
 Poll

- How many connections does the average neuron, or brain cell, make with other neurons?  
(A)25  
(B)150  
(C)500  
(D)3500  
(E)7000



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 Supporting Children's Early Brain Development

March 13<sup>th</sup>, 2018  
Presenters:  
Amelia Bachleda, Ph.D.  
NCECDTL

 NATIONAL CENTER ON  
Early Childhood Development, Teaching and Learning

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 Our Incredible Brains





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## Session Objectives

At the end of this presentation, you should be able to:

- Identify the growing brain as a work in progress - an enormous amount of brain development occurs in the first five years of life
- Describe how a child's early experiences shape the physical development of the brain
- Explain at least three ways to support children's learning and brain development

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## Session Agenda

Here's what we're doing today:

1. Brain development: Children's earliest experiences build their brains
2. Discuss research-based strategies for supporting children's brain development
3. Learn and share strategies that you use with your colleagues

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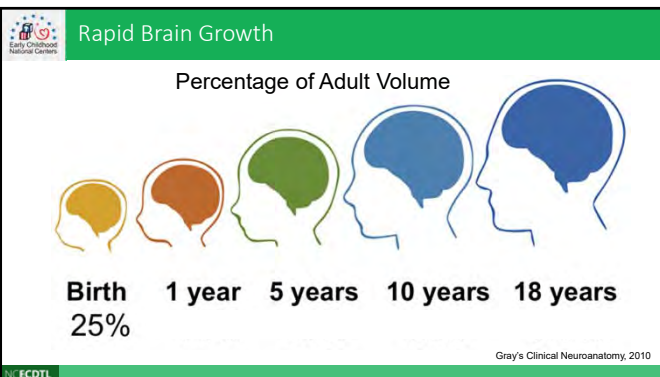
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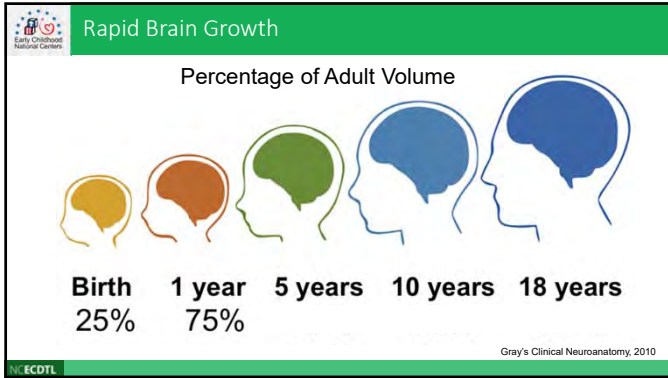
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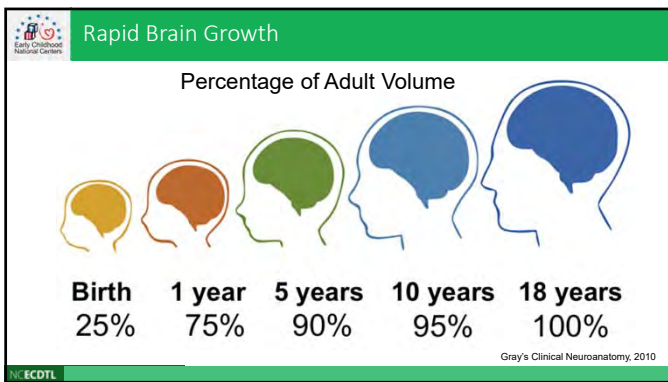
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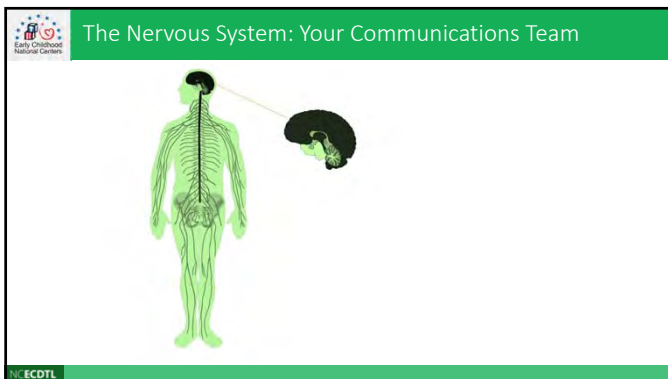
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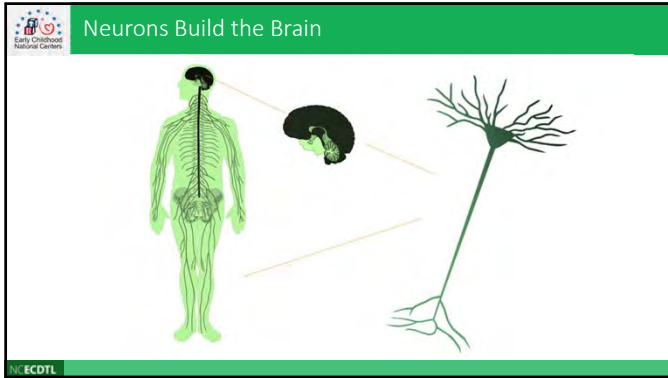
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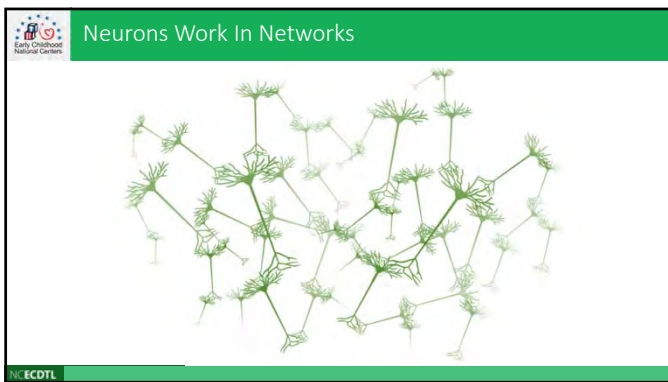
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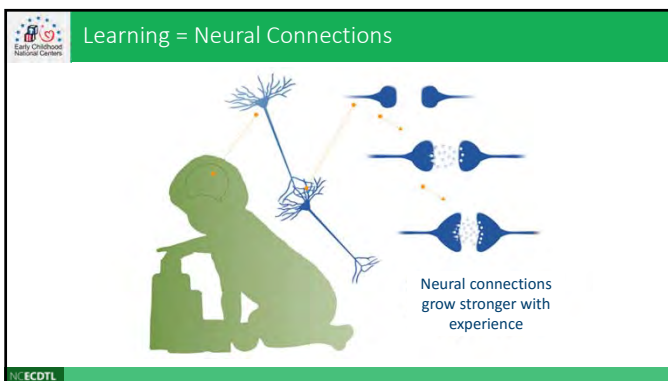
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 Connections Form Rapidly In the Developing Brain



