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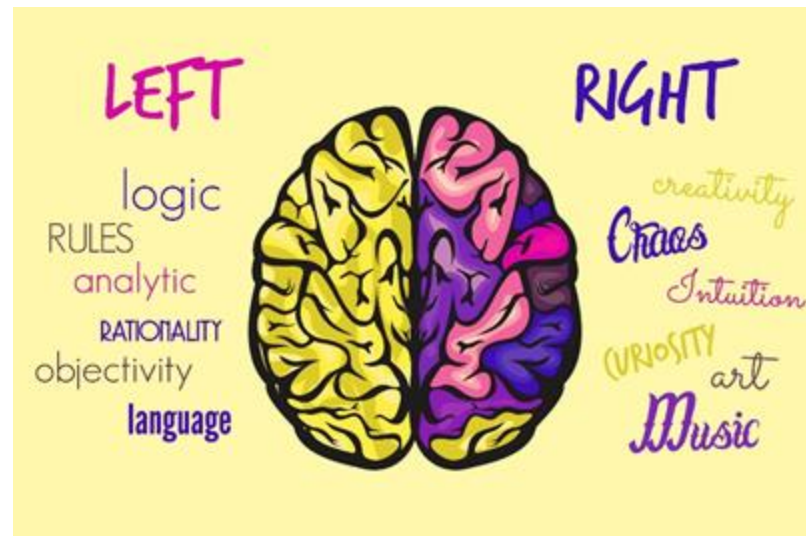
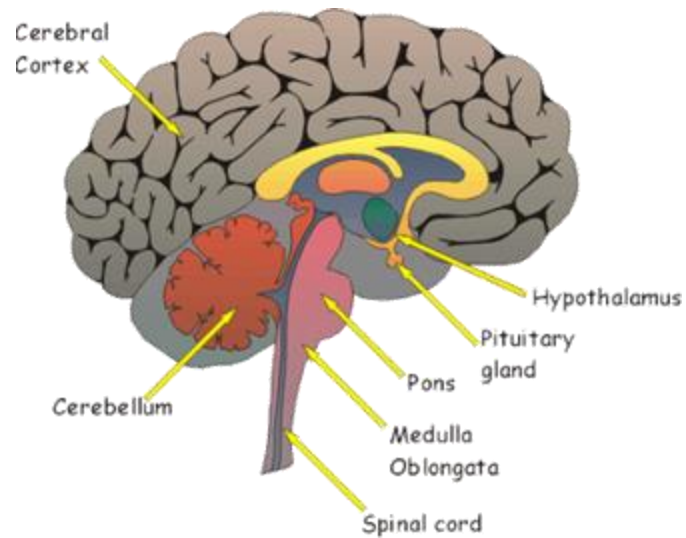
ZERO TO THREE
Early connections last a lifetime

The Growing Brain

From Birth to 5 Years Old

A CURRICULUM FOR EARLY CHILDHOOD PROVIDERS
Aidan Bohlander, Claire Lerner, and Ross Thompson, Editors

**The Growing Brain from Birth to Five Years
Old: *Factors Affecting Brain Growth and
Development***



Agenda



Identify factors that affect brain growth and development



Learn about key components you can use to support healthy brain development

Brain Development







Top and Bottom Functions of the Brain

Top Functions –

- Areas associated with higher cognition – pre-frontal cortex
- Take in and process information
- Thinking and Problem-Solving

(Seigel & Bryson, 2011)

Bottom Functions –

- Brain stem and structures in temporal lobe incl. limbic system
- Receives signals from the senses and uses memories to interpret their meaning.
- Feeling and perceiving functions of the brain

(Seigel & Bryson, 2011)




BRAIN BUILDERS



Let's put it
into
Practice!

Connectivity: Bedtime Routines



The image shows a man and a young child with curly hair brushing their teeth. They are in a bathroom, looking into a mirror. The man is smiling and has his arm raised. The child is also smiling and brushing their teeth. The image is framed within a white oval shape.

