The Foundations of School Readiness for Infants and Toddlers

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Objectives

- Review the school readiness action steps and share how your program creates goals.
- Determine the crucial and effective systems that support culturally responsive, high quality practice in group care.
- Create and discuss strategies to collaborate for quality with partners.

Find Someone You Don't Know

Share one way your tribe or community celebrates or honors a birth or a very young child

Photo: EHS NRC

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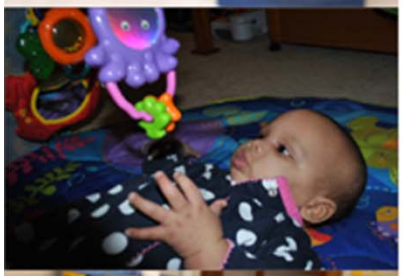
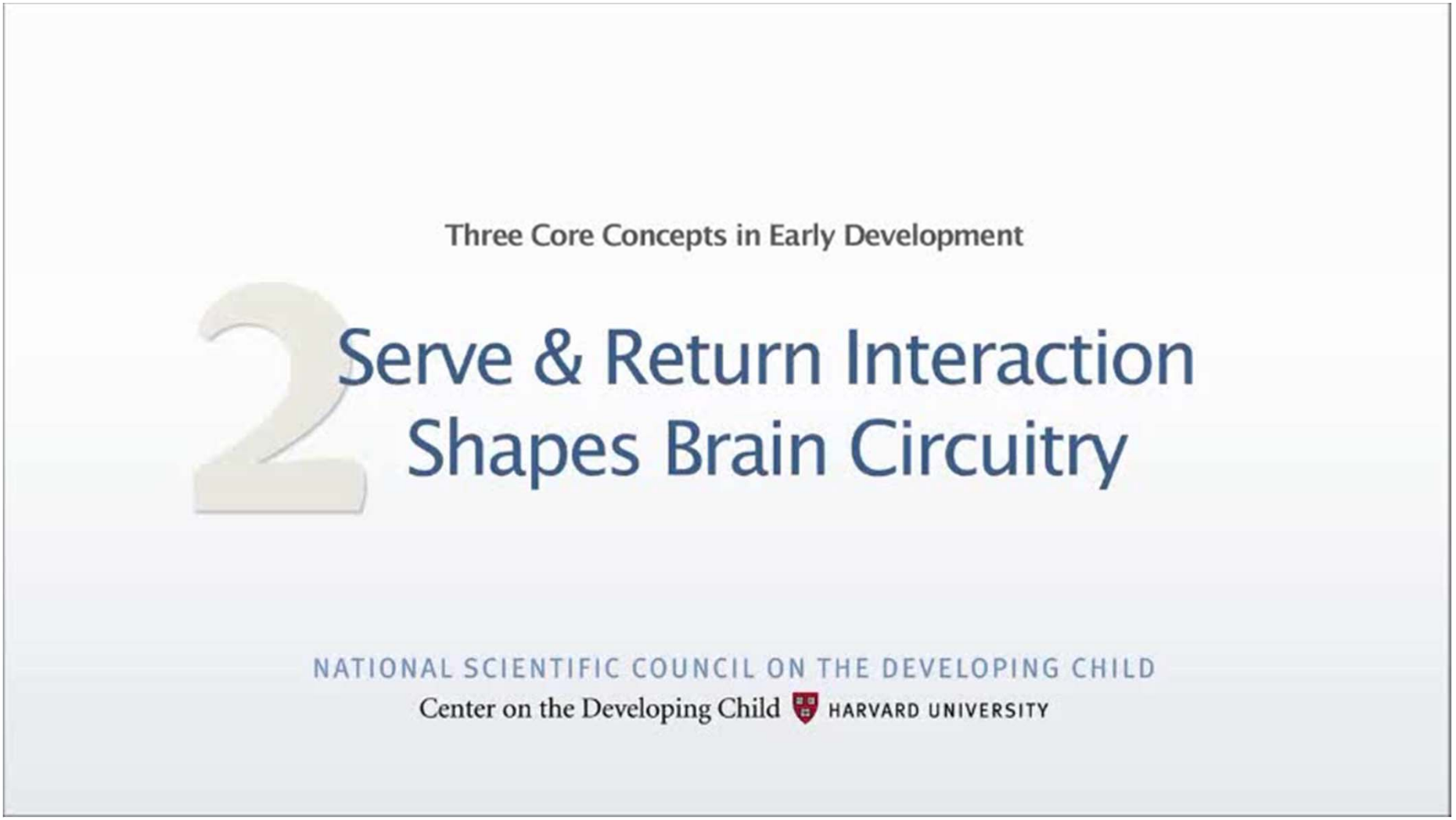


Brain Development



http://developingchild.harvard.edu/resources/multimedia/videos/three_core_concepts/serve_and_return/

