

Brain development: A look at four programs in Georgia that support optimal brain development

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Corresponding author: Nancy C. Webb • 1120 15th Street, CJ2300, Augusta, GA 30912 • 706-721-9080 • nwebb@augusta.edu**ABSTRACT**

Background: Georgia is making strides to improve its early care and education system through program development within state agencies and alliances. These timely, statewide programs are focused on improving understanding of the importance of brain development.

Methods: We reviewed the mission and information provided by four Georgia agencies with the aim of developing and improving programs and educational opportunities to instruct educators, policy makers, the general public, and others about child development in the context of brain development.

Results: For young children in Georgia, the four organizations are committed to ensuring opportunities for well-being. Georgia is moving forward in its quest to improve resources and environments for young children, families, and citizens. The agencies and activities include Better Brains for Babies; the Georgia Department of Early Care and Learning; Georgia Early Education Alliance for Ready Students; and the Talk With Me Baby™ program.

Conclusions: Georgia is making substantial efforts to provide and support early education environments based on emerging research on how brain development affects various aspects of a child's development, including those that are social, cognitive, emotional, physical, and linguistic.

Key words: brain development, cognitive development, early childhood education

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INTRODUCTION

Brain development begins within three to five weeks of the time of conception (Zero to Three, <https://www.zerotothree.org/resources/>). The brain develops quickly during the first year of life. Further, the fastest period of growth occurs during the first five years (GEEARS), with 85% occurring in the first three years of life (<http://www.talkwithmebaby.org>). What happens or *doesn't happen* while the child is *in utero* and during his/her early years profoundly affects brain development. For example, stress, poverty, lack of nutrition, and abuse can cause adverse effects (Urban Child Institute). In this report, we explore four programs in Georgia that have been established to make a difference in supporting healthy brain development in the context of Georgia's early care and education programs for its youngest citizens.

Overview of the Brain's Development

Brain development, similar to the child's overall development, is sequential. The prenatal period is marked by the formation of the approximately 100 billion cells, called neurons, which are present at birth. Although, at the

time of birth, the human brain has all the neurons it will ever have, the brain continues to grow throughout life. Through the newborn period, these neurons make trillions of connections through a process called myelination.

As the child grows into the early childhood years, his or her brain experiences further development as it refines its connections and grows to 80% of its adult weight. Thus, the prenatal and early childhood years are associated with optimal brain development. Such development is activity-dependent because experiences of the young child excite the neural circuitry (Zero to Three). The circuits that are consistently stimulated are strengthened, but those that are not stimulated tend to weaken. Between birth and three years of age, the child's brain makes over 700 neural connections every second (<https://www.zerotothree.org/early-development/brain-development>). The caregiver's relationship with the child establishes the foundation for the child's brain development. As a result, there is a need for parents to learn about factors involved in early brain development so that they can provide an environment in which babies and young children can thrive. During the early years of their children, parents need

to have access to high-quality early childhood education programs (Better Brains for Babies). As noted earlier, brain development is shaped by many factors, including what happens or *doesn't happen* while children are *in utero* and during their early years. Constructive early experiences have a profound effect on children's chances for achievement and contentment (Urban Child Institute), and negative experiences can adversely affect the brain's ability to provide mechanisms of adaptability and resilience.

METHODS

Given the importance of the influences affecting early brain development, we investigated related educational programs developed and offered in Georgia. To determine what Georgia offers to support and educate its citizens on the importance of promoting optimal brain development in early childhood, we examined the websites of four sources: Bright from the Start: Georgia Department of Early Care and Learning (DECAL); the Georgia Early Education Alliance for Ready Students (GEEARS); the Georgia Department of Public Health's program, Talk With Me Baby™ (TWMB™); and Better Brains for Babies.

RESULTS

The results show that the four organizations we reviewed are committed to ensuring well-being opportunities for young children in Georgia. It is apparent that Georgia is moving forward in its quest to improve resources and environments for young children, families, and citizens. The following provides an overview of the work of each agency.

Better Brains for Babies (BBB)

BBB has a mission to help children grow up in healthy environments that ensure the development of the whole child, including social, emotional, academic, and occupational success. Their vision involves the concept of all children growing up in healthy, secure, and enriching environments. To help ensure this, BBB embraces four goals: <http://www.bbbgeorgia.org/aboutUs.php>.