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In each round, please describe activities associated with bedtime:

1. Routines that happen
2. Feelings a child may have
3. Things going on in the house/environment



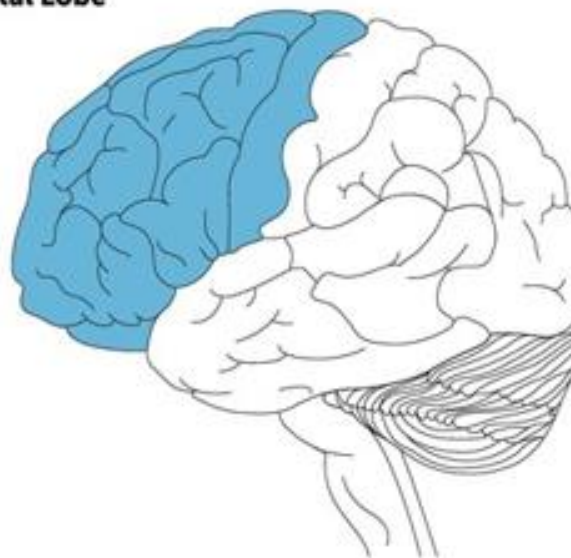
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Bedtime Routines Debrief

What part of the brain is stimulated during bedtime routines?

- What physical and sensory experiences did the child have?
- What did he hear and see?
- What feelings does he connect with bedtime?
- What cues in the environment does he associate with bedtime?

Frontal Lobe



Factors Affecting Healthy Brain Growth and Development



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- Gene–environment interactions
- Nutrition
- Sleep
- Exposure to toxic substances
- Diseases and disorders of the brain in early childhood
- The role of relationships



Gene - Environment Interaction

Nutrition

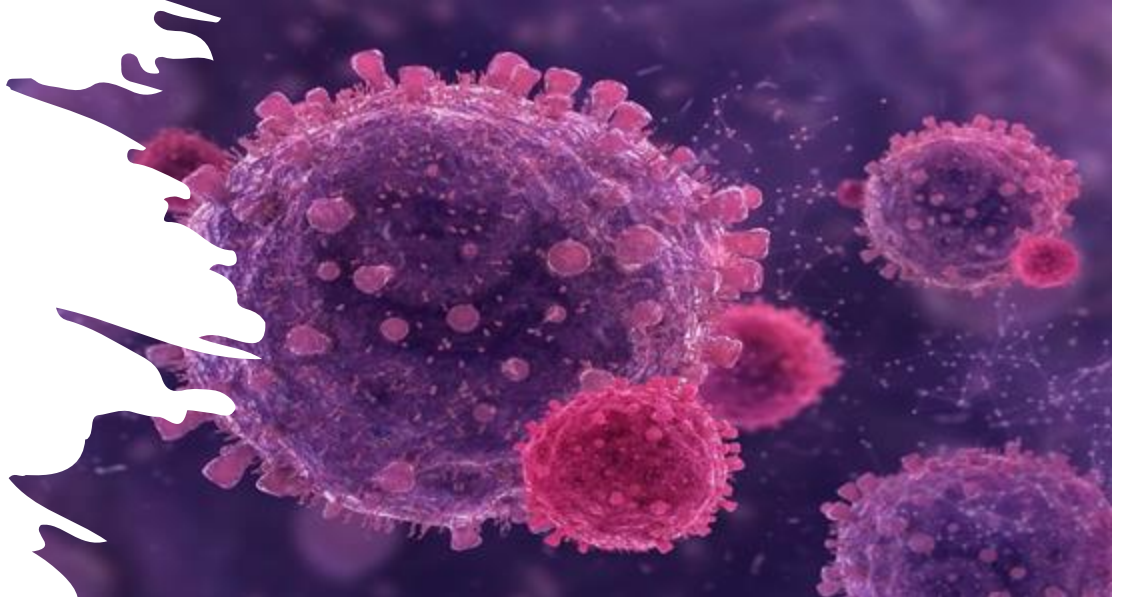


Sleep



Exposure to Toxic Substances

Diseases and Disorders of the Brain



Attachment



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- Relationships that very young children have with their regular caregivers affect brain growth and development.
- Attachment is the enduring bond that children form with their regular caregivers, beginning in their early years.



Secure and Insecure Attachment

Secure Attachment

- Sensitive and responsive caregivers.
- Children feel safe and secure to explore.