Adapted From LeRoy Conel, Harvard University Press, 1959

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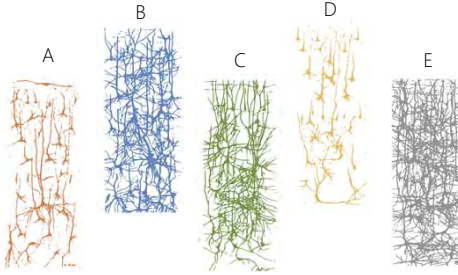
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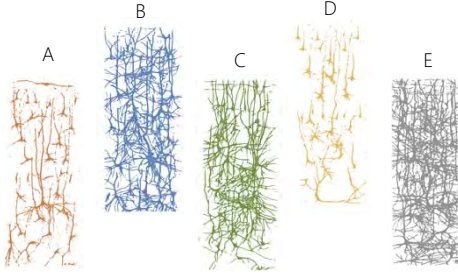
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 Connections Form Rapidly In the Developing Brain

1 month  
▼  
3 months  
▼  
6 months  
▼  
4 years  
▼  
6 years



Adapted From LeRoy Conel, Harvard University Press, 1959

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Early Childhood National Centers

### Connections In the Developing Brain

1 Month



Adapted From LeRoy Conel, Harvard University Press, 1959

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Early Childhood National Centers