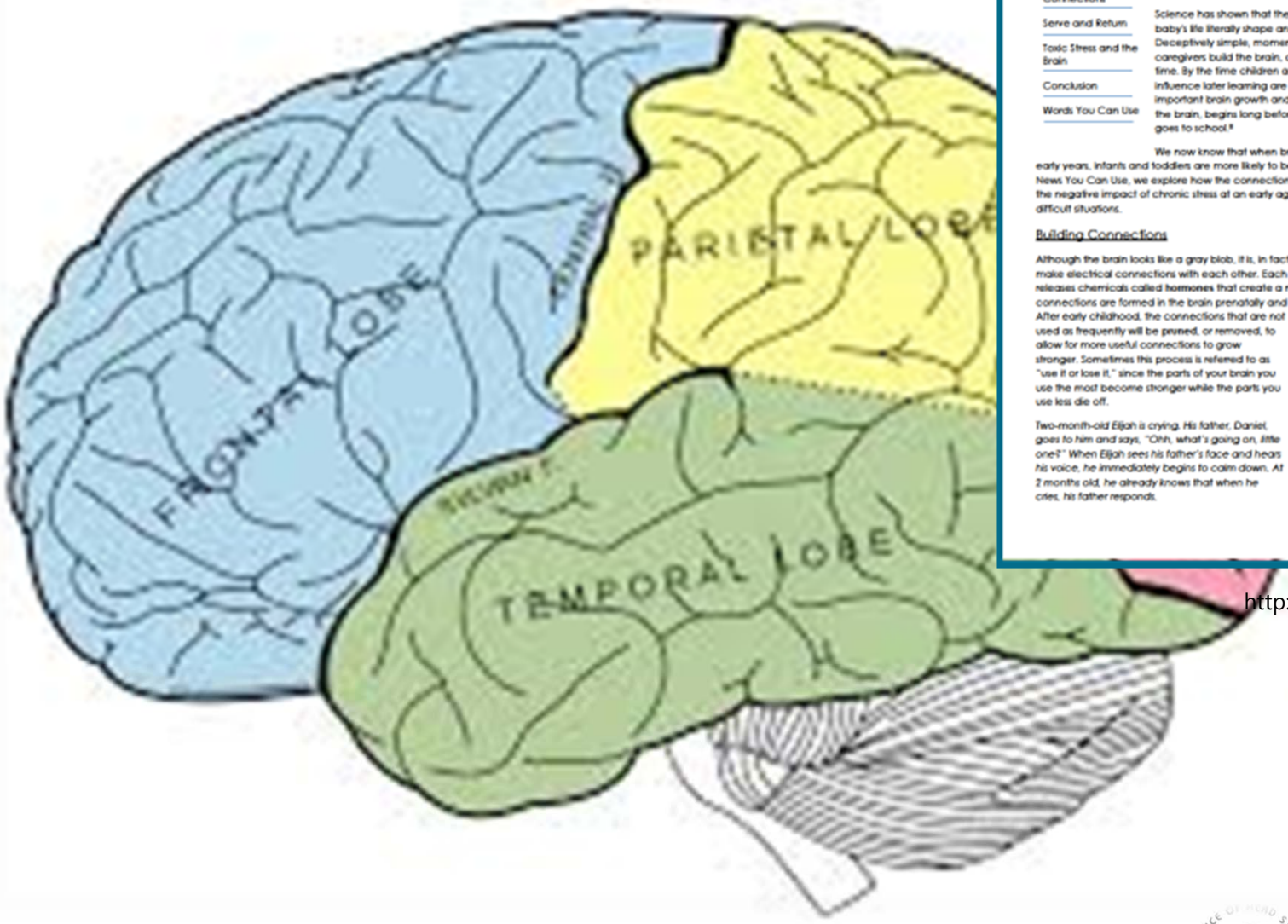
Hand Model of the Brain

Dr. Dan Siegel

Photo courtesy of http://www.drdansiegel.com/home/

Dr. Linda Carson

Science Tells Us…



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News for Head Start, Early Head Start, & Migrant/Seasonal Head Start Programs
October 2012

Brain Development
Building Connections
Serve and Return
Toxic Stress and the Brain
Conclusion
Words You Can Use

Early Experiences Build the Brain - Foundations of School Readiness

Brain Development

Science has shown that the relationships with the important people in a baby's life literally shape and form the architecture of the infant's brain.[1] Deceptively simple, moment-to-moment interactions with responsive caregivers build the brain, creating or strengthening it one connection at a time. By the time children are 2 years old, the structures of their brain that will influence later learning are mostly formed.[2] This means that the most important brain growth and development, the kind that will physically form the brain, begins long before a child ever picks up a pencil, reads a book, or goes to school.[3]

We now know that when brain architecture has a strong foundation in the early years, infants and toddlers are more likely to be robust learners throughout their lives. In this News You Can Use, we explore how the connections within the brain are created and made strong, the negative impact of chronic stress at an early age, and how caring adults can help even in difficult situations.

Building Connections

Although the brain looks like a gray blob, it is, in fact, made up of billions of cells called **neurons** that make electrical connections with each other. Each new experience, each piece of information releases chemicals called **hormones** that create a new connection, or **synapse**, in the brain. More connections are formed in the brain prenatally and in the first few years of life than at any other time. After early childhood, the connections that are not used as frequently will be **pruned**, or removed, to allow for more useful connections to grow stronger. Sometimes this process is referred to as "use it or lose it," since the parts of your brain you use the most become stronger while the parts you use less die off.

