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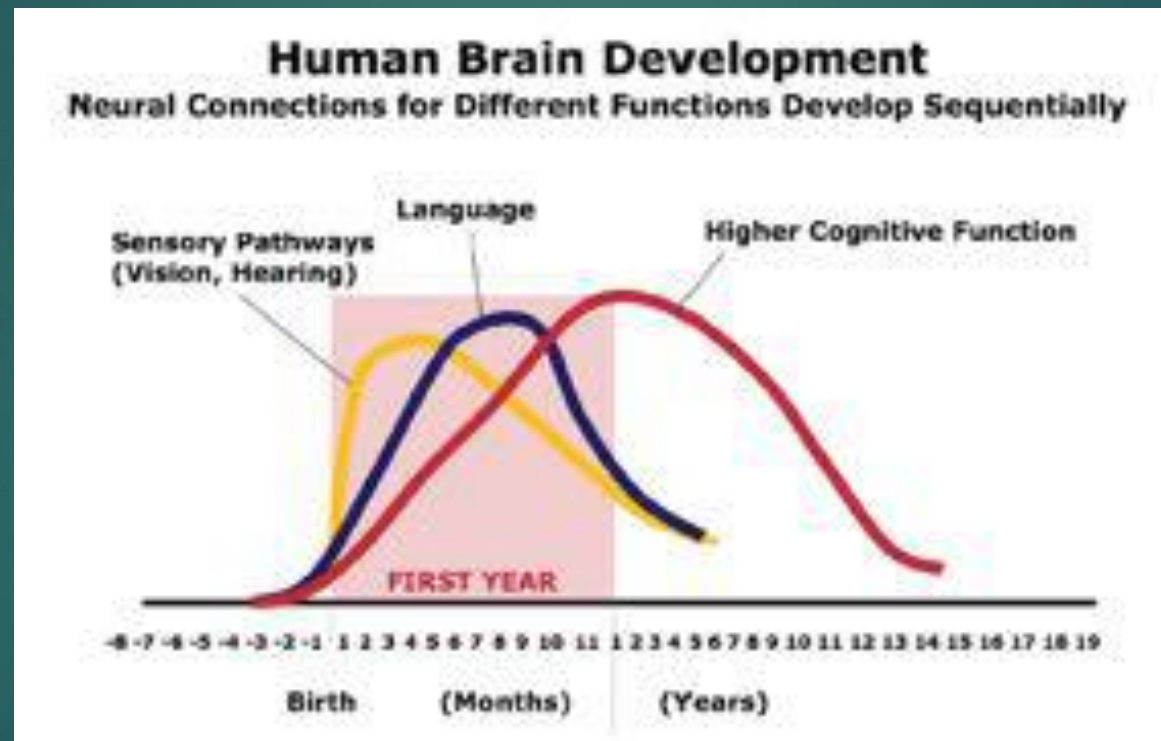
Changing Texas' Legacy: Investments in Early Childhood Development (ECD)

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Why is early childhood important?

