



Welcome to
The Growing Brain

THE TRAINING WILL BEGIN SHORTLY! WHILE YOU'RE WAITING...


Icebreaker Question
(answer in the chat)
What color best describes your personality today?

Survey & Certificate of Completion
Available following the training.

Connect with us! 

VISIT CALTRIN.ORG & SCAN TO LEARN MORE 

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Hi, We're CalTrin!

Who we are

- The California Training Institute
- Funded by the State of California, Dept. of Social Services, Office of Child Abuse Prevention (OCAP) to support child abuse prevention through professional development and extended learning opportunities.
- Designed for staff of family strengthening and child abuse prevention organizations in California, including Family Resource Centers, Child Abuse Prevention Councils, community-based organizations, and other child and family serving systems.

What we offer

- Live webinars & small group training
- Virtual, self-paced courses
- Job aids & other resources

This training was made possible with funding from the California Department of Social Services, Office of Child Abuse Prevention. Any opinions, findings, conclusions, and/or recommendations expressed are those of the CEBC, CalTrin and do not necessarily reflect the views of the California Department of Social Services.

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UPCOMING TRAININGS
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-  **June 10:** Reimagining the Restoration of Child & Family Well-Being by Leading with Prevention
-  **June 18:** Protective Factor of the Month: Social Connections

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Before We Begin...

DURING		AFTER
 Access your notetaking slides now! The link can be found in the chat.	 Review interactive features for today's session. Locate the controls on the toolbar at the bottom of your screen.	 Complete the survey at the end of this webinar to receive your Certificate of Attendance.
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The Growing Brain


Presented by Mimi Thuong, PhD, LPCC, IMH-E



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Speaker SPOTLIGHT

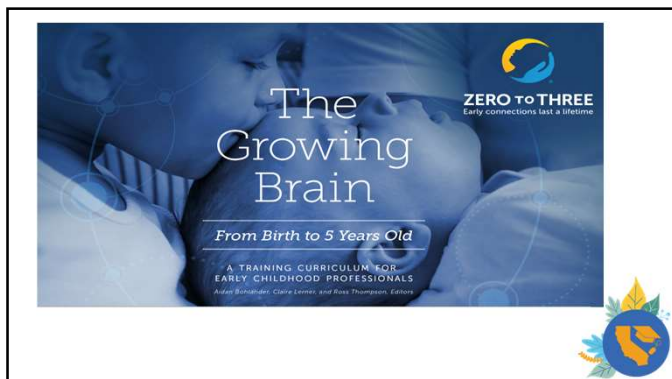


- Doctorate in Infant & Early Childhood Development and Mental Health
- Licensed Professional Clinical Counselor
- Infant & Early Childhood Mental Health Specialist
- Expertise in treating early childhood anxiety, depression, attachment issues, stress, and trauma
- Founder of Beautiful Hero, a private practice specializing in child mental health

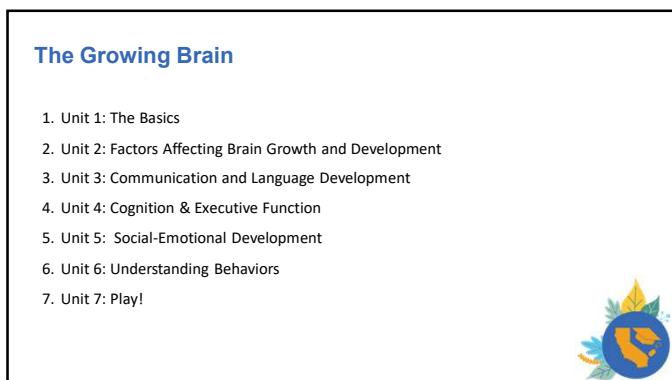
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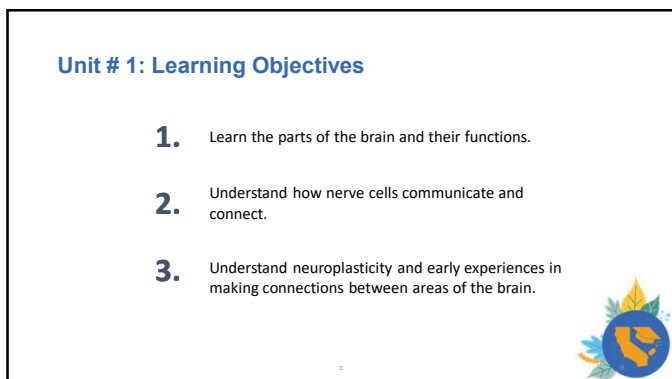
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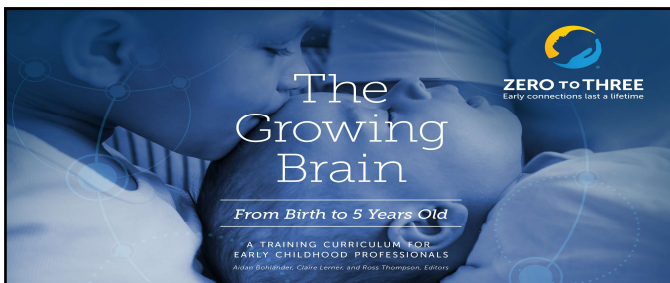
Unit # 2: Learning Objectives

- 1.** Identify factors that affect brain growth and development.
- 2.** Understand the impact of stress on brain development.
- 3.** Learn about the 5 R's for supporting healthy brain growth and development.



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The Growing Brain
From Birth to 5 Years Old
A TRAINING CURRICULUM FOR EARLY CHILDHOOD PROFESSIONALS
Adnan Bohlandi, Claire Lerner, and Ross Thompson, Editors

ZERO TO THREE
Early connections last a lifetime

Unit 1: All About Brain!

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safe space

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**WHAT YOU
SAY IN HERE
STAYS IN HERE**

UNLESS

*Someone is hurting you
You want to hurt someone else
You want to hurt yourself
You give me permission to share*



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Icebreaker 😊

Newborn brain

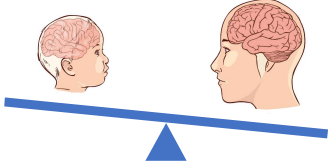

- 14 oz ?
- 20 oz ?
- 25 oz ?

Adult's brain

- 3 lbs?
- 5 lbs?
- 7 lbs?