Two-month-old Elijah is crying. His father, Daniel, goes to him and says, "Ohh, what's going on, little one?" When Elijah sees his father's face and hears his voice, he immediately begins to calm down. At 2 months old, he already knows that when he cries, his father responds.

http://eclkc.ohs.acf.hhs.gov/hslc/tta-system/ehsnrc/cde/brain-dev/nycuearlybraindev.htm

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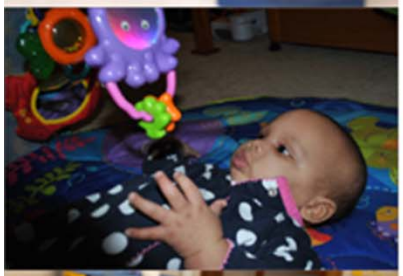
What matters most …

…not whether early experience matters, but rather how early experiences shape individual development and contribute to children's continued movement along positive pathways.

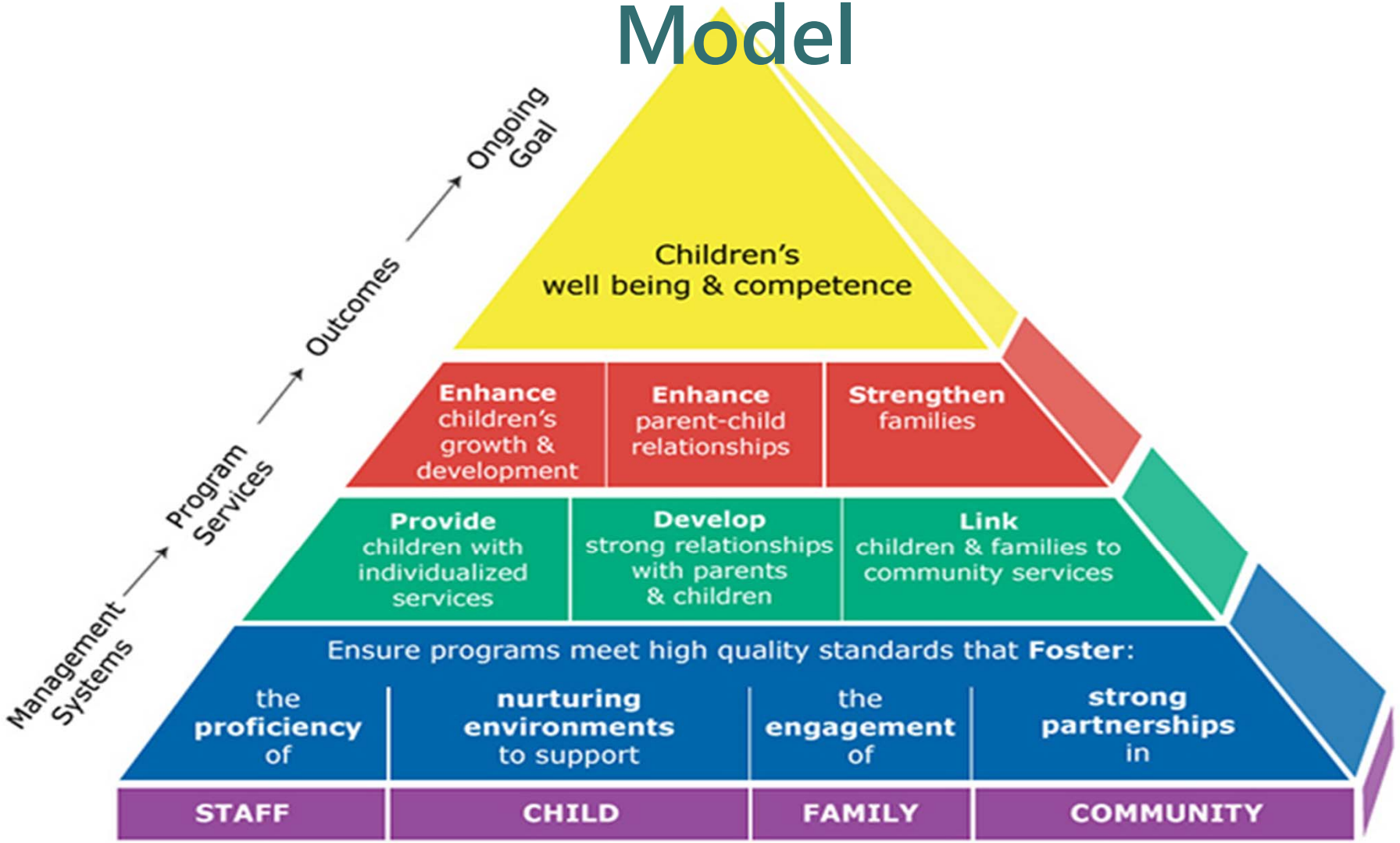


School Readiness

1307: Four School Readiness Steps

1. • ***Establish SR Goals*: Adopt and align with State ELG goals in the 5 essential domains (include parents)**
2. • **Create and *implement a plan of action* for achieving the established school readiness goals**
3. • ***Assess child progress on an ongoing basis and aggregate and analyze data 2-3 times per year (*assess DLL in home language and in English)**
4. • ***Examine data for patterns of progress for groups* of children in order to develop and *implement a plan for program improvement***

