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# An Early Educator's Look Into Brain Development for Infants and Toddlers

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## Learning Outcomes

After this course, participants will be able to:

- Identify and describe critical windows of brain development for infants and toddlers.
- Describe the physical environment in its ability to support infant and toddler brain development.
- Describe adult interaction necessary to maximize infant and toddler brain development.

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## Four Jobs of Being an Infant/Toddler

- Make sense of the world
- Discover motor skills and bodily power
- Connect with others
- Learn to communicate fully

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## Minds in the Making

- What underlies these 4 jobs?
  - Brain development!
- Ages 0-3: fastest rate of brain development
- Most brain cells are formed before birth, but most connections among cells are made during infancy and early childhood

Q1 5

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## “Fourth Trimester”

- All babies are born too early
- Months 0-3 – immense time of social skill development
- Care and responsiveness continue to shape neural structures and function

Q2 6

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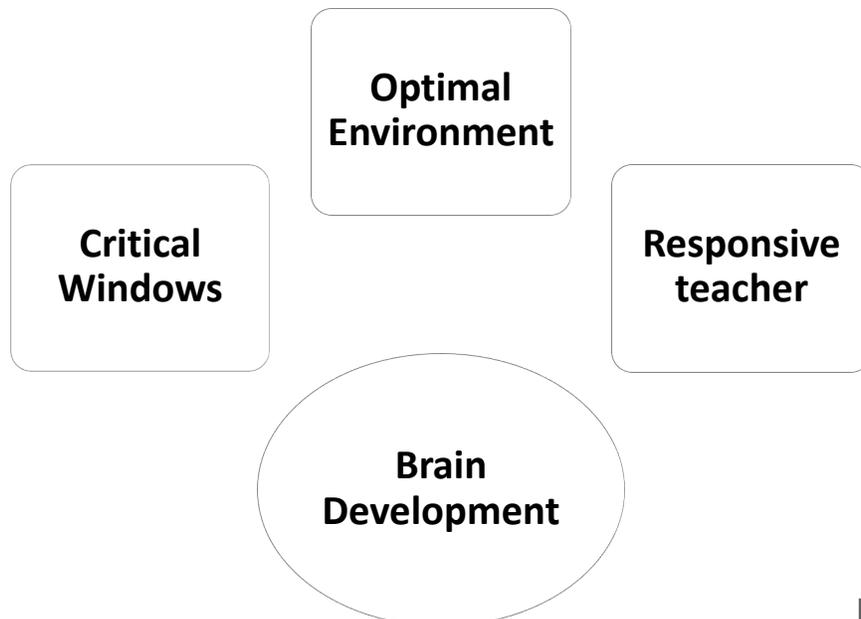
## Physical Brain Development

- Human brain grows rapidly, more than doubling in the first 12 months of life
- Brain is 60% of adult size by age 1
- Brain reaches full size by age 5 but continues to develop into one's twenties
- "Use it or lose it" principle – synaptic pruning

Q3 Q4

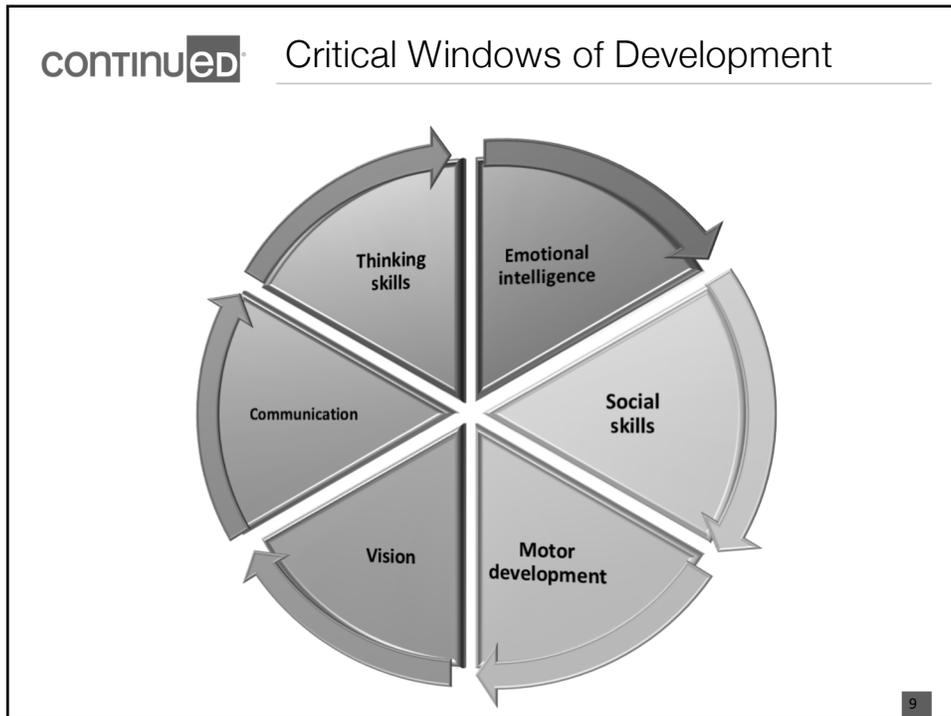
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## Overview: Critical Windows