Please share:

- ✓ Your name:
- ✓ Location:
- ✓ A guess for how much a brain weighs

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Brain from birth-6 months

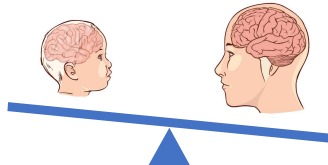

Newborn brain

12 oz -14 oz

Adult brain

2 lbs 14 oz - 3 lbs 8 oz

- ✓ Babies are born with brains that are already about **25%** of their adult size and continue to grow rapidly during the first 6 months.
- ✓ Brain grows both in **size and connectivity.**

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Learning Objectives #1

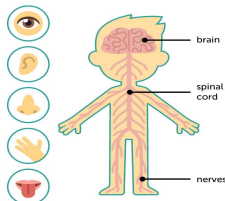


☐ Learn the Parts of the Brain and Their Functions.



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The Nervous System



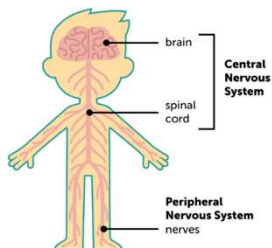
- ✓ The brain is part of the nervous system.
The nervous system consists of the brain, spinal cord, and a complex network of neurons (nerve cells) that extend throughout the body.
- ✓ The nervous system is responsible for sending, receiving, and interpreting information from all parts of the body.
(Society for Neuroscience, 2016).

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The Central, Peripheral, and Autonomic Nervous Systems

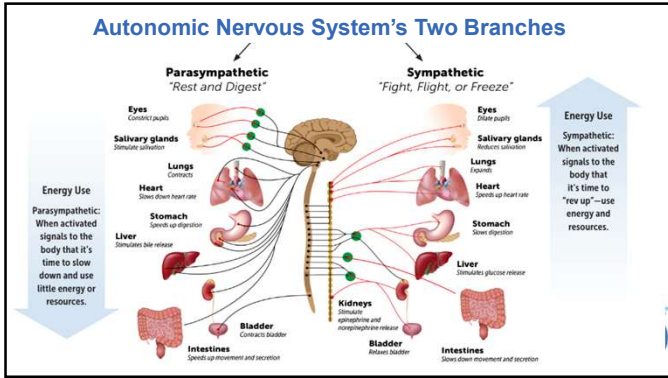


- **Central nervous system (CNS):** made up of the brain and spinal cord.
 - ✓ The spinal cord is the main highway for information to and from the brain
- **Peripheral nervous system (PNS)** —nerve fibers that branch off from the spinal cord to all parts of the body
 - ✓ **Autonomic nervous system**—part of the PNS, automatically activated when the brain senses dangers.

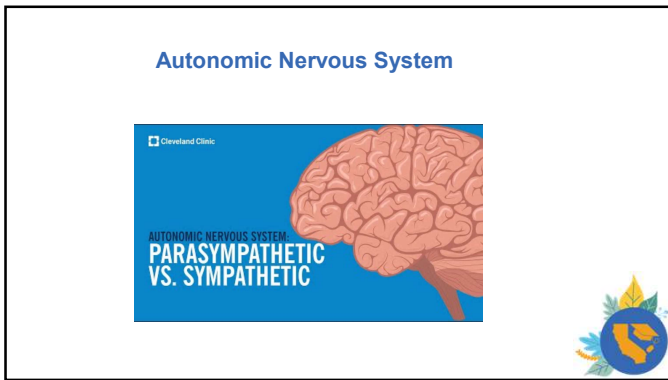
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Think about us!!

- ✓ What are times when you know you've activated your sympathetic nervous system (GAS)—an event that is stressful or triggers an energetic response?

- ✓ What are some situations in which your parasympathetic nervous system (BRAKE) might be activated—when your system is finding way to calm down?

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Think about a child we know

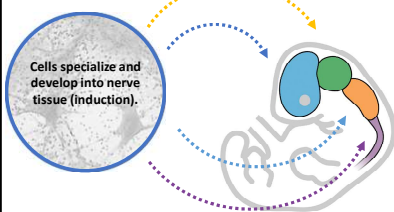
✓ What are some examples of when a child's sympathetic nervous system (GAS) might get activated?

✓ What are some examples of when a child's parasympathetic nervous system (BRAKE) becomes activated?



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Neural Induction



➤ The development of the brain starts in utero through a process known as **neural induction**. As the embryo grows, certain cells developing into nerve tissue

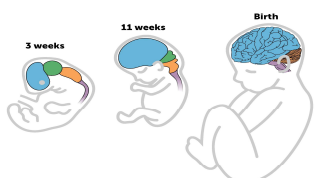
➤ Following induction, the cells **migrate** to form different regions of the brain (*Society for Neuroscience, 2016*).

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Prenatal Brain Development



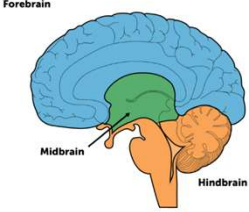
Forebrain ■ Midbrain ■ Hindbrain ■ Spinal Cord ■

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Three Major Regions



Forebrain


Midbrain

Hindbrain

Hindbrain + Midbrain = Brain Stem

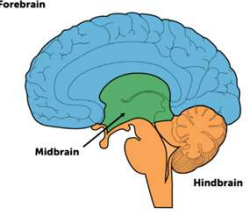
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- ✓ While the basic structures of the brain are present at birth, they are not fully mature or well-connected.
- ✓ The brain grows and matures **from the bottom up, and from the back to the front** (*Society for the Neuroscience, 2016*).



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Start from the bottom!



Forebrain


Midbrain

Hindbrain

Hindbrain + Midbrain = Brain Stem

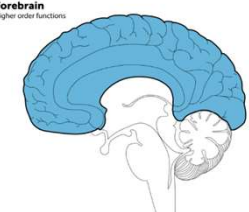
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- **Hindbrain**
 - Located at the base of the brain near the spine
 - Functions include controlling breathing, heart rhythm, and blood sugar levels (*Society for Neuroscience, 2016*)
- **Midbrain**
 - Located between the hindbrain and forebrain
 - Functions include eye movement, hearing, motor control, sleep/wake patterns, alertness, regulation



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To the top 😊



Forebrain
Higher order functions

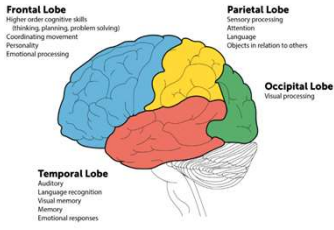
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- ✓ The last part of the brain to develop fully.
- ✓ Responsible for more complex functions: thinking, perceiving, emotional processing, planning, problem solving.
- ✓ The most frontal part of the forebrain, the prefrontal cortex, continues to develop through **our mid to late 20s**.