Program Performance Pyramid Model



Office of Planning, Research and Evaluation
http://www.acf.hhs.gov/programs/opre/ehs/perf_measures/index.html

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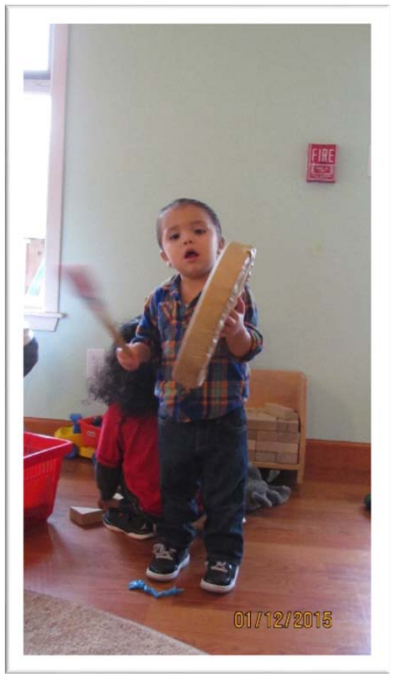
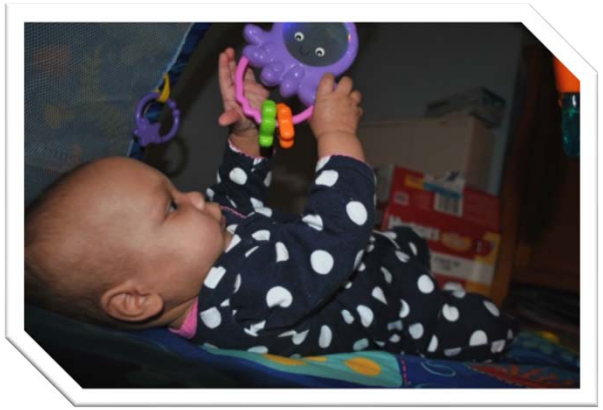
School Readiness: OHS Definition

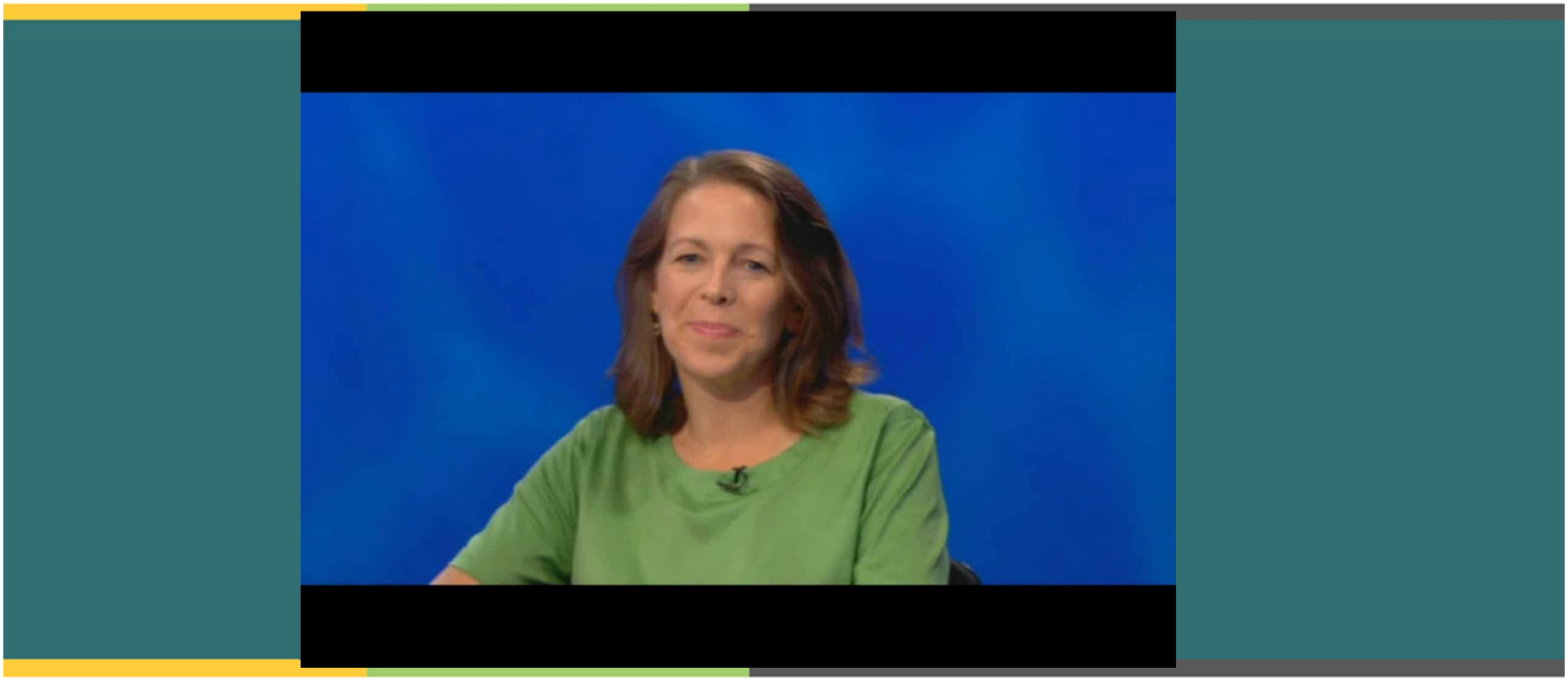
The possession of the skills, knowledge, and attitudes necessary for success in school and for later learning and life.