- Education: Inform Georgia parents and caregivers on the impact of early brain development on the child's overall development
- Advocacy: Share brain research in order to support policies, practices and funding decisions
- Training: Recruit BBB volunteers to disseminate information about brain development statewide
- Evaluation: Determine the effectiveness of the education, advocacy, and training efforts

BBB, a collaborative effort between state, local, private, and public organizations, is supported by the Georgia Division of Family and Children's Services and the Office of Prevention and Family Support. Educational materials include printed information, podcasts, posters, and videos.

Georgia Department of Early Care and Learning (DECAL)

DECAL, established on July 1, 2004, is an agency responsible for meeting the childcare and education needs of young children. Based on evidence-based practices related to brain development, the department leads the state in early care and education policies and programs. DECAL monitors over 4,900 licensed child care programs and 3,875 funded Georgia Pre-K programs (DECAL 2016 Decidedly DECAL <http://dec.al.ga.gov/documents/attachments/DECALSeptember2016.pdf>). Its mission is to improve the quality of early care and education through a Quality Improvement Rating System (QIRS). As of September 2016, there were 1,150 Quality Rated (QR) childcare programs and 2,738 programs participating in QR in Georgia (<http://dec.al.ga.gov/documents/attachments/DECALSeptember2016.pdf>). That number has increased from 1,779 in 2014. DECAL's vision is to deliver exemplary early care and education programs that improve the quality of early learning experiences, increase school readiness, and improve overall school performance. It has a goal of having all Georgia child care programs quality rated by December 31, 2017.

In addition to printed information, podcasts, posters, videos, and websites, DECAL supports the work of the Child Care Resource and Referral (CCR&R) agencies. A goal of these agencies is to support the quality improvement initiative by assisting childcare directors and providers through the QR system. The first author of this manuscript is Primary Investigator (PI) for CCR&R, Region 3. In a recent quarterly report, the Director of CCR&R Region 3 reported that her team assisted 27 programs in their region in obtaining QR status. Thus, the collaborative relationship between DECAL and the CCR&R regions strives, throughout the state, to educate child care programs and parents on the importance of brain development and its outcomes.

Georgia Early Education Alliance for Readiness for School (GEEARS)

The vision of GEEARS is to inspire and provide leadership for a statewide movement on quality early learning and healthy development for children ranging in age from birth to five. In addition to printed materials and a website, GEEARS provides polling services to understand voter attitudes on early care and education. GEEARS has also hosted noted speakers such as Jack Shonkoff, Director of the Center for the Developing Child at Harvard University. GEEARS also supports and promotes the Mayor's Reading Club, which allows over 15,000 books to be distributed in Atlanta to children from birth through eight years of age.

Talk With Me Baby™ (TWMB™) was designed to encourage parents and caregivers to talk more to their babies. The Commissioner of the Georgia Department of Public Health, Dr. Brenda Fitzgerald, in conjunction with the Marcus Autism Center at Emory University and Georgia's

Children's Cabinet and with First Lady Sandra Deal, has spearheaded the Talk With Me Baby™ program. This activity, intended to enhance verbal interactions between caregivers and infants, trains individuals in communities and hospitals to become coaches to teach parents to support language nutrition with their babies. Educational materials provided include downloadable printed materials, a poster series, and various websites. Although various materials are available, the program is still in the development stage.

DISCUSSION

Based on research showing how brain development affects a child's development, including factors that are social, cognitive, emotional, physical, and linguistic, Georgia is making substantial efforts to provide and support early education environments. BBB, GEEARS, and TWMB™ are involved in the way DECAL educates children, child care providers, families, and the community.

DECAL's promotion of QR programs throughout Georgia is expanding. According to a 2016 National Institute for Early Education Research report, 13 states are now using some sort of QIRS, and 30 others are considering them (<http://nieer.org/publications/it's-stars-more-states-are-using-quality-rating-systems-pre-k>). Thus, the move to QIRS is probably not a passing trend.

CONCLUSIONS

Research has shown that young children's brains grow quickly during the first five years of life. In order for children's brains to develop to their full potential, each child needs a stimulating environment in which they are spoken to during give-and-take conversations, receive good and ample nutrition, and make emotional connections with primary caregivers who are responsive and provide knowledgeable and sensible care.

Georgia has various programs designed to improve environments in which young children's optimal brain development can be supported. Through the four programs addressed in this report, Georgia is making advancements in reaching families and children. The next step would be to collect data on the effects these programs have on children's environments, families, supports, and brain development.

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Zero to Three <https://www.zerotothree.org/early-development/brain-development>

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