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The Cerebral Cortex



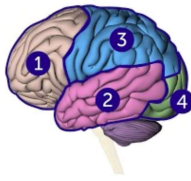
- Cerebral cortex:**
- ✓ The most outer layer of the cerebrum of the forebrain. If the forebrain was an orange, the cerebral cortex would be the peel.
 - ✓ By 24 months, the outer layer of the cerebral cortex is more than 97% as thick as it will ever be.
 - ✓ Includes 4 lobes: frontal lobe, parietal lobe, occipital lobe, and temporal lobe

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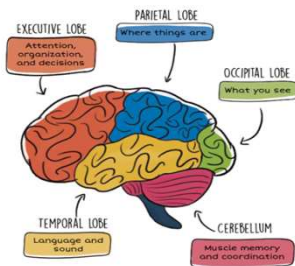
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Different parts of the brain



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Let's simplify!!



Dr. Liz Angoff, 2021
www.brainbuildingbook.com



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Reflection

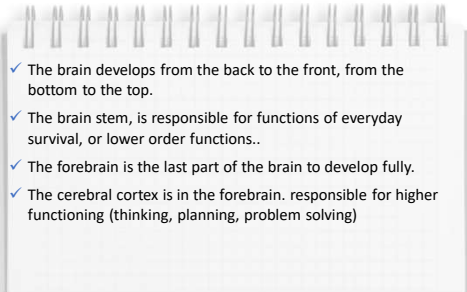


❖ *Reflect on your own abilities for thinking, planning, and problem solving in your teen years, versus your mid to late 20s. How much stronger were these skills as you grew beyond your mid-20s?*



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Review (LO#1)



- ✓ The brain develops from the back to the front, from the bottom to the top.
- ✓ The brain stem, is responsible for functions of everyday survival, or lower order functions..
- ✓ The forebrain is the last part of the brain to develop fully.
- ✓ The cerebral cortex is in the forebrain. responsible for higher functioning (thinking, planning, problem solving)

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Learning Objectives #2



- ❑ Understand how nerve cells communicate and connect.



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Brain Connectivity



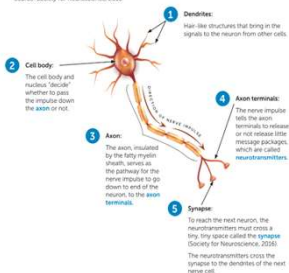
- ✓ Brain does NOT just grow in size, but also through **connections** made within neurons.
- ✓ A newborn brain contains more than **100 billions** of neuron. But they're NOT connected for the most part.
- ✓ Connections between synapses are strengthened through repeated experiences.



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Neuron

Source: Society for Neuroscience, 2016



- ✓ A neuron is a specific name for a cell in the nervous system.
- ✓ Some neurons have specific functions.
 - Ex: with neurons that process language, as a child receives sensory information, the brain fine-tunes connections between neurons that help him learn a language



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Synaptogenesis



- **Synaptogenesis:** The creation of connections between neurons. Neurons that communicate with each other more often form stronger connections across their synapses.
- ✓ It means the experiences that young children have in the world stimulate the neurons to communicate with each other → forming connections and structuring their brains.

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Experiences Shaping Brain Architecture



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Infant Brain Development



- ✓ Every part of a baby's brain is making new connections → **motor cortex area** is the busiest!!
- ✓ As a child learns to crawl, connections between neurons in the brain, the motor neurons in the body, and the muscles they target strengthen and grow.
- ✓ Although the motor cortex is already there, it is only through **real-world experiences** that babies map their own bodies



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Stages in Brain development in infants



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The visual cliff experiment



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Reflection

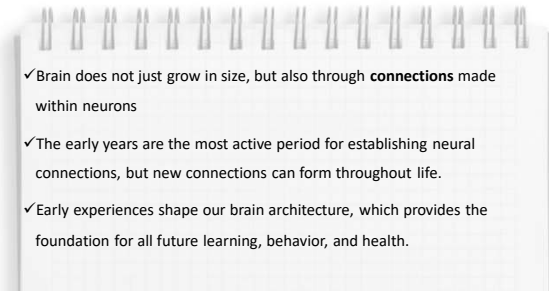


- ❖ *The experiences that children have affect the actual structure of their brain. In other words, **brains are built through experience.***
- ❖ *Reflect on some of the experiences you have been through that might have shaped your thoughts/ perception?*



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Review (LO#2)



- ✓ Brain does not just grow in size, but also through **connections** made within neurons
- ✓ The early years are the most active period for establishing neural connections, but new connections can form throughout life.
- ✓ Early experiences shape our brain architecture, which provides the foundation for all future learning, behavior, and health.

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Learning Objectives #3



- Understand Neuroplasticity & The Role of Early Experiences in Making Connections Between Areas of the Brain



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Neuroplasticity

Neuroplasticity—brain's potential to create or change networks of neurons based on experiences.

Infants have a great deal of flexibility, or **neuroplasticity** in their brains.

(Society for Neuroscience, 2016).

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Types of Neuroplasticity

There are generally two types of neuroplasticity:

Experience-expectant

Experience-dependent



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Experience-Expectant Neuroplasticity



- ✓ Brain expects universal human experiences
- ✓ Synapses are created in ADVANCE.
- ✓ Connections form based on exposure to experiences that most people would have in their environment.
- ✓ "Use it or lose it." For example,
 - visual cortex: the ability to develop the part of our brain that processes vision depends on taking in light through our eyes
 - language: the ability to develop the part of our brain to processes language depends on being exposed to language



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Experience-Dependent Neuroplasticity



- ✓ Brain responds to specific, unique experiences
 - ✓ Synapses are created **in responding** to experiences.
 - ✓ Use new and changing information
 - ✓ Learn from experiences
- For example: Lab rats (1984)
Enriched conditions → better learning, more synaptic connections



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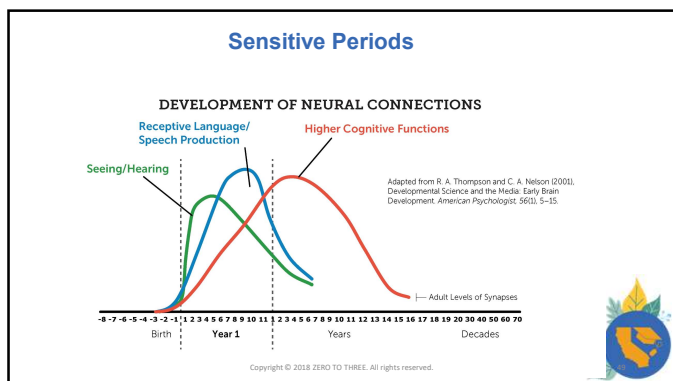
Timing- Windows of Opportunity

- ✓ The timing of **WHEN** a person is exposed to certain environmental stimuli can affect the development of neural connections (brain development).
- ✓ Some areas of development have windows of time that close more quickly, called **critical periods**, while others stay open longer, called **sensitive periods**.
 - ❑ **Critical periods**- time in infancy when the brain is exceptionally responsive to specific environmental stimuli and experiences.
 - ❑ **Sensitive periods**—time in development when a brain region is most open to learning or refining a particular skill or brain function.