Photos courtesy EHS NRC

Head Start Program Performance Standards 1307



Leadership Video

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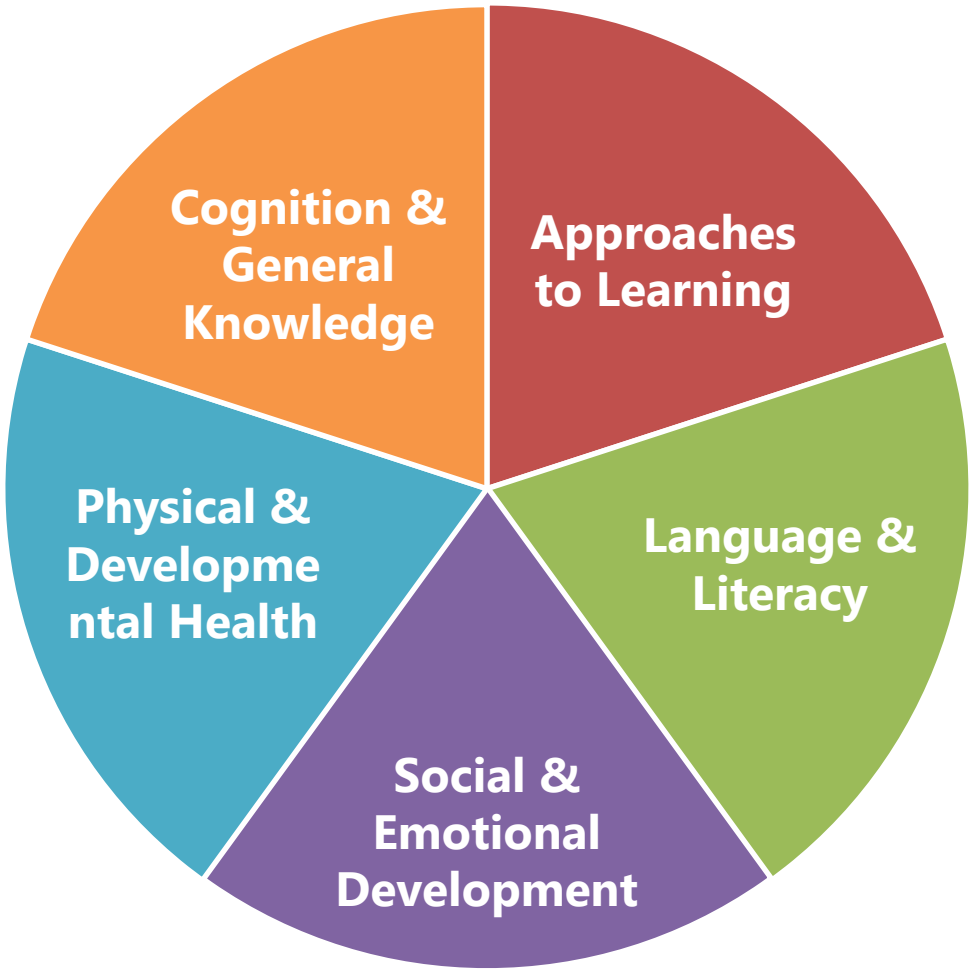
45 CFR 1307-Head Start

§1307.2 – ***definition of school readiness goals***

expectations of children's status and progress across domains of physical well-being and health; social and emotional development; language and literacy development; approaches to learning; and cognition and general knowledge that will improve their readiness for kindergarten

School Readiness Goals
Five Essential Domains For Birth to Five



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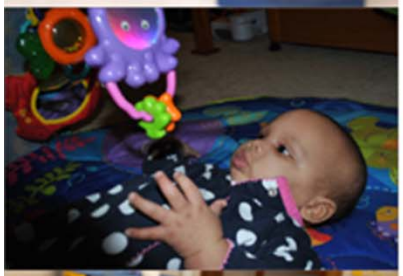
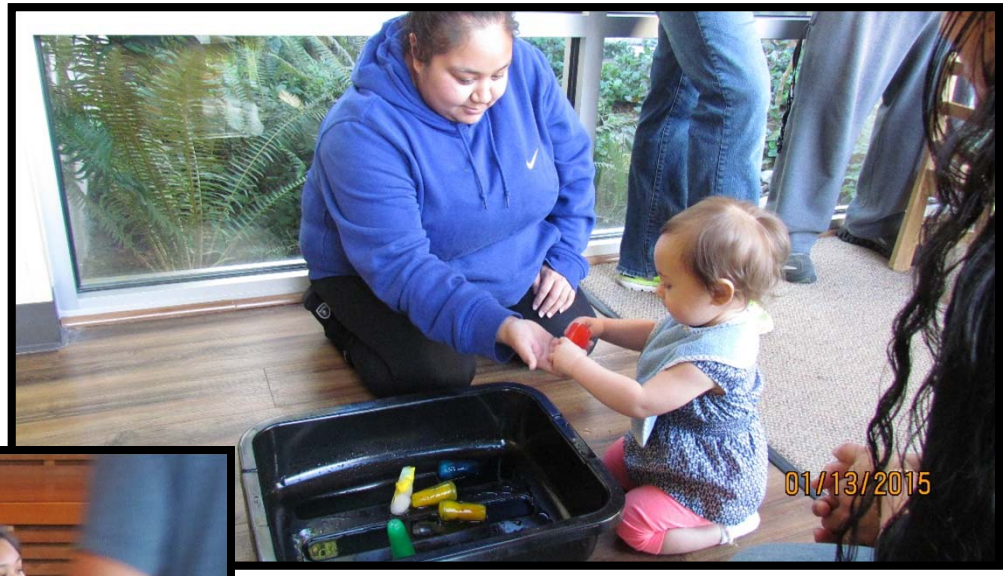
How do these relate to the five essential domains for school readiness?