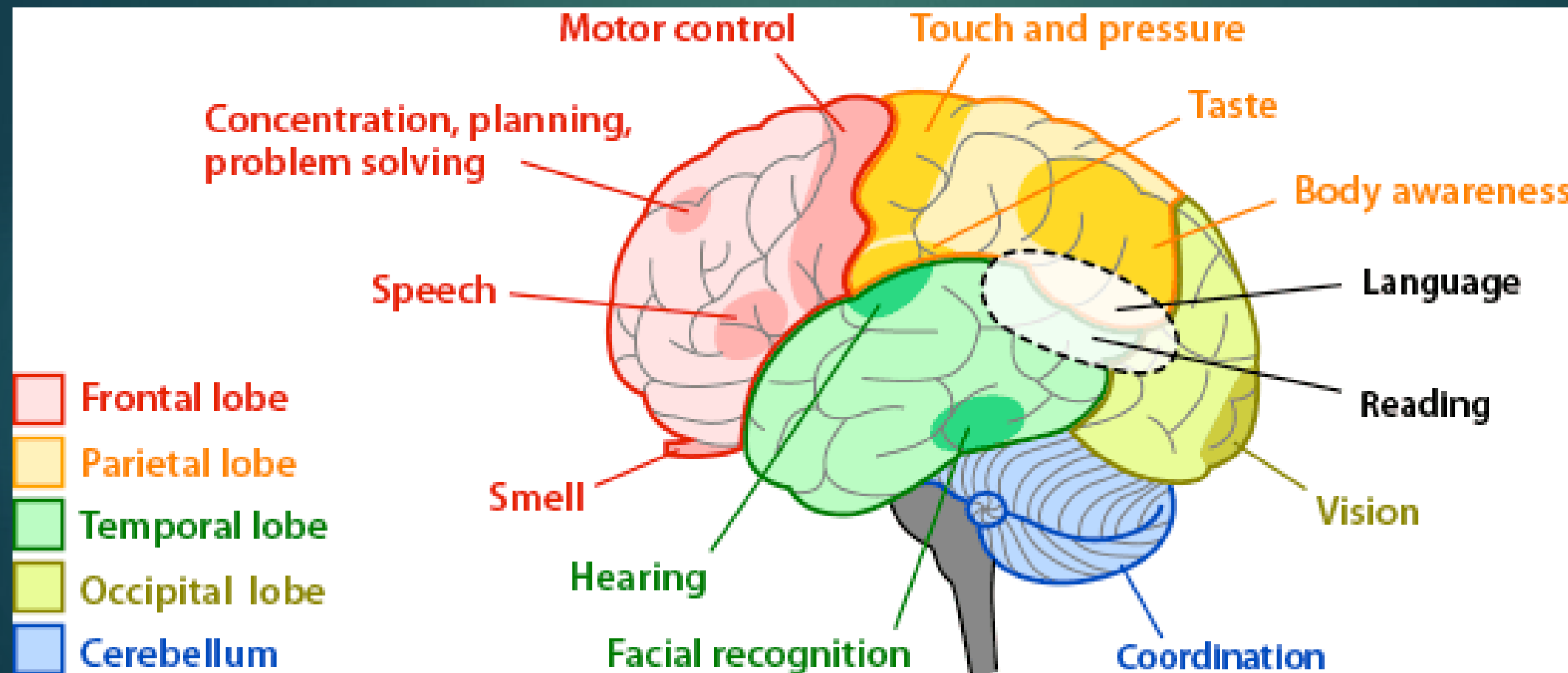
- ▶ Critical window of development
 - ▶ Birth to age 4, brain most susceptible to significant and irreversible modifications in neuronal connections
 - ▶ Brains built rapidly in hierarchal fashion
 - ▶ Combination of genes and environment determine nature and quality of those neuronal connections

Neuronal connections formed early in life



Source: Nelson (2000) in Shonkoff & Phillips (eds), 2000

The BRAIN is responsible for everything!

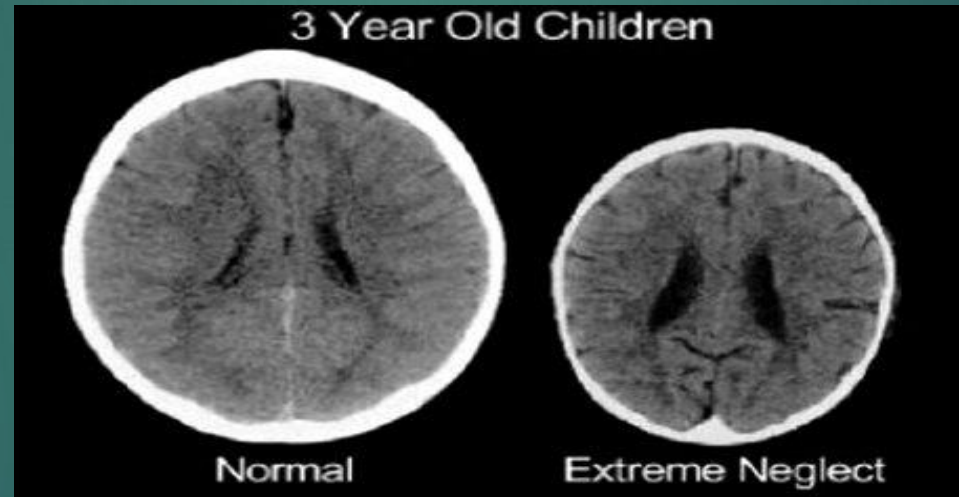


So what influences brain development?