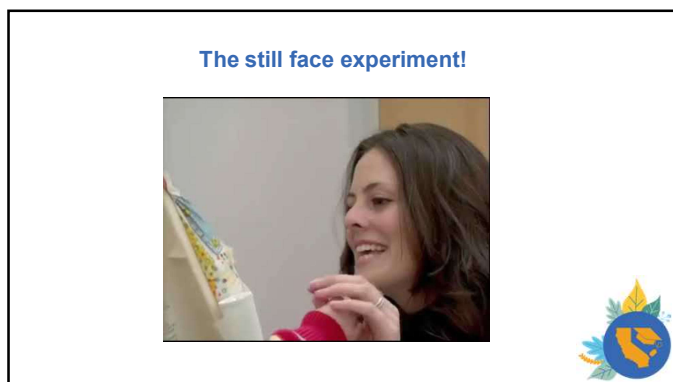


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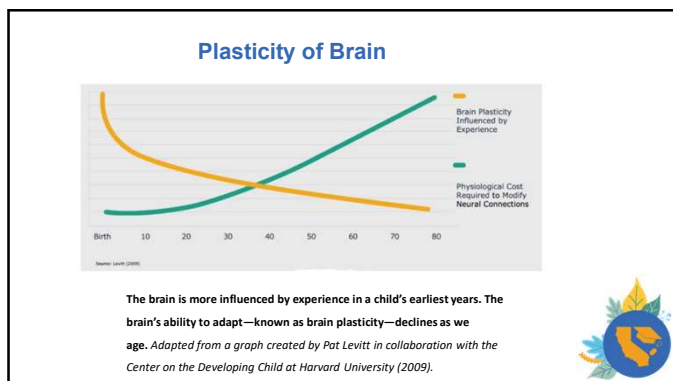
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Transient Exuberance



- ✓ "Transient": some of these connections are short-lived.
- ✓ "Exuberance": connections grow rapidly during the early years.



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Synaptic Pruning



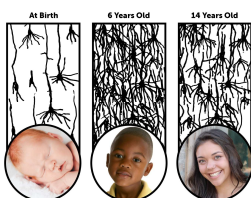
- ✓ As the child grows, and the brain learns more about what type of environment the child is living in, it "decides" what connections he needs and doesn't need to thrive in his world.
 - The least used connections in the brain are pruned or eliminated.
 - The remaining connections, those that are most frequently used and most critical to the child's development, remain.



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The Efficient Brain- Pruning



- ✓ Pruning allows us to keep the pathways that we use, based on our experiences in life, making our brains more efficient
- ✓ Pruning allows the brain to adapt to its environment




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Review

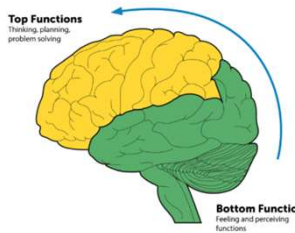
1. The brain is more influenced by experience in a child's earliest years.
2. In experience expectant neuroplasticity, synapses are created **in advanced** .
Ex: vision, language.
3. In experience dependent neuroplasticity, synapses are created **in responding** to experiences. Ex: learning a new language
4. Traits controlled by both genes or the environment (both nature and nurture)
5. Pruning allows the brain to adapt to its environment.

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Functions of the Brain



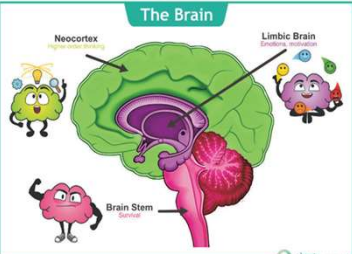
- ✓ The top and bottom functions work together to help us navigate the world. Human beings need to perceive and feel, and then think about how to act on their perceptions and feelings in functional ways that help them adapt to the environments.
- ✓ The key is to help children integrate the top and bottom functions so that they can think through their feelings and manage them in ways that are acceptable.

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Brain at 24-36 months



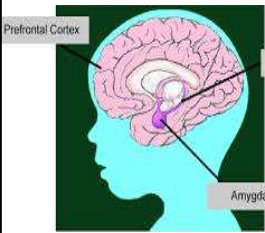
- ✓ By the time a child is 3 years old, the brain is working so hard that it uses more than energy than any other part of the body.
- ✓ **Limbic system:** critical for memory, emotion and behavior. They are developing rapidly during the 3rd year of life.
- ✓ Children are learning how to relate to others. They are using their growing memory to anticipate about people and events in their world.

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Do children remember?




- ✓ Brain regions that process emotions- **amygdala** and **hippocampus** are central to creating memories.
 - **Amygdala:** Emotions
 - **Hippocampus:** memory
- ✓ Too much or sustained stress over long period of time can become trauma → the genes in those regions governing memory stop working properly.
- ✓ Trauma interfere with memory.




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BRAIN STATE MODEL



- ❖ **Executive State**
 - ✓ Need: Problem solving opportunities
 - ✓ Looks like: Wisdom, logical thinking
 - ✓ Message: What can I learn?
- ❖ **Emotional State**
 - ✓ Need: Connection
 - ✓ Looks like: Back talk, sass, yelling, verbal reactions
 - ✓ Message: Am I loved/connected?
- ❖ **Survival State**
 - ✓ Need: Safety
 - ✓ Looks like: Hiding, fighting, surrender, physical reactions
 - ✓ Message: Am I safe?



Source: Conscious Discipline- The Three Brain States

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Hand Model of the Brain (Dan Siegel)




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Hand Model of the Brain (child-friendly version)



HAND MODEL OF THE BRAIN FOR KIDS WITH JEANETTE YOFFE



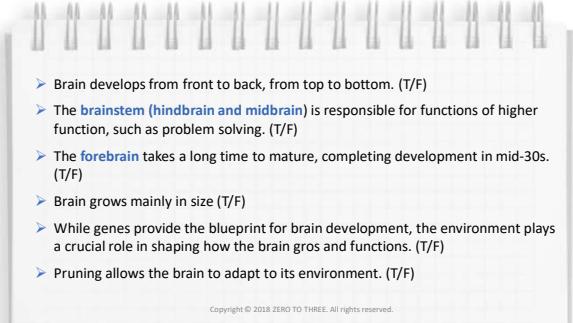
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Quiz time!!!