- Emotional Intelligence
  - 0-14 months: Developing Trust
    - Responsiveness
    - Talking with baby
    - Reading YOUR emotions
    - Importance of touch
  - 14 months – 4 years: Impulse Control
    - Set limits
    - Reinforce accomplishments

Q5 10

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## Overview: Critical Windows

- Social Skills
  - Babies mirror responses
  - Social interactions as give and take
  - Constant conversation and social exchange

Q6

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CONTINUED

## Babies and Toddlers Crave Conversation

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## Overview: Critical Windows

- Motor Development
  - Critical to learning and brain wiring in the first 2 years
  - Need to have unconfined space
  - Movement must be encouraged, allowed, and praised
- Vision
  - Visual wiring ends at age 2
  - Need to support wiring for a 3D world
  - Appealing colors
  - Support variety

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## Overview: Critical Windows

- Communication
  - Talk! Sing! Read!
  - By 18 months, toddlers with chatty caretakers have almost 200 more words than their peers; By age 2 years, 300 more words
  - Give labels
  - Do not use baby-talk
  - Expand language
- Note: Music as focus not as background noise

Q7

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## Overview: Critical Windows

- Thinking Skills
  - Cause and effect
  - Problem solving
  - Authentic experimentation
  - Pretend play
  - Memory



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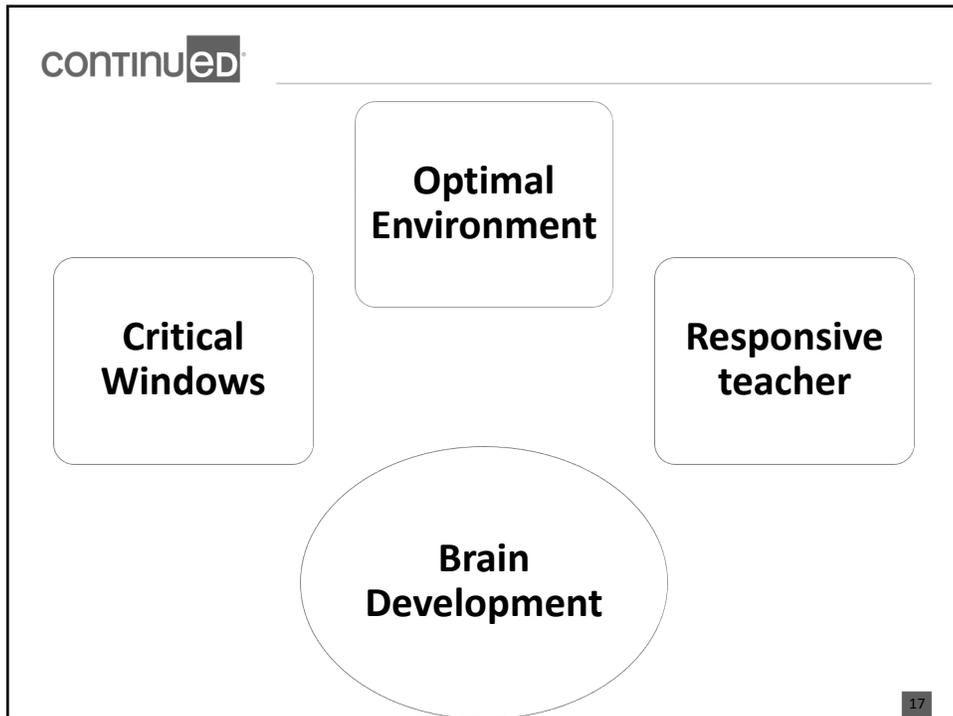
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“Be careful what you teach the child, you may interfere with what he is learning.”

-Magda Gerber

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The slide features the CONTINUED logo in the top left corner. Below the logo is a horizontal line. The text on the slide reads: 'Let's make the connection', 'What is an ideal learning environment for an infant and/or a toddler?', and 'Let's look through their eyes...'. A small grey box with the number '18' is located in the bottom right corner of the slide's frame.

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Where are we?  
Which critical windows are or  
are not being supported?