Insecure Attachment

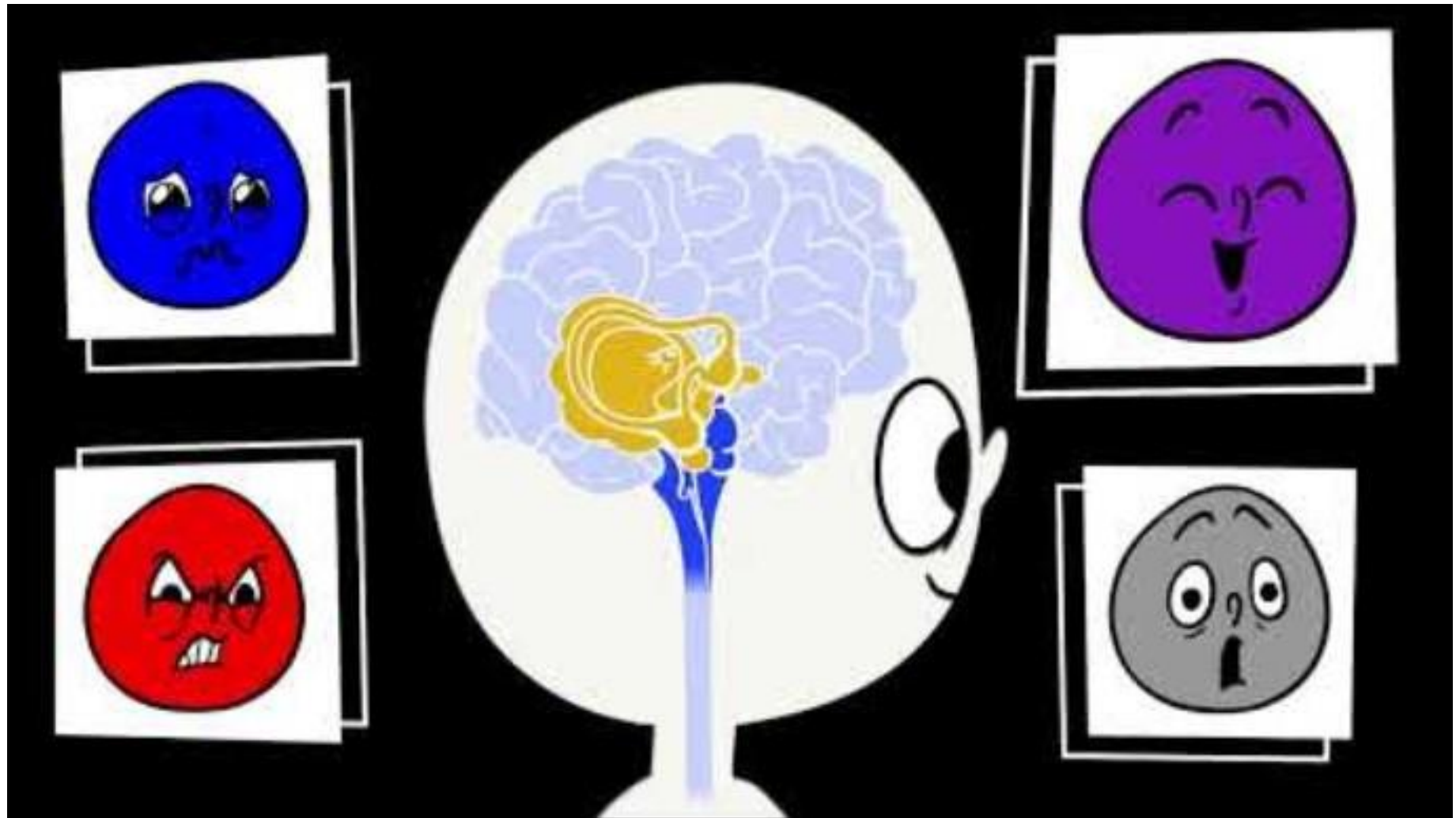
- Distant, disengaged, or inconsistent caregivers.
- Children are unsure whether or when their needs will be met and do not explore their environment.



Attachment and Stress



- The quality of the relationship impacts how children deal with stress.
- How children handle stress affects overall development and functioning.



RELAX



Usefulness of Stress Response

- A small amount of stress reaction can be helpful.
 - Alert, focused, and poised
- “Fight, flight, or freeze” response.





Stress and Brain Development



- Very young children
 - have limited ability to cope with stress and
 - depend on adults to help them cope with stress.
- The part of the brain that controls reactions to stress is fully developed at birth. However, the forebrain, the part of the brain that controls *thinking* about feelings, memories, and experiences, is still maturing.



Find your match!