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Mini-quiz!!




- Brain develops from front to back, from top to bottom. (T/F)
- The **brainstem** (**hindbrain** and **midbrain**) is responsible for functions of higher function, such as problem solving. (T/F)
- The **forebrain** takes a long time to mature, completing development in mid-30s. (T/F)
- Brain grows mainly in size (T/F)
- While genes provide the blueprint for brain development, the environment plays a crucial role in shaping how the brain grows and functions. (T/F)
- Pruning allows the brain to adapt to its environment. (T/F)

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What Providers Can Do



- ✓ Be aware that the experiences we provide are building brain architecture.
- ✓ Provide positive relationships and supportive, enriching environments.
- ✓ Set realistic expectations based on brain development.

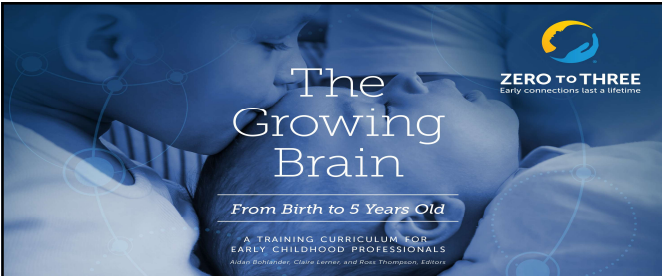


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The Growing Brain

From Birth to 5 Years Old

A TRAINING CURRICULUM FOR EARLY CHILDHOOD PROFESSIONALS

Adapted by: Celia Lerner and Ross Thompson, Editors



Unit 2: The Factors Affecting Brain Growth and Development

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Unit # 2: Learning Objectives

1. Identify factors that affect brain growth and development.
2. Understand the impact of stress on brain development.
3. Learn about the 5 R's for supporting healthy brain growth and development.



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Learning Objectives #1



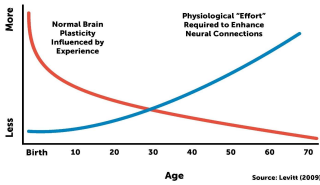
- Identify factors that affect brain growth and development.



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Review

The Ability to Change Brains Decreases Over Time



- ✓ The brain is most plastic, or adaptable to making connections based on experiences, in the early childhood years. (Thompson, 2014).
- ✓ It takes much more effort as we get older to effect change in our brains through our experiences (Thompson, 2014).



Source: Levitt (2009)
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Functions of the Brain

Top Functions
Thinking, planning, problem solving

Bottom Functions
Feeling and perceiving functions

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- ✓ The top and bottom functions work together to help us navigate the world. Human beings need to perceive and feel, and then think about how to act on their perceptions and feelings in functional ways that help them adapt to the environments.
- ✓ The key is to help children integrate the top and bottom functions so that they can think through their feelings and manage them in ways that are acceptable.

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The Autonomic Nervous System's Two Branches

Parasympathetic
"Rest and Digest"

Sympathetic
"Fight, Flight, or Freeze"

- ✓ When the brain interprets an event as stressful it activates the **sympathetic nervous system**.
- ✓ **Cortisol** helps to slow down bodily systems that are not necessary for survival. This slowdown is a useful function in short spurts of time when we experience stress.
- ✓ When we are calm again, the **parasympathetic nervous system** kicks in and returns us to normal functioning.

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Upstairs and Downstairs Brain

The Upstairs and Downstairs
BRAIN

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What do you think?



✓ What are some factors that affect brain growth and development?

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Factors Affecting Brain Growth



- ✓ Gene
- ✓ Environment interactions
- ✓ Nutrition
- ✓ Sleep
- ✓ Exposure to toxic substances
- ✓ Disorders of the brain in early childhood
- ✓ **The role of relationships**

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Gene–Environment Interactions




- ✓ The development of the brain is largely based on the unique genetic blueprint, (DNA) that a child is born with (*Tebbenkamp, Willsey, State, & Šestan, 2014*).
- ✓ Both positive and negative experiences can affect whether a gene in the child's DNA is activated or deactivated. (*National Scientific Council on the Developing Child, 2010*).

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Nutrients



Smart foods: leafy greens, beans, fish, blueberries, nuts, whole grains, vegetables, dark chocolate!

- ✓ Brain development is influenced by mother's nutrition prenatally and the nutrients he receives through his diet, once born.
- ✓ Severe malnutrition can
 - slow brain growth
 - thin the cerebral cortex
 - reduce the number of neurons, connections between the neurons, and myelination (Laus et al., 2011)
- ✓ Your brain likes to be "well-fed" to function properly.



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Sleep




- ✓ Adequate sleep (especially deep sleep) is extremely important for brain growth (Graven & Browne, 2008).
- ✓ Daily recommended amount of sleep (American Academy of Pediatrics, 2016):
 - Infants (4–12 months): 12–16 hours
 - Toddlers (1–2 years): 11–14 hours
 - Preschoolers (3–5 years): 10–13 hours




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Large group discussion



- ✓ How have you seen children's lack of sleep affect their behavior and learning?
- ✓ What do you do to create nurturing sleep routines for children during the day?
- ✓ What do you do to create nurturing sleep routines for children during the day?



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Exposure to Toxic Substances



- ✓ Some substances used by mothers during pregnancy can negatively affect brain development.
 - Alcohol, cigarettes, street drugs, some prescription drugs, (*National Scientific Council on the Developing Child, 2006*)
 - Heavy metals such as mercury, lead, and manganese (*National Scientific Council on the Developing Child, 2006*)

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Neurological Disorders

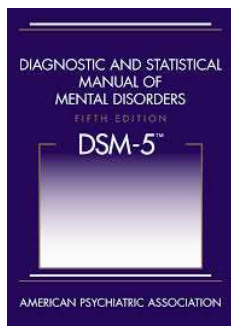
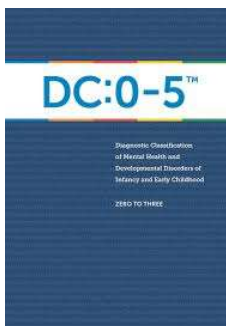


- ✓ Cause dysfunction in the brain or nervous system
- ✓ Physical, psychological/ behavior, or cognitive symptoms might arise.
- ✓ Developmental disorders: Cerebral palsy, Autism...
- ✓ Brain tumors
- ✓ Traumatic injuries

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Review (LO #1)

- ✓ As the child grows, and the brain learns more about what type of environment the child is living in, it “decides” what connections he needs. Thus, the least used connections in the brain are pruned.
- ✓ Adults can help very young children integrate both top brain function and down functions through the everyday activities.