### Connections In the Developing Brain

1 Month      3 Months



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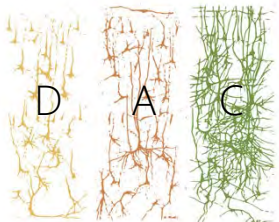
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Early Childhood National Centers

### Connections In the Developing Brain

1 Month      3 Months      6 Months



Adapted From LeRoy Conel, Harvard University Press, 1959

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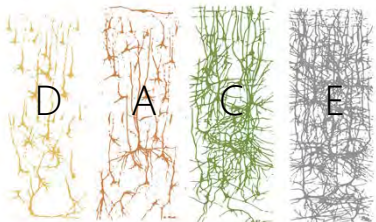
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 Connections In the Developing Brain

1 Month    3 Months    6 Months    4 Years

D    A    C    E



Adapted From LeRoy Conel, Harvard University Press, 1959

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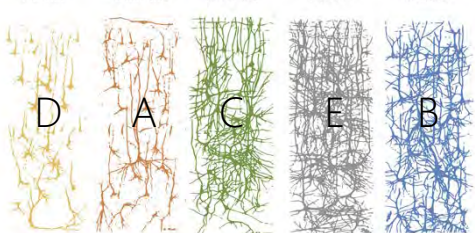
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 Connections In the Developing Brain

1 Month    3 Months    6 Months    4 Years    6 Years

D    A    C    E    B



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 Connections Are Refined by Experience

  
Blooming



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Early Childhood National Centers

### Connections Are Refined by Experience

Blooming Pruning

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Early Childhood National Centers

### Connections Are Refined by Experience

Blooming Pruning Thriving

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Early Childhood National Centers

### Primed and Ready to Learn

Plasticity

Sensory Language & motor Higher Cognitive

Development

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 **Biology + Experience Build the Brain**

Over the course of childhood, we build our brains.

Our experiences, and the frequency of those experiences influence shape how our brains are wired





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 **Supporting Early Brain Development Everyday**

How do you support early brain development in the children that you work with?



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 **In Order to Care For Others, You Must Care For Yourself**



**"It's hard work and it's serious.... Build in time for yourself and take care of yourself; so it is a combination of taking care of children and taking care of yourself."**

**"You have to...understand the signs of stress, understand when you are overwhelmed, and how you communicate that and how you take care of yourself."**

Resource: <https://ectkc.ohs.acf.hhs.gov/video/early-essentials-webisode-6-self-care-professionalism>



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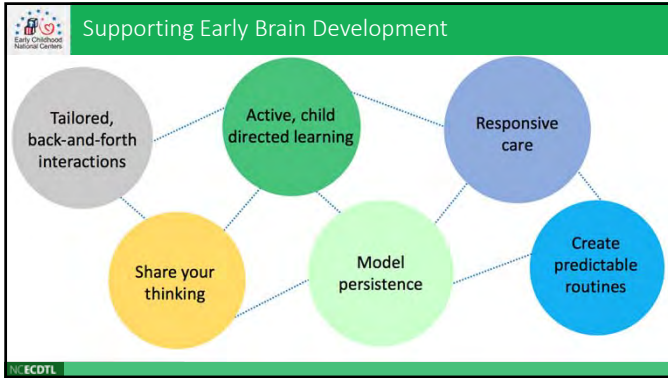
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Tailored, back-and-forth interactions	Share your Thinking	Active, child directed learning	Provide regulatory support	Model persistence	Create predictable routines

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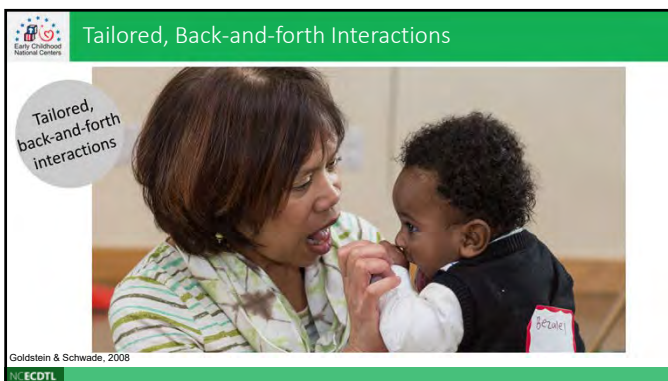
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**Tailored, Back-and-forth Interactions**

Teacher Thomas works with three-year-old Maya, who does not yet use English Words.

