

# Module 2: Child Dev. and Growth - Brain Dev.

*Power point #3*



# Objective

The student will describe early brain development.

# Discussion Questions

1. How does the brain develop?
2. What is executive functioning and toxic stress?
3. How can providers support early brain development?

# Brain Development basics

Recent research shows that the earliest years are the most critical for brain development and future learning.



# The most important findings of the brain are:

- It develops through a combination of nature and nurture
- Begins development in the prenatal stage
- Contains over 100 billion brain cells (neurons) at birth
- Grows to fit its' environment by connections ( or synapses) made between neurons.
- Uses synapses to send brain impulses, controlling body, mind, feelings, memory and language.

## Important findings about the brain contd.

- Is wired on a “use it or lose it” system. Synapses are created and strengthened with use, and wither away if unused.
- Is dependent on the quality of the relationship between the infant and primary care giver.

# You Cannot Spoil a Baby!

Responding to an infant's cues quickly and reliably not only promotes security and enhances brain development, but research has shown it also makes babies cry less.



# Other findings to note

- Research has found that the architecture and functioning of the infant brain is determined by the quality of the first relationships-the attachment between a baby and his/her primary caregiver.
- This relationship “sculps” the brain for future learning, behavior, relationships, feelings and health.
- For optimal development infants need a secure attachment with one primary caregiver that provides responsive, reliable and affectionate care.



# The main ingredient needed

The “Serve and Return” relationship between children and primary caregivers.

This is a reciprocal back-and-forth interaction when children reach out to adults and adults respond in kind.

# Video Clip on Serve and Return

[http://developingchild.harvard.edu/resources/multimedia/videos/three\\_core\\_concepts/serve\\_and\\_return/](http://developingchild.harvard.edu/resources/multimedia/videos/three_core_concepts/serve_and_return/).

# Executive Functioning and The Brain

- This is the brain's "Air Traffic Control System", enabling the brain and body to deal with multiple information and distractions at one time.
- Can be broken down into three skill areas: Working Memory, Inhibitory Control, and Mental Flexibility
- Is associated with good child outcomes, success in school, and life-long benefits.

# Video Clip

[http://www.deltraining.com/courses/Executive Function/content-frame.htm](http://www.deltraining.com/courses/Executive_Function/content-frame.htm)

[http://developingchild.harvard.edu/resources/multimedia/videos/inbrief\\_series/inbrief\\_executive\\_function/](http://developingchild.harvard.edu/resources/multimedia/videos/inbrief_series/inbrief_executive_function/)