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The Stress Continuum

The Stress Continuum

Positive

Tolerable

Toxic





Positive Stress



Normative stress—reactions to normal life experiences that are not dangerous or threatening.

- A necessary aspect of healthy development for coping with everyday events
- Stress is short term in nature
- Often within the child's ability to cope, with some scaffolding (National Scientific Council on the Developing Child, 2005/2014).



Tolerable Stress



Tolerable stress is longer lasting and more intense but is relieved by supportive relationships.

- Associated with high cortisol release
- May disrupt brain architecture if prolonged
- Supportive relationships facilitate a child's ability to cope (National Scientific Council on the Developing Child, 2005/2014).



Toxic Stress



Toxic stress involves:

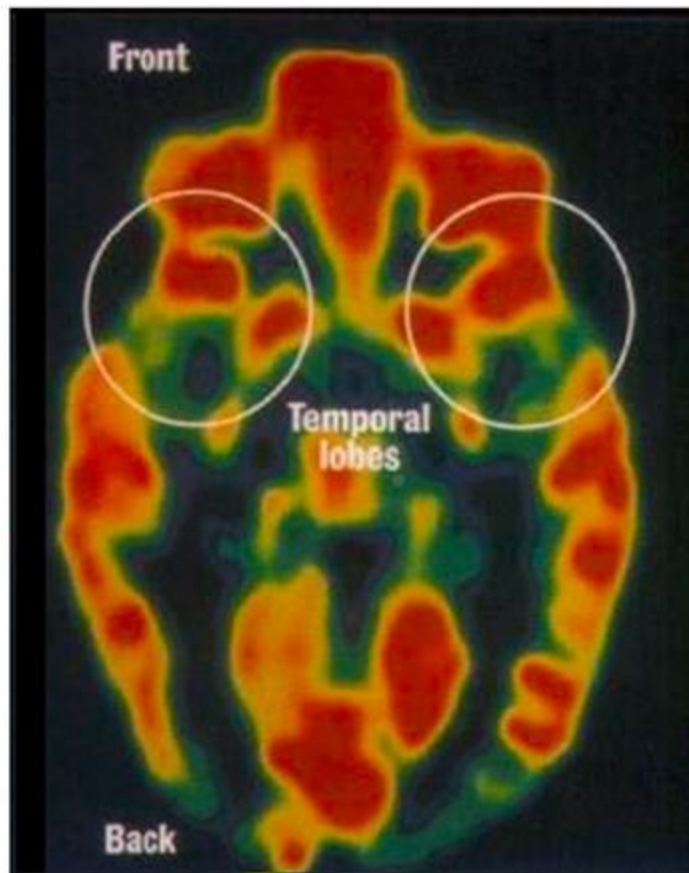
- **STRONG AND PROLONGED** activation of the body's stress response
- **ABSENCE** of adult support (National Scientific Council on the Developing Child, 2005/2014).
- Cortisol continuously floods the brain, which can alter the way it develops (National Scientific Council on the Developing Child, 2005/2014).



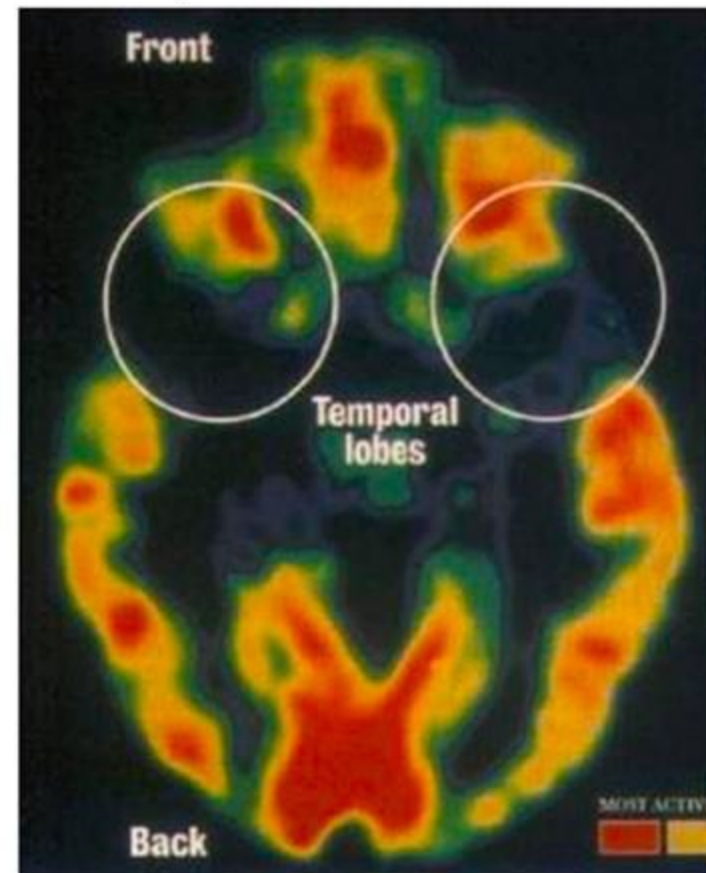
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Brain Scan: Effects of Toxic Stress