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Learning Objectives # 2



- Understand the impact of **stress** on brain development.



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Stress

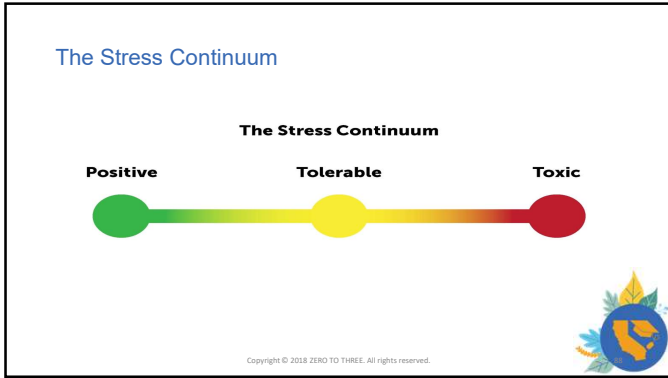


- ✓ **Stress** is the physical and emotional response a person has to events and experiences.
- ✓ A small amount of stress reaction can be helpful. Ex: when we are late for work and looking for our keys → we get activated to move around and search. Our heart rate elevates, and our pupils constrict so we can focus our vision.
- ✓ The stress response is especially useful in situations that are threatening → “fight, flight, or freeze”



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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*).

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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*).



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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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Type of Stress



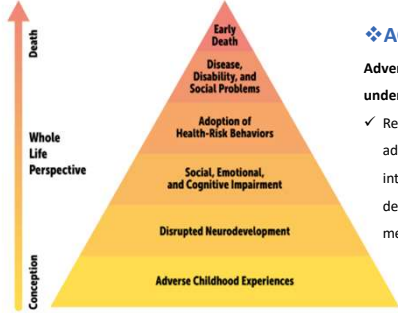
- POSITIVE** Brief increases in heart rate, mild elevations in stress hormone levels.
- TOLERABLE** Serious, temporary stress responses, buffered by supportive relationships.
- TOXIC** Prolonged activation of stress response systems in the absence of protective relationships.

• Learning is **enhanced** by challenge **tolerable stress** and **reduced** by **toxic stress**.



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❖ **ACES**


Adverse childhood experiences literally get under our skin.

- ✓ Researchers have learned that early adverse experiences become integrated into our bodies, impacting lifelong development, emotional success, and mental and physical health.




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Stress and the Brain



- ✓ Young children:
 - have limited ability to cope with stress
 - depend on adults to help them cope with stress.
- ✓ The brainstem that controls reactions to stress is fully developed at birth. However, the forebrain, the parts controls thinking about feelings and experiences, is still maturing.
- co-regulation is key!!

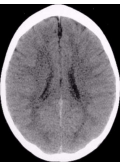


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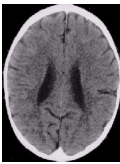
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EFFECTS OF UNDERSTIMULATION

Healthy
3-year old
Brain




3-year old
experiencing
neglect




These images illustrate the negative impact of neglect on the developing brain. In the CT scan from a healthy 3- year-old with an average head size. The image from a 3- year-old child suffering from severe sensory deprivation neglect. This child's brain is significantly smaller than average and has abnormal development of cortex."

"These images are from studies conducted by a team of researchers from the Child Trauma Academy led by Bruce D. Perry, M.D., Ph.D.




95

<h4>TRAUMA BRAIN</h4> <ul style="list-style-type: none"> ✓ Focused on survival & hypervigilance ✓ Normal events may be perceived as threats ✓ Learning new information is not a priority ✓ Executive decrease (self-regulation, creativity, problem-solving) decrease ✓ Body releases major amounts of stress hormones (Cortisol) that prepares the body for a "fight or flight". 	<h4>LEARNING BRAIN</h4> <ul style="list-style-type: none"> ✓ Focuses on learning from novelty ✓ Calm and able to deal with changes ✓ Executive functions are intact and available to solve problems, be creative, and control impulses ✓ Body releases some cortisol but other hormones and neurotransmitters involved in learning are released too.
--	--




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Story Time: "Once I was very very scared . . ."




The animals help us understand common reactions to stress and fear

Chandra Ghosh Ippen, Ph.D.




Once I Was Very Very Scared - Symptom Screener
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Introduction



- ✓ Remember the animals in the story.
- ✓ Let's think about what they each do when they feel scared. We may do some of the same things.

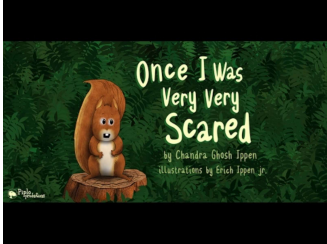



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STORY TIME

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Instructions: Thinking about yourself



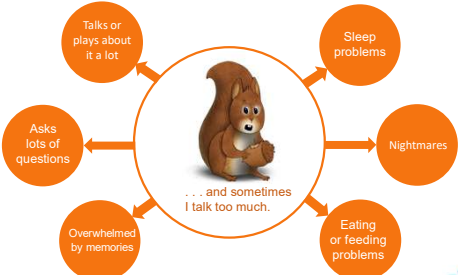
✓ Let's start with squirrel. Let's see what squirrel does.
 ✓ Circle any of the things that you also do.
 If you want, you can show how often you do these things by writing a number next to each orange ball that you circle:

- 1 – Rarely (just a little)
- 2 - Sometimes
- 3 - Often

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Squirrel's Stress & Trauma Reactions



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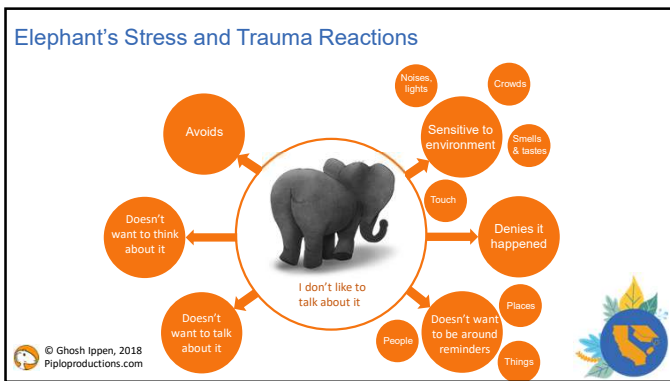
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Rabbit Stress & Trauma Reactions