- ▶ Serve and return
- ▶ Attachment
- ▶ Exposure to language
- ▶ Stimulating environments/play
- ▶ Needs lots of inputs!

Why is early childhood important?

- ▶ Neurons that remain inactive or are rarely stimulated are eliminated



Abnormal brain development following sensory neglect in early childhood.

Source: Bruce Perry, "Childhood experience and the expression of genetic potential: what childhood neglect tells us about nature v. nurture."

Why is early childhood important?

- ▶ Implications of suboptimal brain development
 - ▶ Lower IQ
 - ▶ Decreased vocabulary and impaired language
 - ▶ Impaired mental and emotional health
 - ▶ Impaired learning
 - ▶ Cognitive delays

Impact in Adulthood

- ▶ Mental health problems
- ▶ Physical health problems
- ▶ Behavioral problems
- ▶ Incarceration
- ▶ Unemployment
- ▶ Decreased educational attainment
- ▶ Difficulty maintaining relationships

Pathways that affect brain development

▶ **Prenatal**

- ▶ Nutrition
- ▶ Maternal Stress/Depression

▶ **Social**

- ▶ Parent-child relationship
 - ▶ Maternal Stress/Depression
 - ▶ Parenting (discipline, monitoring, warmth, acceptance, responsiveness, etc.)
 - ▶ Serve and return
- ▶ Adverse childhood experiences and toxic stress

Pathways that affect brain development

▶ **Environmental**

- ▶ Lead Poisoning
- ▶ Crowding/housing/chaos
- ▶ Nutrition



MODEL FOR EARLY CHILDHOOD BRAIN DEVELOPMENT

POSITIVE

- A: supportive relationships
- B: economic security
- C: adequate healthcare
- D: adequate nutrition



POSITIVE

- A: loving relationships
- B: adequate prenatal and child care
- C: adequate nutrition
- D: safe and stimulating environments



PARENT



CHILD

- A: domestic violence
- B: maternal stress/depression
- C: poverty
- D: lack of social support



- A: poor housing
- B: adverse childhood experiences
- C: insecure parent attachments
- D: lack of stimulation



NEGATIVE

NEGATIVE

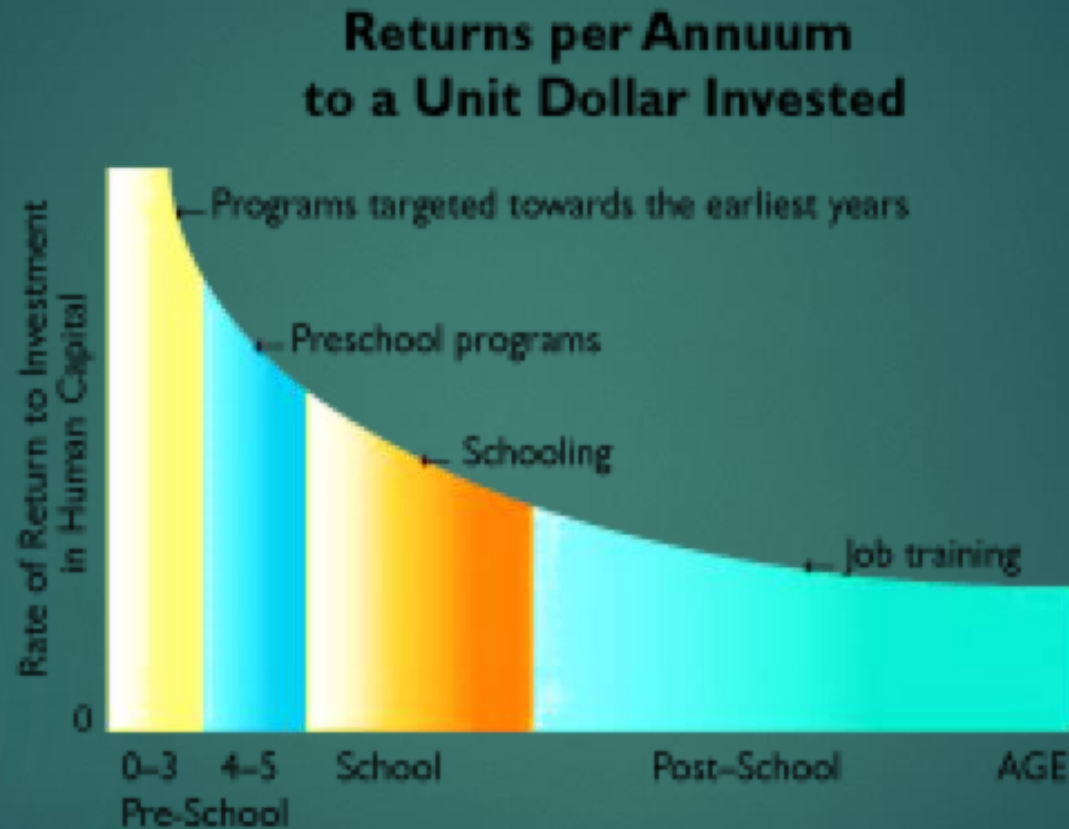
Where are we now?