Typically Developing Brain



Brain of Child Exposed to Neglect, Trauma, and Abuse



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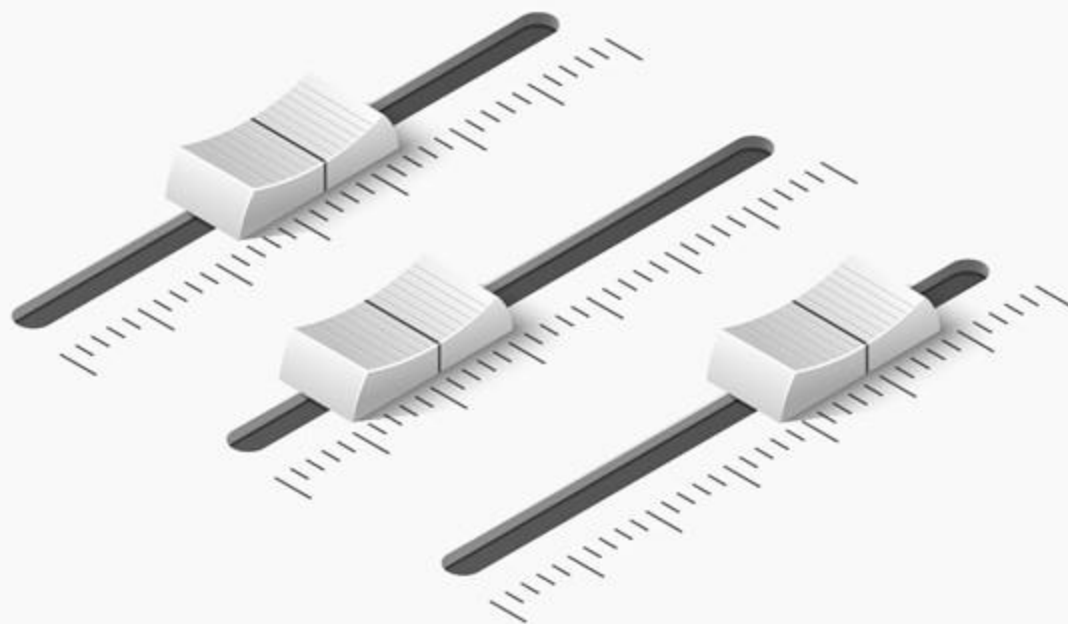
Temperament



- Temperament accounts for how children approach the world.
- Temperament is brain based, part of our biological makeup.



Temperament Traits



- Activity level
- Distractibility
- Intensity
- Regularity
- Sensory threshold
- Approach/withdrawal
- Adaptability
- Persistence
- Mood



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Temperament Shapes Behavior



- Brain-based
- A foundation for personality
- Influenced by experience
- Goodness-of-fit



The 5 R's of Healthy Brain Development



- 1. Relationships***
- 2. Responsive interactions***
- 3. Respect***
- 4. Routines***
- 5. Repetition***

One hundred years from now, it will not matter what my bank account was, how big my house was, or what kind of car I drove. But the world may be a little better, because I was important in the life of a child.

Forest Witcraft

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people may not remember
exactly what you did,
or what you said.
but they will always
remember how
you made them feel.

MAYA ANGELOU

Serve and Return



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Chats with my
18 month old 🤔

TikTok
@xxyywoods

Respect



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- **Treating all children as valuable individuals.**
- **Teach and guide, not punish and shame.**
- **Empathy.**
- **Understand misbehavior.**
- **Provide understanding and support.**

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- ✓ Learn about children and families
- ✓ Develop and teach expectations
- ✓ Develop and teach empathy
- ✓ Consider the child's perspective
- ✓ Use group time to discuss conflict

Routines



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- **Safety and security.**
- **Calms bottom functions.**
- **Allows top functions.**



Repetition



Set realistic expectations based on brain development.