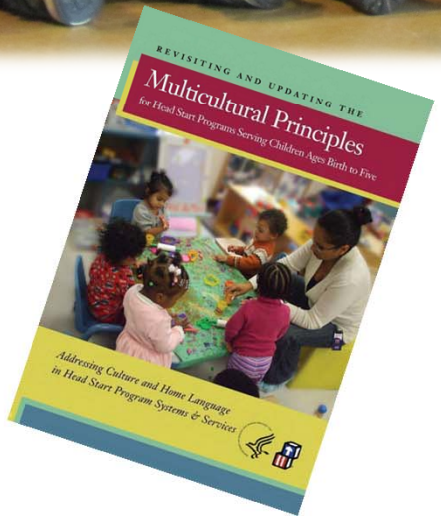


Rooted in Culture

Why Culture?



Multicultural Principles



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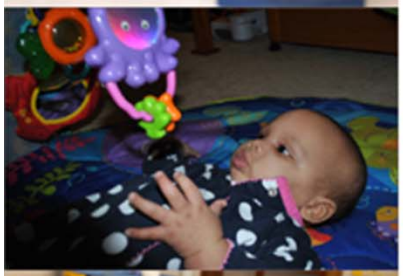
What Is Culture?

"The simplest definition of culture includes those values, beliefs, and practices shared by a group of people.."

- (Zieghan, 2001)s



Deeper Dive

Quality Care and School Readiness

"There is no such thing as a baby … if you set out to describe a baby, you will find you are describing a baby and someone."

- D.W. Winnicott

Photo courtesy of EHSNRC

How do we get to culturally responsive, high quality care?

What are the systemic components of high quality care?

- Responsive Caregiving
- Continuity of Care and Primary Caregivers
- Domains of Development
- Learning Environments

Small Groups

- Divide into small groups of about 5 persons.
- Select from the following topics, one topic you are interested in learning more about.
- In your group, review the content of the handouts included in the folder.
- On chart paper, write the 2 or 3 key messages you extract from the handouts.
- Identify strategies for using the key messages in your program.
- Each group will report back.