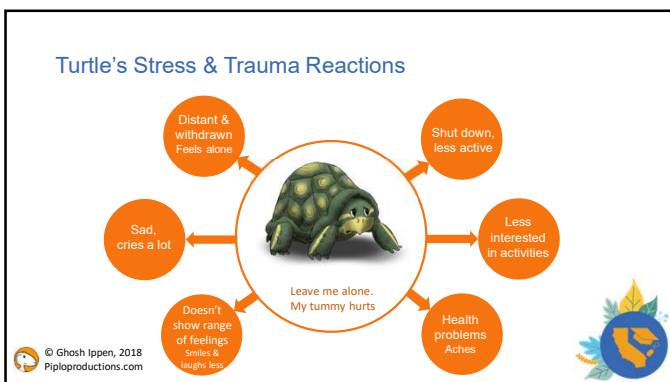


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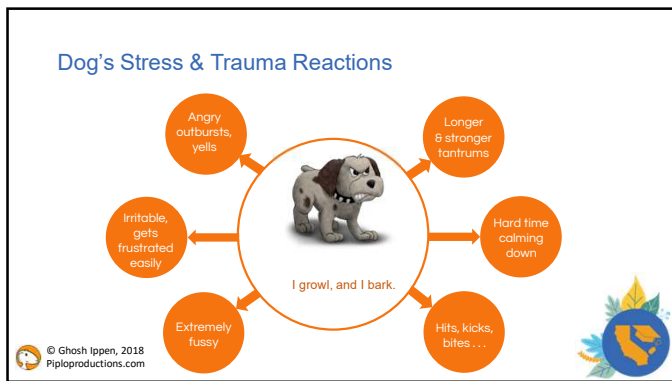
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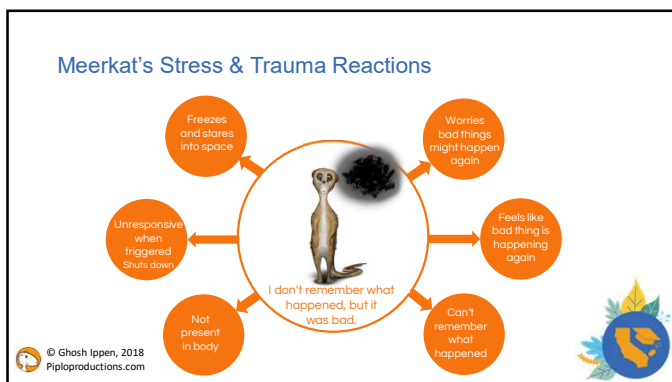
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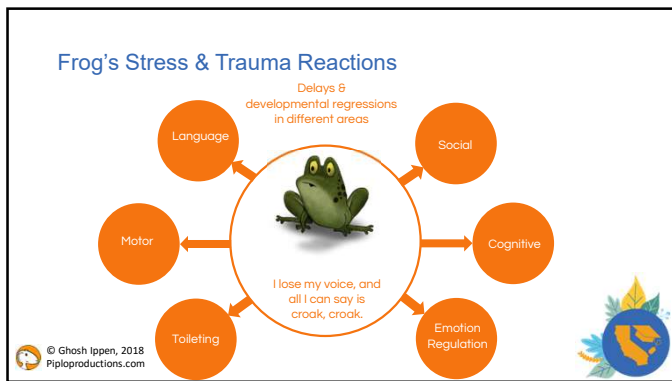
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Group discussion

- ✓ How do you respond—physically and emotionally—when things are getting to be “too much” or stressful?
- ✓ Now let’s think about calming down from a stressful situation. What do you do to help yourself calm down from a stressful situation?
- ✓ How do you see children in your care calming themselves down?

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Calming the Stress Response

- ✓ **Breathing deeply** is a tool to calm the brain and body to correctly manage a powerful thought.
- ✓ When you are calm, your brain can better organize information.
- ✓ The brain uses **20% of the oxygen** in your bloodstream.

→ More oxygen = more brain function!

Tip: Go outside and take 3 slow, deep breaths!

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Just Breathe



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Strategies for the “survival state” brain



- ✓ Creating safety in your classroom/ therapy room
- ✓ Encourage students’ participation in meaningful decisions, making reasonable rules and consequences
- ✓ Find ways to incorporate dramatic play
- ✓ Plan body movement breaks
- ✓ Use variable seating arrangements (yoga ball, couches, floor, etc.)
- ✓ Do not restrict recess as a discipline measure

Regina Rei Lamourelle, Ed.D,
Marianne Lane, M.S,
Sarah Shawesh, MA



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Imaginative is FUN!!



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Strategies for the “survival state” brain



- ✓ “Mistakes” are fuel for learning and not an opportunity for punishment.
- ✓ Rituals soothe the stressed brain!
- ✓ Relax rigid deadlines that may be more child stressors than motivators
- ✓ Practice mindfulness with calming jars, sensory boxes...
- ✓ Use music and dance



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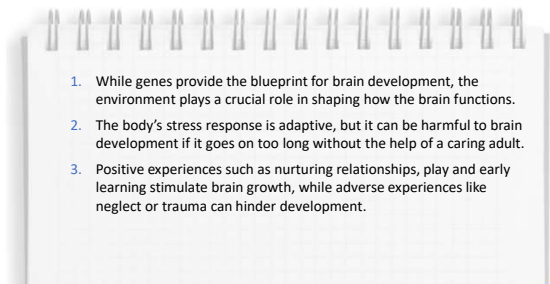
 1. PARENTAL RESILIENCE	 2. SOCIAL CONNECTIONS	 3. CONCRETE SUPPORT IN TIMES OF NEED.
5 PROTECTIVE FACTORS FOR PREVENTING RISK OF CHILD ABUSE. <small>SOURCE: Prevent Child Abuse America</small>		
 4. KNOWLEDGE OF PARENTING & CHILD DEVELOPMENT.	 5. SOCIAL & EMOTIONAL COMPETENCE OF CHILDREN.	LEARN MORE ABOUT THESE 5 FACTORS: preventchildabuse.org/resource/mentor/

- ✓ A large review of the literature by the Center for the Study of Social Policy (2012) identified several additional protective factors for children,
 - strong social connections for the family, parental knowledge of child-rearing,
 - parental resilience,
 - family access to concrete support
 - parents’ ability to support the social and emotional competence of children.



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Review (LO #2)



1. While genes provide the blueprint for brain development, the environment plays a crucial role in shaping how the brain functions.
2. The body’s stress response is adaptive, but it can be harmful to brain development if it goes on too long without the help of a caring adult.
3. Positive experiences such as nurturing relationships, play and early learning stimulate brain growth, while adverse experiences like neglect or trauma can hinder development.

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Learning Objectives #3



- Learn about the 5 R's for supporting healthy brain growth and development.