Be aware that the experiences we provide are building brain architecture.



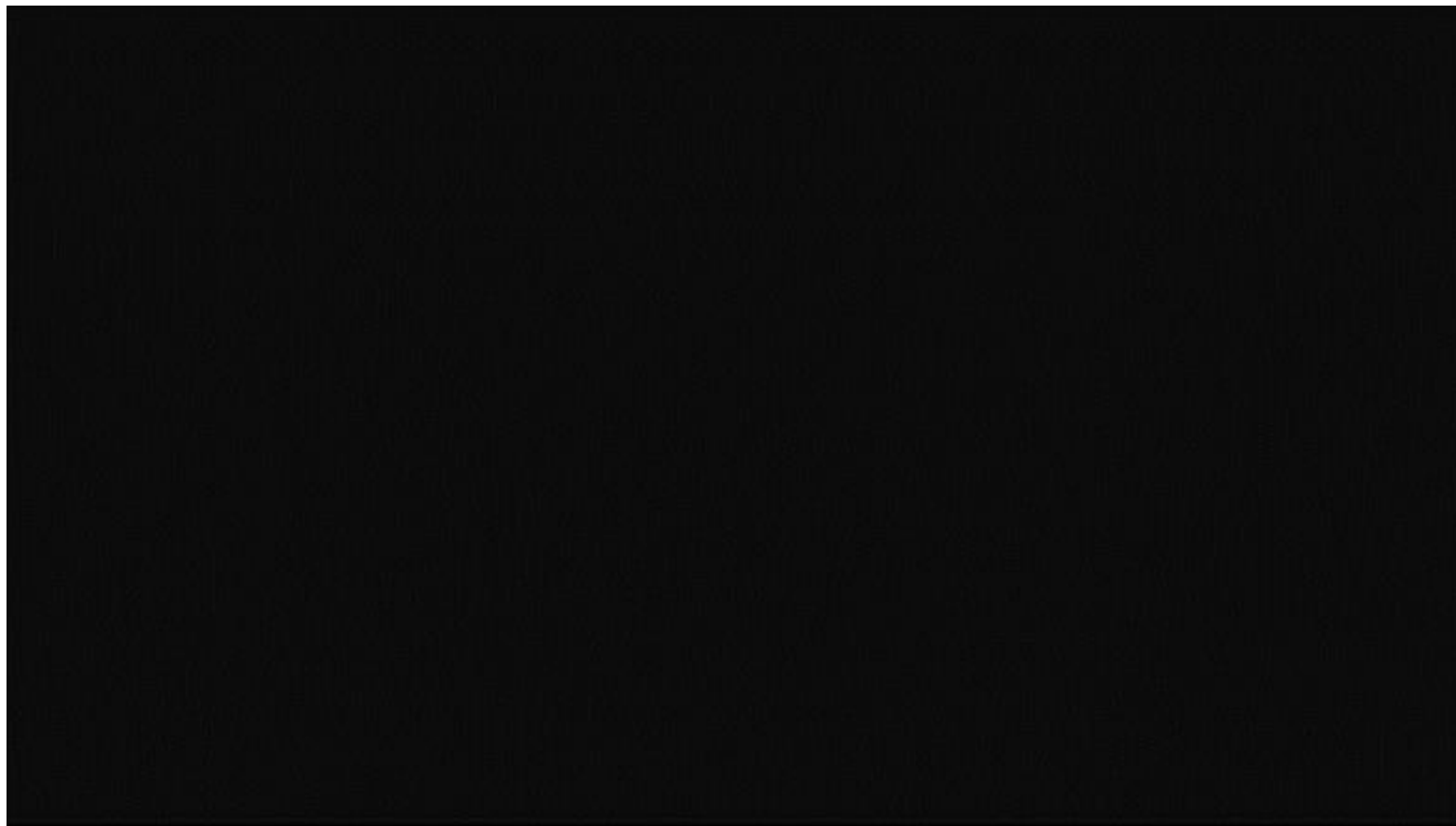
Provide positive relationships and supportive, enriching environments.






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Video: Child Care Sing-Along





**How will you support the
growing brains of the
children with whom you
work?**

Thank you!

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