Responsive Caregiving

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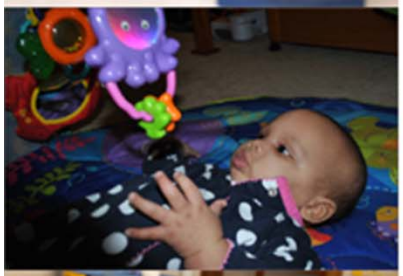
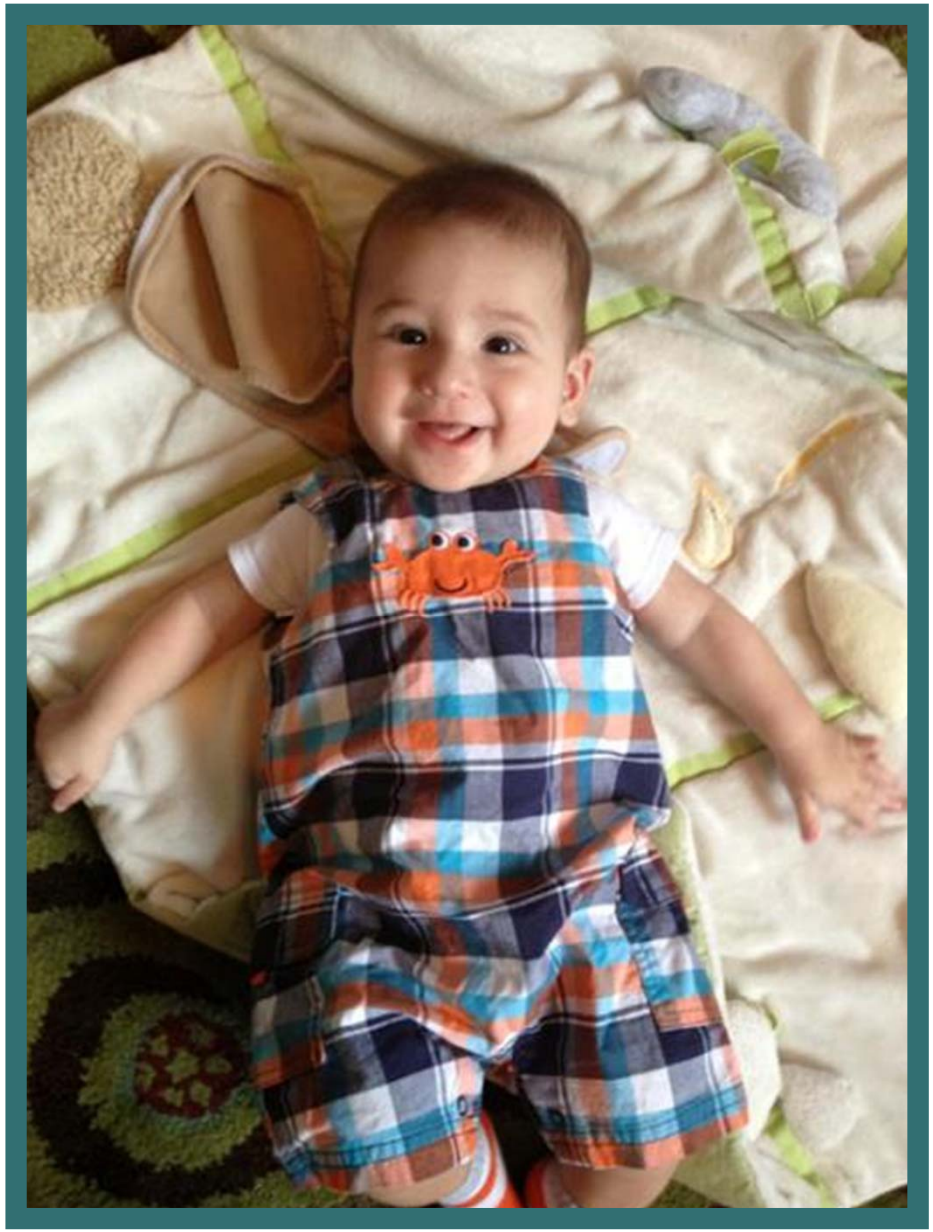
Primary Care

Continuity of Care



Domains of Development

Cognition and General Knowledge



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Approaches to Learning

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Language and Literacy

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Physical Development and Health

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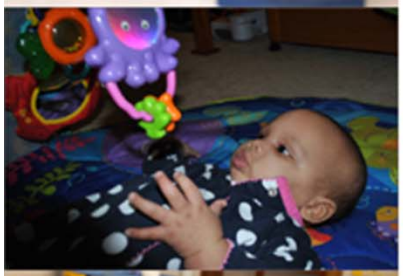
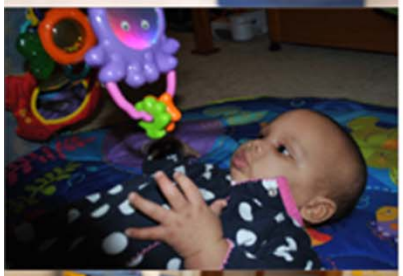


Social and Emotional



Learning Environments

Thank you.

Please complete all of the evaluations – both sides, please!

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Brain Development

Science has shown that the relationships with the important people in a baby's life literally shape and form the architecture of the infant's brain.[i] Deceptively simple, moment-to-moment interactions with responsive caregivers build the brain, creating or strengthening it one connection at a time. By the time children are 2 years old, the structures of their brain that will influence later learning are mostly formed.[ii] This means that the most important brain growth and development, the kind that will physically form the brain, begins long before a child ever picks up a pencil, reads a book, or goes to school.[iii]

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Building Connections

Although the brain looks like a gray blob, it is, in fact, made up of billions of cells called **neurons** that make electrical connections with each other. Each new experience, each piece of information releases chemicals called **hormones** that create a new connection, or **synapse**, in the brain. More connections are formed in the brain prenatally and in the first few years of life than at any other time. After early childhood, the connections that are not used as frequently will be **pruned**, or removed, to allow for more useful connections to grow stronger. Sometimes this process is referred to as "use it or lose it," since the parts of your brain you use the most become stronger while the parts you use less die off.

Two-month-old Elijah is crying. His father, Daniel, goes to him and says, "Ohh, what's going on, little one?" When Elijah sees his father's face and hears his voice, he immediately begins to calm down. At 2 months old, he already knows that when he cries, his father responds.

For newborns and young infants, most of their emotional experiences happen in moments of interaction with their caregivers. Newborn and caregiver interactions usually occur around activities such as comforting, feeding, and holding.[iv] As Elijah is calmed, hormones are released that help him be more alert and able to learn.[v] The synapses in the brain that respond to and expect caring behavior from others will grow strong. This allows Elijah to feel safe and fully able to learn about the many interesting things in the world. Repeated over and over again during Elijah's first years of life, moments like these will build the neural connections that will support learning for the rest of his life.

Serve and Return

Two-month-old Amelia begins a "conversation" with her mother. She babbles, makes faces, gestures, and eventually cries when she has had enough. Her mother responds by echoing the sounds she makes, mirroring her facial expressions, and comforting her when she cries.

