

ReadyNation 

The Importance of Understanding Early Brain Development

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ReadyNation 

Three Core Concepts in Early Brain Development

ReadyNation is a business partnership for early childhood and economic success

<http://www.readynation.org/>

Staying On Track

Contact

Developmental Milestones by Age

Support Growth and Learning

Keep Your Child Healthy

Keep Your Child Safe

Choosing Quality Child Care

Preparing for Kindergarten

More Resources

About EDN

Credits

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“We are hardwired for relationships”

Allan Schore

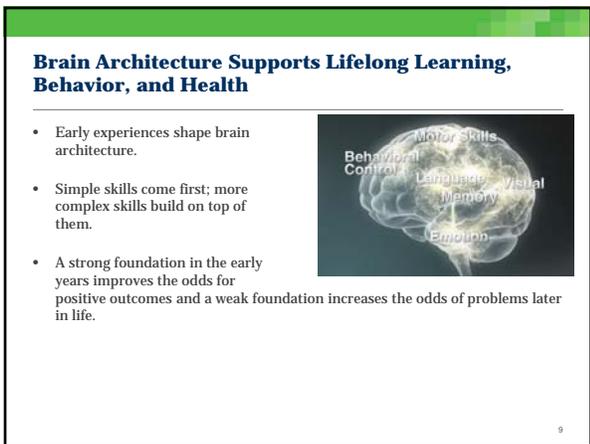
Brains develop and organize in the context of relationships.



Positively and Negatively

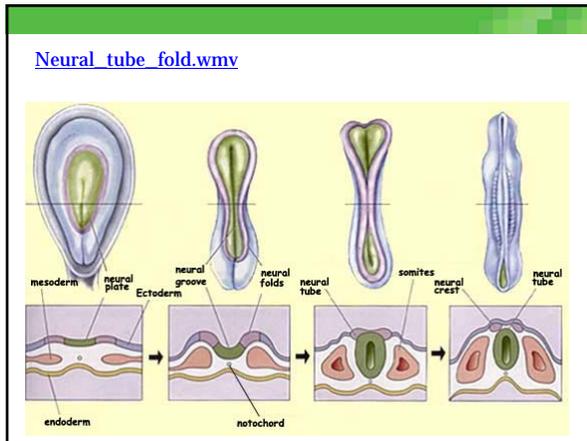




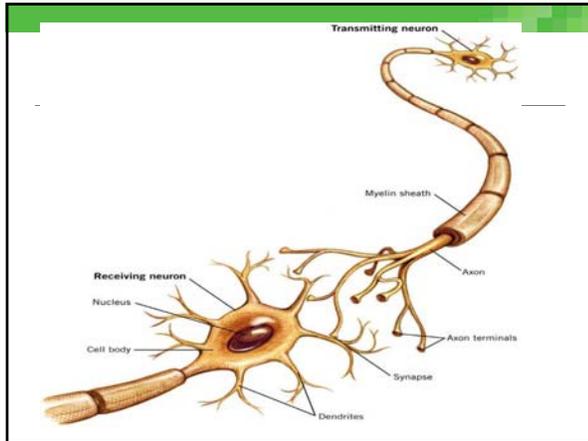


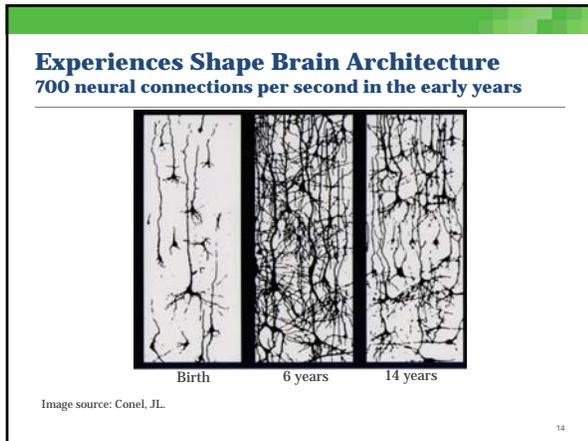
Shifting Developmental Activity across Brain Regions (Perry)

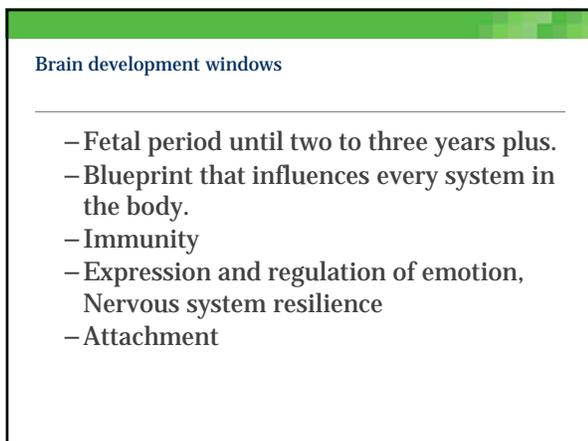
Brain Region	Age of greatest developmental activity	Age of functional maturity	Key functions
Neocortex	Childhood	Adult	Reasoning, problems solving, abstraction, secondary sensory integration
Limbic	Early Childhood	Puberty	Memory, emotional regulation, attachment, affect regulation, primary sensory integration
Diencephalon	Infancy	Childhood	Motor Control, secondary sensory processing
Brainstem	In utero	Infancy	Core physiological state regulation, primary sensory processing.