Maya brings Thomas a crayon, a new tool she is beginning to explore.

Thomas names the crayon and shares in her delight.

Maya says "cron" for crayon, and Thomas acknowledges her attempt by saying "yes" and repeating the whole word, "crayon." They then explore this new tool together.

Yes, this is a crayon, Maya. Let's color together!

Cron

What would you like to draw?

Thomas asks an open-ended question of Maya, who is a very new English speaker. He knows she might not respond with English words and accepts her scribbles or gestures as her response.

Resource: <https://ecikc.obs.uci.edu/sites/default/files/pdf/dll-english-language-development.pdf>

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**Share Your Thinking**

Share your thinking

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**Share Your Thinking**

Share your thinking

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Follow the Child's Interest

Active, child directed learning



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Follow the C.A.R.

Active, child directed learning

THE NATIONAL CENTER ON QUALITY TEACHING AND LEARNING

TIPS FOR TEACHERS ENGAGING CHILDREN IN CONVERSATIONS

FOLLOW THE CAR:



FOLLOW THE CHILD'S LEAD AND THEN:

- Comment and wait.
- Ask a question and wait.
- Respond by adding a little more and wait.

Resource: <https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/no-search/iss/language-modeling-and-conversations/engaging-conversation-teacher-tips.pdf>

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Model Persistence

Model Persistence



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Model Persistence

Model Persistence

Leonard, Lee, & Schulz, 2017

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Model Persistence

Model Persistence

Leonard, Lee, & Schulz, 2017

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Responsive Caregiving Provides Regulatory Support

Responsive care

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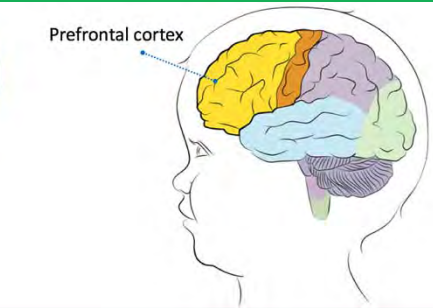
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**Responsive Caregiving Provides Regulatory Support**

Responsive care

Prefrontal cortex



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**Create Predictable Routines**

Predictable routines



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**Wrap Up: Building Healthy Brains Together**

- Children's brains are built. An enormous amount of brain development occurs in the first five years.
- Early childhood experiences shape the physical development of the brain.
- Children learn best in the context of relationships and in environments where they feel safe, secure and free to explore their world.



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**Building Healthy Brains Together**

How are you going to take what we've learned today and apply it to your work with children and their families? What additional tools or information might you need to support your work?

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**Resources**

Early Childhood Learning & Knowledge Center

- Supporting English Language Development When Children Have Little Experience With English: <https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/dll-english-language-development.pdf>
- Tips For Engaging Children In Conversations: <https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/no-search/iss/language-modeling-and-conversations/engaging-conversation-teacher-tips.pdf>
- Quick Start Guide for Responsive Interactions: <https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/no-search/webisode-8-quick-start.pdf>
- Early Essentials Webisode 8: Responsive Interactions: <https://eclkc.ohs.acf.hhs.gov/video/early-essentials-webisode-8-responsive-interactions>
- Early Essentials Webisode 6: Self Care and Professionalism: <https://eclkc.ohs.acf.hhs.gov/video/early-essentials-webisode-6-self-care-professionalism>
- Predictable Routines – Resources: <https://eclkc.ohs.acf.hhs.gov/video/lets-talk-about-routines>
- Stress and Resilience in Young Children – Resources: <https://eclkc.ohs.acf.hhs.gov/mental-health/video/understanding-stress-resilience-young-children>
- Raising Young Children in a New Country: Supporting Early Learning and Healthy Development: <https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/raising-young-children-new-country.pdf>

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Brain Development

Thank you!

Please fill out a survey:



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