Thirteen-month-old Ethan brings his teacher a toy tiger. He hands her the tiger and she says, "Thank you." Ethan then holds his hand out and she gives the tiger back. He says, "Da du." They repeat this exchange half a dozen times before Ethan goes to find a new toy and they start again.

Thirty-month-old Miguel is playing in the backyard. When he reaches the crest of a small hill, he turns to his family child care provider and shouts "Look at me!!" She looks at him and says, "You climbed to the top of the hill. Now what will you do?" He grins and says, "Roll!" After he rolls down the hill, he runs to her and touches her shoulder. She smiles at him and he runs off again.

These vignettes illustrate typical interactions throughout the day of an infant or toddler. Each vignette provides an example of a common quality in relationships that is often repeated over and over again called "**serve and return**."[vi] Although the kind of exchanges that occur might be different depending on a child's age, each infant or toddler reaches out to a trusted adult who then responds. The adult's response acknowledges the child's intention or need and also encourages further interactions. Amelia is only 2 months old, yet she is able to engage her mother's attention, bring out her mother's smile, and elicit comfort. Ethan is engaged in a give-and-take game with his teacher. Miguel is much more independent but still checks with his caregiver as a secure base. These serve-and-return interactions build and strengthen neural connections that support feelings of safety and being an effective communicator. These strong connections build a foundation for all later learning.

Toxic Stress and the Brain

Jonah, a 2-year-old who grew up in a chronically stressful environment, is playing with some blocks. Aiden comes over to join his play. As Aiden picks up a block, Jonah reacts impulsively by hitting and attempting to bite Aiden. The strongest connections in Jonah's brain, those that warn him of danger, react first. He strikes Aiden to protect himself and his belongings.

When infants and toddlers are regularly ignored, frequently experience violence, or spend much of their time in highly stressful environments, they are considered to be exposed to **toxic stress**.[vii] While normal life stressors are not dangerous, and can even be healthy for a developing brain, toxic stress occurs when the body's response system to stress is activated much of the time. Our bodies produce a hormone called **cortisol** as part of the natural reaction to stress. In moderation, cortisol can contribute to a healthy brain structure. In extreme situations where a young child is feeling stressed much of the time, constant exposure to cortisol can alter the way the brain might otherwise develop. For example, a baby exposed to chronic stress is more likely to develop strong connections in the areas of her brain that are on alert for danger. Their brains may expect the world to be a dangerous place. When these babies are older, their brains interpret neutral events as more negative.[viii] When they become children and adults, their brains may spend more energy figuring out if they are in danger and have less attention for things their peers are focused on and learning.

The great news is that you can reduce the impact of toxic stress experienced by babies and young children. The loving, nurturing relationship that parents, family members, and teachers provide can act as a buffer to the effects of toxic stress. Consistent adult support can help a young child come through such difficulties with a brain that is still fully able to learn.

Conclusion

Parents, families, teachers, home visitors, policy makers, and anyone who works with or for infants and toddlers who have a solid understanding of how young brains develop and grow can make informed choices in their work for infants and toddlers. Adults who have the knowledge and skills to provide responsive interactions will help to shape the physical architecture of a child's brain so that he or she will be fully able to learn now, in school, and beyond.

Words You Can Use:

Cortisol – Cortisol is the name of the hormone, or chemical, released when someone is experiencing a situation that feels stressful to them. In small doses, cortisol is actually helpful to a developing brain. In extreme circumstances, too much cortisone can adversely affect brain architecture.

Hormones – Hormones are chemicals that the body creates as a way to send "messages" or information throughout the nervous system. Some hormones are specific to positive feelings, and some are specific to stressful feelings.

Neurons[ix] – Neurons are cells that are specific to the nervous system. Their job is to carry information in the form of chemicals.

Pruning[x] – Pruning occurs as people age and the brain figures out which connections are most important, those that are used most frequently, and which connections are not. The less frequently used connections will be "pruned" or die off, leaving more room for the stronger connections to continue to grow.

Synapse[xi] – A synapse is the space between two neurons where "messages" are sent through hormones.

Serve and return[xii] – Serve and return is a way to describe the types of interactions that are most helpful for infants and toddlers' early learning and brain development. This describes the type of responsive interaction where a child reaches out through vocalizations, gestures, or facial expressions and an adult responds appropriately to the child. This may be repeated many times and, for newborns and young infants, occurs most frequently during routines.

Toxic stress – Toxic stress is the term used to describe the amount of stress that causes so much cortisol to be created and released in the body that it can cause damage to the architecture of the brain. The impact of toxic stress can be lessened when a baby or young child has at least one stable, secure relationship.

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[v] National Scientific Council on the Developing Child, "InBrief: The Science of Early Childhood Development," InBrief Series, retrieved from www.developingchild.net.
[vi] Ibid.
[vii] Ibid.
[viii] Jonathan Cohn, "The Two Year Window: The New Science of Babies and Brains—and How It Could Revolutionize the Fight Against Poverty," *The New Republic* 242 (December 2011): 10–13. Retrieved from http://www.developingchild.net.
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[xi] http://faculty.washington.edu/chudler/neurok.html.
[xii] National Scientific Council on the Developing Child, "InBrief."