

# The Power of the Voice for Healthy Brain Development

Sharing your voice with your baby is essential for brain development.

Research from Dr. Amber Reichert—a neonatal intensive care unit (NICU) Neonatologist who shares EPL’s passion for early literacy—shows why interactions, whether through books, song or simply talking, is necessary for all babies’ happy and healthy development.

## 1 Language Development and the Brain

The third trimester is a critical time for the formation of brains.

The parts of the ear that help us hear have formed and babies react to noises and voices. Thousands of new neural connections form every second, peaking at almost 40,000 per second starting at 34 weeks gestation.<sup>1</sup>

As it grows, the smooth brain becomes more wrinkled and folded through a process called Cortical Folding—this happens because of the many connections between the neurons (brain cells) that the brain is making.

Compare a baby’s brain at 25 weeks and 40 weeks:<sup>2</sup>



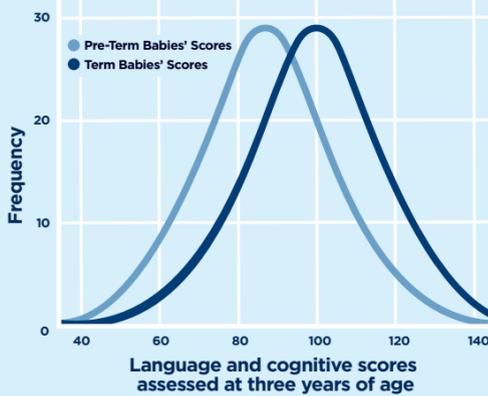
Every sound, voice and experience influences how these connections form.

*Every experience matters for brain development.*

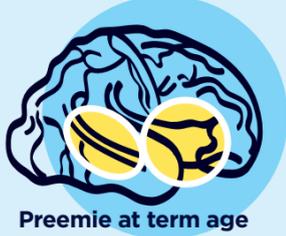
## 2 The Impact of Prematurity

Babies born prematurely have increased risk of language and learning challenges.

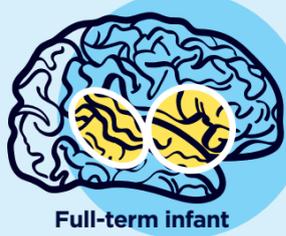
Local data shows that babies born prematurely have lower language and cognitive scores at three years of age as compared to babies born to term.<sup>3</sup>



There are also differences in their brains. Even when a pre-term baby reaches “term” age (i.e. is at the age when they were “due”), we see less depth and fewer folds in the brain surface, particularly in the areas that are known to help in speech processing and understanding language.<sup>4</sup>



Preemie at term age



Full-term infant

Language exposure may be a factor that contributes to these differences.

Babies born to term have spent months listening to the mother’s voice and patterns of conversation. Preemies spend much of their third trimester in a hospital’s NICU—a vastly different experience with a lot more noise and a lot less language.<sup>5</sup>



*Language supports healthy development.*

## 3 Making a Difference is Fun and Easy

Reading, talking and singing to babies—pre-term or otherwise—is essential for speech and language development.

Recent data suggests that for every 100 more adult words that babies at 32 weeks hear per hour, babies’ language scores go up by two points.<sup>6</sup>

You can help your baby’s brain development and give your baby strong language skills by sharing fun, daily interactions.

Following the “serve and return” model, notice your babies’ cues and interests (*the serve*) and respond with support and encouragement (*the return*).

By interacting with babies, we are helping their brains build connections<sup>7</sup> and develop to their fullest potential.



*The benefits are life changing.*

## 4 Creating Better Future Outcomes

A child’s experience in the first three years directly impacts later development and learning.

With strong language and literacy skills, children are more likely to:<sup>8</sup>



Go Further in School



Have a Higher Income



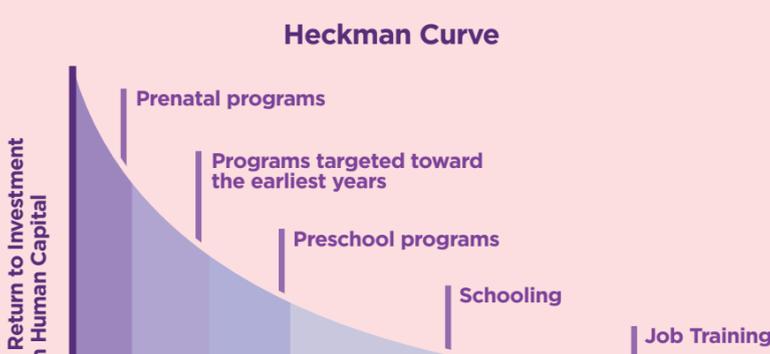
Avoid Incarceration



Be Healthier and Happier Throughout Life

Early childhood education is the best investment society can make, yielding the highest rate of return.<sup>9</sup>

### Heckman Curve



Highly educated, skilled individuals create a productive workforce that strengthens the economy while reducing social costs.<sup>10</sup>

*When we invest in children, everyone wins.*

## How EPL Can Help

**EPL is your early literacy center.**

We have classes and resources to support your children’s speech and language development—skills that medical professionals such as Dr. Reichert know are crucial to our overall health.

To view all citations and learn more, visit [epl.ca/sharing-voices](http://epl.ca/sharing-voices).