- [Neural tube fold.wmv](#)
- [fetal brain development.wmv](#)

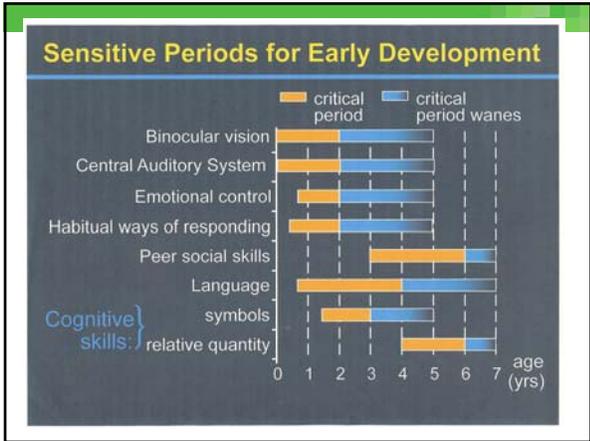






Brain development windows

- Communication
- Intelligence
- Self-regulatory mechanisms for such basics as body temperature and hormone production. (State Regulation)
- States become traits



Overview of Psychosocial Development

- Need for "Secure" attachment relationships in early childhood
- Social emotional development = mental health (3 r's)
 - Experience, regulate & express emotions
 - Explore environment & learn
- Early social interactions impact future relationships

Imitation starts at birth

- Mirror neurons
- Ten-minute old newborn doing tongue-protrusion and mouth-opening, ala Meltzoff experiments.
- [Neonate imitation.wmv](#)
- “Micro events”

Serve & Return Builds Brains and Skills

- Ongoing, reliable interaction with trusted adults is essential for the development of healthy brain circuits.
- Systems that support the quality of relationships in early care settings, communities, and homes help build brain architecture.



Developmental Sequences

	Physical and Language	Emotional	Social
Birth to 1 month	<u>Feedings:</u> 5-8 per day <u>Sleep:</u> 20 hrs per day <u>Sensory Capacities:</u> makes basic distinctions in vision, hearing, smelling, tasting, touch, temperature, and perception of pain	Generalized Tension	Helpless Asocial Fed by mother

Developmental Sequences

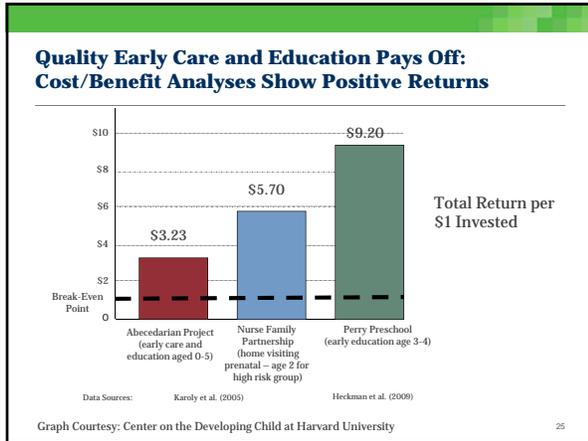
	Physical and Language	Emotional	Social
2 months to 3 months	<p><u>Sensory Capacities:</u> color perception, visual exploration, oral exploration.</p> <p><u>Sounds:</u> cries, coos, grunts</p> <p><u>Motor Ability:</u> control of eye muscles, lifts head when on stomach.</p>	<p>Delight</p> <p>Distress</p> <p>Smiles at a Face</p>	<p>Visually fixates at a face, smiles at a face, may be soothed by rocking.</p>

Developmental Sequences

	Physical and Language	Emotional	Social
4 months to 6 months	<p><u>Sensory Capacities:</u> localizes sounds</p> <p><u>Sounds:</u> babbling, makes most vowels and about half of the consonants</p> <p><u>Feedings:</u> 3-5 per day</p> <p><u>Motor ability:</u> control of head and arm movements, purposive grasping, rolls over.</p>	<p>Enjoys being cuddled</p>	<p>Recognizes his mother. Distinguishes between familiar persons and strangers, no longer smiles indiscriminately.</p> <p>Expects feeding, dressing, and bathing.</p>

Developmental Sequences: Critical period for attachment

	Physical and Language	Emotional	Social
6 months to 8/9 months	<p><u>Motor Ability:</u> control of trunk and hands, sits without support, crawls about.</p>	<p>Specific emotional attachment to mother.</p> <p>Protests separation from mother.</p> <p><i>Begins to connect sensations such as discomfort or hunger and his/her own actions to regulate those feelings such as crying, fussing directed at caregiver</i></p>	<p>Enjoys "peek-a-boo"</p> <p>Emergence of "I love you rituals."</p>



Keys to Healthy Development



A balanced approach to emotional, social, cognitive, and language development, starting in the earliest years of life.



Supportive relationships and positive learning experiences that begin with parents but are strengthened by others outside the home.



Highly specialized interventions as early as possible for children and families experiencing significant adversity.

For more on the science: www.developingchild.harvard.edu *For more on business champions:* www.ReadyNation.org
