middle of a scale. On the left are blocks labeled "negative outcomes" and on the right are blocks labeled "positive outcomes". The poster reads, "When positive experiences outweigh negative experiences, a child's "scale" tips toward positive outcomes."
Slide 21:

Figure 27 the same image as above except that the fulcrum has moved from the center leaving the longer end of scale with negative outcomes. We see that the negative outcomes outweigh the positive outcomes. The poster reads, “The initial placement of the fulcrum affects how easily the scale tips toward positive or negative outcomes.”

Slide 22:

Figure 28 A similar image of the fulcrum, except this time the positive outcomes outweigh the negative outcomes. The poster reads, “Over time, the cumulative impact of positive life experiences and coping skills can shift the fulcrum’s position, making it easier to achieve positive outcomes.”

Slide 23:

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
Figure 29 a variety of images from Working For Kids: Building Skills™ materials including a poster, the Brain Architecture Game, Stories and charts.
Outreach Programs

Texas School for the Blind & Visually Impaired

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