19

CONTINUED

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Where are we?  
Which critical windows are or  
are not being supported?

20

CONTINUED

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Where are we?  
Which critical windows are or  
are not being supported?

21

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All things in moderation

Ask yourself:  
*What is my goal in utilizing this  
equipment?*

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CONTINUED

Where are we?  
Which critical windows are or  
are not being supported?

*Everyone, please stand up.*



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## Toddler Herding

- What is this?
- Counter-intuitive
- Better alternatives



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Where are we?  
Which critical windows are or  
are not being supported?

25

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“The environment must be rich in motives which  
lend interest to activity and invite the child to  
conduct his own experiences.”

-Maria Montessori

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## Great Places to be an Infant and Toddler

- Learning opportunities everywhere
- Space to move and explore
- Choices – 2 or 3 for infants; 2-4 for toddlers
- Elicit curiosity
- Areas for varied interactions
- Encourage problem solving; support cause and effect relationships

Q8

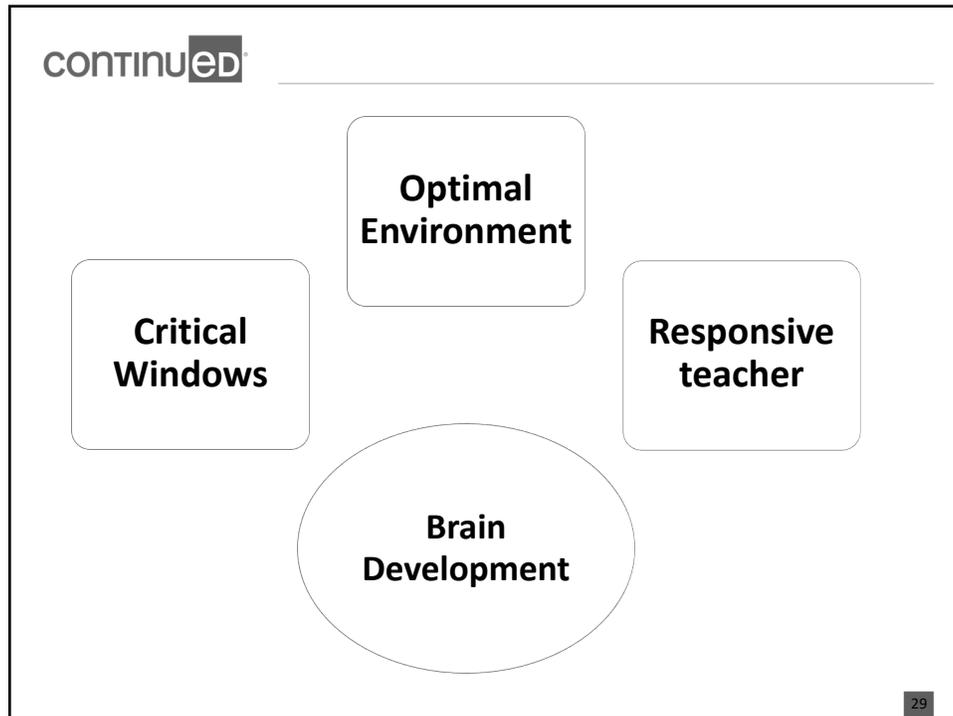
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“Adults admire their environment; they can remember it and think about it—but a child absorbs it. The things he sees are not just remembered; they form part of his soul. He incarnates in himself all in the world about him that his eyes see and his ears hear.”

– Maria Montessori

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## Responsive Infant Teachers

- Observe first.
- Acknowledge needs or discomfort quickly.
- Let baby know what you want to do first. Pause and wait.
- Make eye contact.
- Lift baby under both arms and embrace OR lift baby in a cradled position.
- Are mindful of own emotions, tone, and actions.
- Let baby make choices.

Q9

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CONTINUED

“Many people who work with babies feel they must do something for baby in order for the baby to be satisfied. What happens when the adult ‘does for’ the baby is that the adult often forgets to include the baby in the caregiving process.”

-Beverly Kovach

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## Responsive Toddler Teachers

- Support movement needs and choice.
- Set simple, safe limits and explain these simply.
- Embrace developing independence. (“No!”)
- Provide opportunities to be helpful.
- Frame positive language.
- Help express emotion.
- Maintain routine.
- Avoid herding.
- Sportscast during conflict.

Q10

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“Children love and want to be loved and they very much prefer the joy of accomplishment to the triumph of hateful failure. Do not mistake a child for his symptom.”

-Erik Erikson

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## Review of Key Points

- Critical windows of brain development
- Brain development supported by ideal learning environments and responsive teachers
- Importance of conversations with infants and toddlers
- Importance of unconfined space

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