- ▶ 7.4 million children live in Texas and 1 in 5 children live in poverty. (CPPP 2018).
 - ▶ Poverty puts children at risk for poorer health
 - ▶ Worse health as adults (Gupta 2007)
 - ▶ Reduced educational achievement (Ferguson 2007).
- ▶ 1 in 4 children have experienced ACEs in Texas (CPPP 2018)
- ▶ Compared to other states, Texas ranks 43rd in child , 32nd in education and only 86% of its low income students graduate from high school. (Annie E Casey 2018)

Current evidence-based ECD interventions

- ▶ Early Childhood Education
 - ▶ Head Start programs have demonstrated greater parental involvement and higher earnings for the children who participate when they reach their 20s (Currie, 1995).
 - ▶ James Heckman, Nobel Prize winner in economics demonstrated that every dollar invested in early childhood education has a return of \$ 8 dollars in gains for society
 - ▶ Perry Preschool program demonstrated a return to society of \$17 largely due to rate of employment at age 40, higher educational attainment, and crime prevention (Rolnick, 2004).

Investments in ECD



Source: Heckman, J. J. (2008). Schools, Skills, and Synapses. *Economic Inquiry*, 46: 289-324.
<http://www.heckmanequation.org/>

Current evidence-based ECD interventions

- Research suggests there are three key prongs to successful programs:
 - Access (increase number of full-day seats and demand for them)
 - Quality (including education benchmarks and teachers who earn livable wage)
 - Financially-viable centers (full enrollment, full fee collection, revenues cover per-child cost)

Ultimate Goal

**Every child has access to a stimulating,
engaging environment.**

References

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- ▶ Art Rolnick and Rob Grunewald, *Early Childhood Development: Economic Development with a High Public Return*, March 2003; James J. Heckman and Dimitriy V. Masterov, *The Productivity Argument for Investing in Young Children*, October 2004; High/Scope Educational Research Foundation, *The High/Scope Perry Preschool Study Through Age 40*, November 2004.
- ▶ Center for Public Policy Priorities. Texas Kids Count Project. Available at https://forabettertexas.org/images/KC2018_SOTCReport_web.pdf
- ▶ Currie J, Thomas D. Does Head Start make a difference? *American Economic Review* 1995 Jun;85(3):341– 364.
- ▶ Ferguson HB, Bovaird S, Mueller MP. The impact of poverty on educational outcomes for children. *Paediatr child health*. 2007 Oct; 12(8):701-706.
- ▶ Gupta R, de Wit ML, McKeown D. The impact of poverty on the current and future health status of children. *Paediatr child health*. 2007 Oct; 12(8): 667-672.