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The 5 R's of Healthy Brain Development



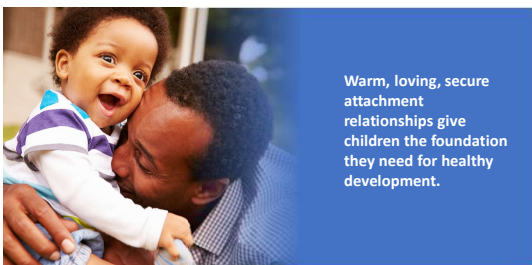
1. Relationships
2. Responsive interactions
3. Respect
4. Routines
5. Repetition

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#1. Relationships

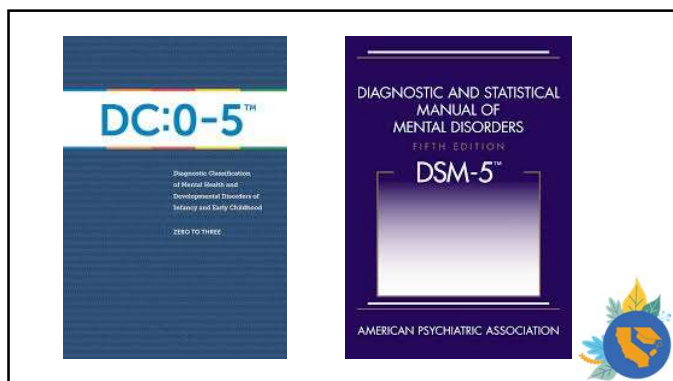


Warm, loving, secure attachment relationships give children the foundation they need for healthy development.

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Attachment



- ✓ 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 right at birth!!!

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The Strange Situation




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Secure and Insecure Attachment


Secure Attachment	Insecure Attachment
<ul style="list-style-type: none"> ➤ Sensitive and responsive caregivers. ➤ Children feel safe and secure to explore. 	<ul style="list-style-type: none"> ➤ Distant, disengaged, or inconsistent caregivers. ➤ Children are unsure whether or when their needs will be met ➤ Children do not explore their environment.

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The Power of Attunement




- ✓ **Secure attachment** was NOT predicted by parental warmth- it was predicted by SENSITIVITY!
- ✓ Parent's picking up on the child's cues and responding contingently to those cues! = ATTUNEMENT!




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#2. Responsive Interactions




- Caregiver follows the child's lead.
- Sensitive, back-and-forth interactions.
- Adult tunes in to the child.

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Serve and Return





- ✓ **Serve and return interactions**—responsive, back-and-forth exchanges between a young child and a caring adult play a key role in shaping brain architecture.
- ✓ These interactions, much like a lively game of tennis, form a critical part of a child's social environment and are crucial for early development.
- ✓ They support development of early language and social skills that serve as a foundation for more complex, high-level cognitive abilities that form later in life.



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Serve & Return Interaction Shapes Brain Circuitry

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FAST FACTS

- ✓ The human brain expects the game of back-and-forth, and it is essential for healthy development.
- ✓ “Serve-and-return interactions” reinforce brain circuits that are at the core of our early emotional well-being and social skills.
- ✓ Naming what a young child is seeing, doing, or feeling helps make important language connections, even before they can talk or understand words.




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Routine




Rituals soothe the stressed brain!

- ✓ Helps build brain connections that support memory and organizational skills.
- ✓ Create a sense of security by helping children know what, how, and when things will happen. (Seibel et al., 2009).
- ✓ Calm the bottom functions of the brain and allow children greater access to more top functions (working memory and focused attention).




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Routine



- ✓ Help children make sense of the world and learn how the world is organized
- ✓ Feel secure and safe when many things in the environment are changing
- ✓ Develop ability to regulate their own emotions and behaviors
- ✓ Set their internal body clocks
- ✓ Have a sense of independence and autonomy
- ✓ Anticipate and look forward to what come next
- ✓ Have continuity, consistency and predictability.



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Establishing routines



- ✓ Create visual reminders.
- ✓ Break routines into steps; e.g., getting ready for bed (bath, pajamas, brushing teeth, singing...).
- ✓ Prepare the child for movement from one activity to the next ("In 10 minutes, we will ...").
- ✓ Develop regular routines for daily activities, such as meals, bedtime, story time, quiet time.
- ✓ Be flexible and creative; try not to be rigid and unable to adjust to unusual circumstances.



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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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MIRROR NEURON




- ✓ The brain can re-wire itself based on new information.
- ✓ **MIRROR NEURONS** are how you learn through observing others.
- ✓ Watching someone tie their shoe activates the brain as if you were doing it yourself.
- ✓ **Practice and accuracy** builds a new skill!



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The power of repetition

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Respect



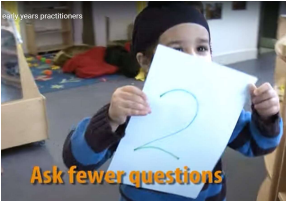
- ✓ Respect their individual differences
- ✓ Ask fewer questions and wait to respond
- ✓ Wonder together
- ✓ Do not micromanage
- ✓ Respect for your child's developmental readiness

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Ask fewer questions



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Instead of:


- "How was school today?"
- "Was the reading test hard?"

Try:

- "Welcome home. I'm SO glad to see you!"
- "I sure miss you when you're at school! My favorite part of the day is when you come home!"

NOTE: You can have a more substantive conversation later – when he's had some time to decompress, and when the conversation is on his terms.

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Wonder together



- **Child:** "Do snakes have ears?"
- **Parent:** "That's an interesting question. What do you think?"
- ✓ **Child:** "How do I build this tower?"
- ✓ **Parent:** "Are there any clues on the box that could help us? Or instructions we could read together?"

Note: Avoid saying too vague – "How many times have I told you?" or "I don't know!"

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“
Make sure you don't
micromanage
every detail of your child's
life.

AMY MCCREADY
Founder, Positive Parenting Solutions

Instead of: Wiping food off her face...

→ **Try:** "You have a little ketchup on your cheek, here's a napkin if you'd like to wipe it off."

Instead of: Tucking in his shirt unannounced...

→ **Try:** "I really love the shirt you chose! Would you prefer to have it tucked in or left out?"

Instead of: Straightening out his collar...

→ **Try:** "I noticed the back of your collar is sticking up. Would you like help putting it down, or would you like to take care of it?"

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How every child can thrive by 5 !



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Closing: Start, Reflect, Continue
Take a moment to consider an idea or practice that you might consider starting, one thing that you might reflect on doing differently, and one idea or practice that you have already been doing and will continue to do that supports healthy brain development.

Start	Reflect	Continue



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- Follow-up email with resources within two days
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